

Technical Report No. 223
CURRICULUM VITAE OF SCIENTISTS WHO PARTICIPATED
IN THE U.S. IBP GRASSLAND BIOME STUDIES
FOR 1971 AND 1972

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Fort Collins, Colorado

GRASSLAND BIOME
U.S. International Biological Program

May 1973

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ABSTRACT

This report is intended to serve as a directory of all participants in the U.S. IBP Grassland Biome studies during 1971 and 1972. All entries in this report are in alphabetical order and are written in a comparable format and contain background information on academic training and professional experience, major interests, professional activities, and all publications and technical reports. Preceding the individual vitae is an overall list of all participants contained herein, together with their formal organizational affiliation. Asterisks in some lists of publications indicate reports funded by the Grassland Biome.

GRASSLAND BIOME PERSONNEL

NAME	INSTITUTION
Anway, J. C.	Colorado State University
Ares, J. O.	University of Buenos Aires
Baldwin, P. H.	Colorado State University
Becker, C. F.	University of Wyoming
Bledsoe, L. J.	University of Washington
Blocker, H. D.	Kansas State University
Bokhari, U.	Colorado State University
Brittain, E. G.	Australian National University
Burdick, D. J.	California State University, Fresno
Burman, R. D.	University of Wyoming
Christensen, M.	University of Wyoming
Clark, F. E.	Agricultural Research Service, Fort Collins
Cole, C. V.	Agricultural Research Service
Cole, G. W.	Colorado State University
Coleman, D. C.	Colorado State University
Collins, D. D.	Montana State University
Connor, D. J.	La Trobe University
Cringan, A. T.	Colorado State University
Crossley, D. A., Jr.	University of Georgia
Daubenmire, R.	Washington State University
Dodd, J. L.	Colorado State University
Doxtader, K. G.	Colorado State University
Duncan, D. A.	U.S. Forest Service, Fresno, CA
Dyer, M. I.	Colorado State University
Ellis, J. E.	Colorado State University
Ellis, R. H.	The Center for the Environment and Man
Ferguson, W. S.	Colorado State University
Fisser, H. G.	University of Wyoming
Francis, R. C.	Inter-American Tropical Tuna Commission
French, N. R.	Colorado State University
Gibson, J. H.	Colorado State University
Gilbert, R. O.	Battelle Memorial Institute
Grodzinski, W.	Jagiellonian University, Poland
Hansen, R. M.	Colorado State University
Harris, J. O.	Kansas State University
Harris, L.	University of Florida
Haydock, K. P.	CSIRO Div. Mathematical Statistics
Herbel, C. H.	Agricultural Research Service
Huddleston, E. W.	Texas Tech University
Hulett, G. K.	Fort Hays Kansas State College
Hunt, W. H.	Colorado State University
Hutcheson, H. L., Jr.	South Dakota State University
Hyder, D. N.	Agricultural Research Service, Fort Collins
Innis, G. S.	Colorado State University
Jameson, D. A.	Colorado State University
Johanningsmeier, A. G.	Cushing Academy
Klein, D. A.	Colorado State University

NAME	INSTITUTION
Koranda, J. J.	University of California, Livermore
Kucera, C. L.	University of Missouri
Lavigne, R.	University of Wyoming
Lewis, J. K.	South Dakota State University
Likens, G. E.	Cornell University
Lloyd, J. E.	University of Wyoming
Marshall, J. K.	Colorado State University
McColl, J. G.	University of Minnesota
McDaniel, B.	South Dakota State University
Miller, L. D.	Colorado State University
Nagy, J. G.	Colorado State University
O'Farrell, T. P.	Battelle Memorial Institute
Olendorff, R. R.	American Museum of Natural History
Packard, R. L.	Texas Tech University
Parton, W. J., Jr.	Colorado State University
Paur, L. F.	Colorado State University
Pengra, R. M.	South Dakota State University
Pfadt, R. E.	University of Wyoming
Pieper, R. D.	New Mexico State University
Pimm, S. L.	Game Bird Research Association, Las Cruces, NM
Pochop, L. O.	University of Wyoming
Raitt, R. J.	New Mexico State University
Rasmussen, J. L.	Colorado State University
Reuss, J. O.	Colorado State University
Rice, R. W.	University of California, Davis
Rickard, W. H., Jr.	Battelle Memorial Institute
Risser, P. G.	University of Oklahoma
Rodell, C. F.	Colorado State University
Ryder, R. A.	Colorado State University
Sauer, R. H.	Colorado State University
Schitoskey, F., Jr.	Bureau of Sport Fisheries and Wildlife, Fresno, CA
Sims, P. L.	Colorado State University
Singh, J. S.	Kurukshetra University
Smith, F. M.	Colorado State University
Smolik, J. D.	South Dakota State University
Staffeldt, E. E.	New Mexico State University
Steinhorst, R. K.	Colorado State University
Striffler, W. D.	Colorado State University
Swartzman, G.	Independent Research
Swift, D. M.	Colorado State University
Thatcher, T. O.	Colorado State University
Tomanek, G. W.	Fort Hays Kansas State College
Trlica, M. J., Jr.	Colorado State University
Van Dyne, G. M.	Colorado State University
Van Wyk, J. J. P.	Potchefstroom University, South Africa
Warren, C. G.	U.S. Geological Survey, Denver
Watt, K. E. F.	University of California, Davis
Watts, J. G.	New Mexico State University
Weaver, T. W.	Montana State University

NAME	INSTITUTION
Whicker, F. W.	Colorado State University
Whitman, W. C.	North Dakota State University
Wiegert, R. G.	University of Georgia
Wielgolaski, F. E.	University of Oslo
Wiens, J. A.	Oregon State University
Williams, G. J. III	Washington State University
Woodmansee, R. G.	Colorado State University

Name: Jerry C. Anway

Born: 1939

Academic Training:

Degree	Year	Institution	Major
B.S.	1961	Iowa State University	Botany and Zoology
Ph.D.	1965	University of Nebraska	Botany and Genetics

Special Training:

Professional Experience:

Date	Position	Institution
1965-1966	Fulbright Research Fellow	University of Western Australia
1966-1971	Assistant Professor of Botany	Ohio University
1971-	Postdoctoral Fellow	Colorado State University, U.S. IBP Grassland Biome

Professional and Honorary Societies:

Major Interests:

Application of modelling techniques to generic and subgeneric relationships and evolutionary trends to angiosperms.
Modelling consumers, U.S. IBP Grassland Synthesis project.
Continuation of studies of *Tilia* L. in North America.
Population analysis of hybrids and clinal species leading to genetic mapping.

Current Professional Activities:

Postdoctoral Fellow, U.S. IBP Grassland Biome, Colorado State University
Group leader - modelling liaison - Jornada Site, Las Cruces, New Mexico

Publications, Technical Reports:

- Anway, J. C. 1968. The systematic botany and taxonomy of the *Polemonium foliosissimum* A. Gray complex (Polemoniaceae). American Midland Naturalist, Vol. 79, No. 2, pp. 458-475.
- Anway, J. C. 1968. A laboratory exercise on the distinction between classification, identification and recognition. American Journal of Botany, Vol. 55, No. 6, part 2 (abstract).
- Anway, J. C. 1969. The evolution and taxonomy of *Calectasia cyanea* R. Brown (Xanthorrhoeaceae). Australian Journal of Botany, Vol. 17, No. 1, pp. 147-159.
- Anway, J. C. and W. Witters. 1969. Investigations into General Biology. Kendall/Hunt Publishing Co.

- Anway, J. C. and J. L. Sledge. 1970. Hybridization between members of *Polemonium delicatum* Ryd. and *P. foliosissimum* A. Gray. var. *molle* (Greene). American Midland Naturalist, Vol. 84, No. 1, pp. 136-143.
- Anway, J. C., D. Govoni, J. R. Sligo, and T. J. Hummel. 1970. Six computer programs useful in plant population analysis. Taxon, Vol. 19, No. 3, pp. 320-323.
- Anway, J. C. 1971. Morphological and biochemical variations in *Tilia* L. in Eastern North America. Ohio Academy of Science. Vol. 14, April (abstract).
- Anway, J. C. and L. Hickok. 1971. Clinal variation in morphology and flavonoid chemistry of *Tilia* L. in Eastern North America. Brittonia, Vol. 24, No. 1, pp. 2-8.
- Anway, J. C., R. Sauer, B. Parton, B. Hunt, C. Rodell, and G. Innis. 1972. ELM: an intermediate level simulation model of a shortgrass ecosystem. Technical Report No. 156, U.S. IBP Grassland Biome pp. 106-137.

Name: Jorge Oscar Ares

Born: 1943

Academic Training:

Degree	Year	Institution
Bachelor	1961	National Secondary School "Hipolito Irigoyen"
Agronomic Engineer	1966	Faculty of Agronomy and Veterinary Sciences, University of Buenos Aires, Argentina

Professional Experience:

Date	Position	Institution
1963-1965	Demonstrator	Department of Biology and Ecology University of Buenos Aires
1966-1967	Graduate Demonstrator	Department of Biology and Ecology University of Buenos Aires
1967-1969	Assistant Lecturer	Dept. of Biology and Ecology University of Buenos Aires
1969-1971	Interine Lecturer	Dept. of Biology and Ecology University of Buenos Aires
1968	Graduate Demonstrator	Interamerican Institute of Agricultural Science
1969	Lecturer	South National University, Argentina
1965-1970	Investigator	Cooperative Program, Rafaela, Santa Fe Province, Argentine
1970-1971	Investigator	Cooperative Program, South of Corrientes Province
1972-	Lecturer	University of Buenos Aires
1972-	Investigator	IBP Program in Argentina, Colorado State University

Professional and Honorary Societies:

Argentine Society of Plant Physiology
Argentine Society of Plant Ecology

Major Interests:

Plant ecology, community dynamics, plant competition

Current Professional Activities:

Investigator in the IBP Program in Argentina for the evaluation and measurement of primary productivity of grasslands - 1972-1973.
Visiting scientist at NREL, Colorado State Univ., Fort Collins. July 1972-Sept. 1973.

Publications, Technical Reports:

- Ares, J. O. 1969. El modelo de nicho fundamental. Su aplicacion en la investigacion ecologica. *Ciencia e Investigacion* 26(7):290-296.
- Ares, J. O., A. Soriano y B. A. de Eilberg. 1970. Mecanismos de invasion del pasto puna (*Stipa brachychaeta* Godr.). I. Caracteristicas de los diseminulos de la maleza. *RIA* 7(6):277-287.
- Ares, J. O., L. Mones Cazon y A. Soriano. 1970. Mecanismos de invasion del pasto puna (*Stipa brachychaeta* Godr.). II. Germinación de la maleza en el microambiente edafico. *RIA* 7(6):289-309.
- Ares, J. O. y A. Soriano. 1970. Mecanismos de invasion del pasto puna (*Stipa brachychaeta* Godr.). III. El ajuste ecologico de la especie con el macroclima de la region central de la provincia de Santa Fe. Modelo preliminar del mecanismo de invasion. *RIA* 7(6):311-320.
- Ares, J. O. 1971. Algunos criterios para el analisis de la estructura de la comunidad vegetal. *Ciencia o Investigacion* 27(4):126-132.
- Ares, J. O. 1972. Equitability, competition and seasonal succession in a plant community. *Journal of Ecology*. Vol. VI.
- Ares, J. O. and R. J. C. Leon. 1972. An assessment of grazing effect on a plant community structure. *Journal of Ecology*. Vol. VI.
- Ares, J. O. y Britez, C. 1972. Efecto de la fertilizacion fosforada sobre algunas pasturas naturales del SE. de Corrientes (Argentina). 1. Congreso Soc. Argentina de Ecologia, mayo 1972.
- Ares, J. O., and Liñeiro, C. 1973. Mecanismos de invasion del pasto puna (*Stipa brachychaeta* Godr.). Efecto de distintas secuencias de entierre en el suelo sobre la germinacion de los granos cleistogenicos. 2. Congreso Soc. Argentina de Ecologia, abril 1973.
- Ares, J. O. Structural characteristics of some grassland plant communities associated with the availability of resources. (in preparation).
- Ares, J. O. A model and experimental data on changes in plant community structure during a growing season. (in preparation).

Name: Paul H. Baldwin

Born: 1913

Academic Training:

Degree	Year	Institution	Major
B.A.	1936	University of California	Zoology
M.S.	1939	University of Hawaii	Zoology
Ph.D.	1950	University of California	Zoology

Special Training:

Harvard Graduate School, 1939-1940, Zoology.

Professional Experience:

Date	Position	Institution
1941-1946	Assistant to Superintendent	Hawaii National Park
1946	Curator of Collections	Bernice P. Bishop Museum Honolulu, Hawaii
Summer 1954	Visiting Assistant Professor	University of Texas
1955-1962	Visiting Professor	University of Montana (Summers)
1950-1956	Assistant Professor, Zoology	Colorado State University
1956-1964	Associate Professor, Zoology	Colorado State University
1964	Professor, Zoology	Colorado State University

Professional and Honorary Societies:

Ecological Society of America	Sigma Xi
American Ornithologists Union	
Wilson Ornithological Society	
Western Bird-banding Society	
Cooper Ornithological Society	

Major Interests:

Population relations of woodpeckers in coniferous forests; feeding ecology of insectivorous birds and forest insects in coniferous forests; predator-prey and trophic ecology; pathways in trophic level interactions concerning birds, arthropods, and seeds at the Pawnee National Grasslands; recovery of avian communities on strip-mined lands of Western Colorado along with redevelopment of ecosystem resources; avian-arthropod interactions as predator-prey systems in boreal forest.

Current Professional Activities:

Teaching: Zoology, Vertebrate Biology, Ornithology

Research: Feeding ecology of herbivorous and insectivorous grassland birds

Publications, Technical Reports:

Baldwin, P. H. 1939. A study of temperature resistance in the Decapoda.
M.S. Thesis, Univ. Hawaii. 53 p.

- Baldwin, P. H. 1940. Environmental relationships of birds in the Kilauea Section, Hawaii National Park. Hawaii Nat. Park Natur. Hist. Bull. 6. 26 p. (Mimeo).
- Baldwin, P. H. 1941. Checklist of the birds of the Hawaii National Park, Kilauea-Mauna Loa Section, with remarks on their present status and a field key. Hawaii Nat. Park Natur. Hist. Bull. 7. 38 p. (Mimeo).
- Baldwin, P. H. and G. O. Fagerlund. 1943. The effect of cattle grazing on Koa reproduction in Hawaii National Park. Ecology 24:118-122.
- Baldwin, P. H. 1944. Birds of Hawaii National Park. Audubon Mag. 46:147-154.
- Baldwin, P. H. 1945. The Hawaiian Goose, its distribution and reduction in numbers. Condor 47:27-37.
- Baldwin, P. H. and H. I. Fisher. 1945. A recent trip to Midway Islands, Pacific Ocean. Elepaio 6:11-13.
- Baldwin, P. H. 1945. Fate of the Laysan Rail. Audubon Mag. 47:343-348.
- Baldwin, P. H. and H. I. Fisher. 1946. War and the birds of Midway. Paradise of the Pacific 48:4-9.
- Baldwin, P. H. and H. I. Fisher. 1946. War and the birds of Midway Atoll. Condor 48:3-15.
- Baldwin, P. H. 1946. Bulwer Petrel breeding on eastern Hawaiian Islands. Condor 48:3-15.
- Baldwin, P. H. and H. I. Fisher. 1947. Notes on the Red-billed Leiothrix in Hawaii. Pacific Sci. 1:45-51.
- Baldwin, P. H. 1947. Life history of the Laysan Rail. Condor 49:14-21.
- Baldwin, P. H. 1947. Foods of the Hawaiian Goose. Condor 49:108-120.
- Baldwin, P. H. 1948. Discovery of tapeworm parasites in three genera of Hawaiian honey suckers. Elepaio 9:1.
- Baldwin, P. H. 1949. A Review: "Some Hawaiian ecological notes." I. La Rivers, 1948. Wasmann Collector 7:85-110. In Elepaio 10:15-16.
- Baldwin, P. H. and D. B. Hubbard. 1949. The Hawaiian Dark-rumped Petrel reappears on Hawaii. Condor 51:231-232.
- Baldwin, P. H. 1950. Comparative ecology of certain Hawaiian Honey Creepers (Family *Drepaniidae*). Ph.D. Thesis, Univ. California 250 p.
- Baldwin, P. H. 1950. Occurrence and behavior of the Hawaiian bat. J. Mammal. 31:455-456.

- Baldwin, P. H. 1951. The role of foods in avian evolution as shown by the Hawaiian Honey Creepers. J. Colorado-Wyoming Acad. Sci. 4:82. (Abstr.)
- Baldwin, P. H. 1952. A Review: "The Hawaiian Honeycreepers (Aves, Drepaniidae)." D. Amadon, 1950. Amer. Mus. Natur. Hist. Bull. 95:153-262. In Auk 69:92-98.
- Baldwin, P. H., C. W. Schwartz, and E. R. Schwartz. 1952. Life history and economic status of the mongoose in Hawaii. J. Mammal. 33:335-356.
- Baldwin, P. H. 1952. Reproduction of the mongoose in Hawaii. J. Colorado-Wyoming Acad. Sci. 4:90-91. (Abstr.).
- Baldwin, P. H. and O. P. Pearson. 1953. Reproduction and age structure of a mongoose population in Hawaii. J. Mammal. 34:436-447.
- Baldwin P. H. 1953. Annual cycle, environment, and evolution in the Hawaiian Honeycreepers (Aves: Drepaniidae). Univ. California Zool. Pub. 52:285-398.
- Baldwin, P. H. and L. P. Richards. 1953. Recent records of some Hawaiian Honeycreepers. Condor 55:221-222.
- Baldwin, P. H. 1953. The chromosomes of the Red-wing and the Yellow-headed Blackbird (Family Icteridae). J. Colorado-Wyoming Acad. Sci. 4:60.
- Baldwin, P. H. and S. Makino. 1954. The chromosomes of the American blackbirds, *Agelaius phoeniceus* and *Xanthocephalus xanthocephalus* (Family Icteridae). Cytologia 19:217-224.
- Baldwin, P. H. and E. G. Reed. 1954. A chronology of nesting for the Hoary Redpoll (*Acanthis hornemanni*) at Umiat, Alaska in 1953. J. Colorado-Wyoming Acad. Sci. 4:62-63.
- Baldwin, P. H. and J. R. Stocker. 1954. A preliminary comparison of daily spermatogenic rhythm in passerine birds of arctic and temperate latitudes. J. Colorado-Wyoming Acad. Sci. 4:63-64.
- Baldwin, P. H. 1955. The breeding ecology and physiological rhythms of some arctic birds at Umiat, Alaska. Arctic Inst. North Amer., Proj. ONR-121. 112 p. (Mimeo).
- Baldwin, P. H. 1955. Book Review: An introduction to ornithology. G. J. Wallace, 1955. Macmillan Co., New York, 443 p. In Wilson Bull. 67:313-314.
- Baldwin, P. H. 1955. Chromosome elimination in birds. J. Colorado-Wyoming Acad. Sci. 4:63-64. (Abstr.).
- Baldwin, P. H. and E. B. Reed. 1955. Reproductive cycle in birds of the Arctic Plateau. J. Colorado Wyoming Acad. Sci. 4:64. (Abstr.).
- Baldwin, P. H. and E. B. Reed. 1955. Adaptations in the molt of Arctic birds. J. Colorado-Wyoming Acad. Sci. 4:64-65. (Abstr.).

- Baldwin, P. H. 1956. Breeding record of Brewer Sparrow in northwestern Montana. *Wilson Bull.* 68:251.
- Baldwin, P. H. 1960. Overwintering of woodpeckers in bark beetle-infested spruce-fir forests of Colorado. *Int. Ornithol. Congr., Proc.*, 12:71-84.
- Baldwin, P. H. and G. D. Amman. 1960. A comparison of methods for censusing woodpeckers in spruce-fir forests of Colorado. *Ecology* 41:699-706.
- Baldwin, P. H. 1961. Book Review: XII International Ornithological Congress, Helsinki, Proceedings. 1958, 6:5-12. G. Bergman, K. O. Donner and L. von Haartman [ed.], 1960. 2 Vols. 1:1-436; 2:437-822. *In* *Wilson Bull.* 73:302.
- Baldwin, P. H. 1961. Distribution, overlap, and hybridization of two species of redpolls in Alaska. *Ecol. Soc. Amer. Bull* 42:152. (Abstr.).
- Baldwin, P. H. 1961. Occurrence of woodpeckers at infestations of the Engelmann spruce beetle. *J. Colorado-Wyoming Acad. Sci.* 5:49-50. (Abstr.)
- Baldwin, P. H. 1962. Book Review: Morphological differentiation and adaptation in the Galapagos finches. R. I. Bowman, 1961. Univ. California Pub. 58, 302 p. *In* *Wilson Bull.* 74:295-297.
- Baldwin, P. H. 1962. Problems in the study of bird and bark beetle relationships. *Annu. Western Forest Insect Work Conf., Proc.*, 13:57.
- Baldwin, P. H. and W. F. Hunter. 1962. Nesting of the black swift in Montana. *Wilson Bull.* 74:409-416.
- Baldwin, P. H. and W. F. Hunter. 1963. Nesting and nest visitors of the Vaux's swift in Montana. *Aug* 80:81-85.
- Baldwin, P. H. 1963. Nesting specializations of the swifts of the Rocky Mountains. *J. Colorado-Wyoming Acad. Sci.* 5:39. (Abstr.)
- Baldwin, P. H. and N. K. Zacksowski. 1963. Breeding biology of the Vaux swift. *Condor* 65:400-406.
- Baldwin, P. H. and R. W. Schneider. 1963. Flight in relation to form of wing in the Lewis' woodpecker. *J. Colorado-Wyoming Acad. Sci.* 5:58-59. (Abstr.).
- Baldwin, P. H. and D. E. Oehlerts. 1964. The status of ornithological literature, 1964. *Stud. Biol. Lit. Commun.* 4. Biological Abstracts, Inc., Philadelphia. 53 p.
- Baldwin, P. H. and J. R. Koplin. 1964. The Boreal owl and its status in Colorado. *J. Colorado-Wyoming Acad. Sci.* 4:46-47.

- Baldwin, P. H. 1965. Woodpecker - bark beetle relationships. 1965 Combined Western and Cent. Forest Insect Work Conf., Proc. p. 79.
- Baldwin, P. H. 1966. Book Review: A survey of birds of Kauai, Hawaii. F. Richardson and J. Bowles, 1964. Bernice P. Bishop Mus. Bull. 227, Honolulu, Hawaii. 51 p. In Bird-Banding 37:144-145.
- Baldwin, P. H. and J. R. Koplin. 1966. The Boreal owl as a Pleistocene relict in Colorado. Condor 68:299-300.
- Baldwin, P. H. 1966. The consumption of adult Engelmann spruce beetles by insectivorous birds. J. Colorado-Wyoming Acad. Sci. 5:96. (Abstr.)
- Baldwin, P. H. 1968. Woodpecker feeding on Engelmann spruce beetles in wind-thrown trees. Rocky Mountain Forest and Range Exp. Sta., USDA. U.S. Forest Service Res. Note RM-105:1-4.
- Baldwin, P. H. 1968. *Acanthis hornemanni* exilipes (Coues) Hoary Redpoll, p. 400 to 407. In O. L. Austin, Jr. [ed.] Life histories of North American cardinals, grosbeaks, buntings, towhees, finches sparrows, and allies. U.S. Nat. Mus. Bull. 237.
- Baldwin, P. H. 1968. Vertebrate predation. Annu. Western Forest Insect Work Conf., Berkeley, California, Proc., 19:26-29.
- Baldwin, P. H. 1969. Predator-prey relationships of birds and spruce beetles. North Cent. Branch - Entomol. Soc. Amer., Proc., 23:90-99.
- Baldwin, P. H. 1969. The Hawaiian Hawk from 1938 to 1949. Elepaio 29:95-98.
- Baldwin, P. H. 1969. The 'Alala (*Corvus tropicus*) of western Hawaii Island. Elepaio 30:41-45.
- Baldwin, P. H., J. D. Butterfield, P. D. Creighton and R. Shook. 1969. Summer ecology of the lark bunting Pawnee Site. Grassland Biome - U.S. Int. Biol. Program. Tech. Rep. No. 29.
- Baldwin, P. H., W. C. Marquardt, D. J. Nash and T. A. Woolley. 1970. Manual for animal biology. Kendall/Hunt Pub. Co., Dubuque, Iowa. 151 p.
- Baldwin, P. H. and J. R. Koplin. 1970. Woodpecker predation on an endemic population of Engelmann spruce beetles. The Amer. Midland Natur. 83:510-515.
- *Baldwin, P. H. 1970. The feeding regime of granivorous birds in shortgrass prairie of Colorado. Int. Biol. Program, Working Group on Granivorous Birds - PT Section, 4:26-30, Warszawa. Abstr.
- Baldwin, P. H. and R. S. Shook. 1970. Woodpecker predation on bark beetles in Engelmann spruce logs as related to stand density. The Can. Entomol. 102:1345-1354.

- *Baldwin, P. H. 1970. Avian food studies at the Pawnee Site, p. 84-85. *In* R. T. Coupland and G. M. Van Dyne [eds.] Grassland Ecosystems: Reviews of Research. Range Sci. Ser. No. 7, Colorado State Univ.
- Baldwin, P. H. and W. F. Hunter. 1970. Say's Phoebe nesting in Western Montana. Murrelet, May-August, 51-2: 14-15.
- *Baldwin, P. H. 1971. The feeding regime of granivorous birds in shortgrass prairie of Colorado. Int. Biol. Program, Working Group on Granivorous Birds - PT Section, Proc. 30 p. (In press)
- *Baldwin, P. H. 1971. Diet of the Mountain Plover at the Pawnee National Grassland, 1970-1971. Technical Report No. 134. Grassland Biome, U.S. International Biological Program. Colo. State Univ., Fort Collins. 34 p.
- *Baldwin, P. H. 1971. Diet of the Killdeer at the Pawnee National Grassland and a comparison with the Mountain Plover, 1970-1971. Technical Report No. 135. Grassland Biome, U.S. International Biological Program. Colo. State Univ., Fort Collins. 22 p.
- *Baldwin, P. H., P. D. Creighton, and D. S. Kisiel. 1971. Diet of the Mourning Dove at the Pawnee National Grassland, 1970-1971. Technical Report No. 136. Grassland Biome, U.S. International Biological Program. Colo. State Univ., Fort Collins. 25 p.
- Baldwin, P. H. and W. F. Hunter. 1973. Nest of the Black Swift in Glacier National Park. Murrelet (In press).

Name: Clarence F. Becker

Born: 1920

Academic Training:

Degree	Year	Institution	Major
B.S.	1943	North Dakota State University	Agricultural Engr.
M.S.	1949	North Dakota State University	Agricultural Engr.
Ph.D.	1956	Michigan State University	Agricultural Engr.
	1944	Professional Certificate in Meterology, UCLA	

Professional Experience:

Date	Position	Institution
1949	Asst. Professor Agr. Engr.	University of Wyoming
1957	Associate Professor	University of Wyoming
1959	Professor	University of Wyoming
1964-1966	U.N. Consultant, Tunisia, Iran	
1966	Department Head	University of Wyoming
1968-1970	Chief of Wyoming Team	Kabul University, Afghanistan
1970-	Head Agr. Engr. Division	University of Wyoming

Major Interests:

Meteorology, statistics, farm mechanization.

Professional and Honorary Societies:

Registered Professional Engineer - Wyoming
Sigma Xi
American Society of Agricultural Engineers
American Society of Agronomy
American Society of Sugar Beet Technologists

Publications, Technical Reports:

Becker, C. F. 1957. Solar radiation availability of surface in the United States as affected by season, orientation, latitude, altitude and cloudiness. J. Solar Energy Sci. Engr. 1.

Becker, C. F. 1958. Determining available solar radiation. Air Cond. Heat. Vent. 54(6).

Becker, C. F. 1961. Availability of solar energy. Agr. Engr. 42:302-306.

Becker, C. F. 1963. The effect of relative humidity on the application of pesticides to agricultural crops. Inter. Symp. Humidity Moisture.

Becker, C. F. 1964. Temperature probabilities in Wyoming. Wyoming Agr. Exp. Sta. Bull. 415.

Becker, C. F. 1965. The effect of relative humidity on the application of pesticides to agricultural crops. Humidity Moisture 2:226-230.

Becker, C. F. 1965. Precipitation probabilities in Wyoming. Wyoming Agr. Exp. Sta. Bull. 416.

- *Nunn, J. R., R. D. Burman, L. D. Pochop, and C. F. Becker. 1971. Meteorological characteristics of heavily and lightly grazed natural grass rangeland. Bull. Am. Meteor. Soc., 52(4):312.
- *Nunn, J. R., R. D. Burman, J. D. Armijo, L. O. Pochop, and C. F. Becker. 1971. Meteorological characteristics of the shortgrass ecosystem. Wyoming Agr. Exp. Sta. Res. Jour. 48.
- Cornia, R. L., L. O. Pochop, and C. F. Becker. 1972. Selection of periods important to crop production relative to precipitation management. Bull. Am. Meteor. Soc. 53(7):716.
- *Nunn, J. R., G. Twitchell, R. D. Burman, and C. F. Becker. 1972. Meteorological instrumentation, data and data analysis for the Pawnee Site during 1971. U.S. IBP Grassland Biome Tech. Rep. No. 180. Colorado State Univ., Fort Collins. 20 p.
- Pochop, L. D., R. Cornia, C. F. Becker, and J. D. Alyea. 1973. Analysis of the effect of precipitation augmentation in the Great Plains area of Wyoming. Wyoming Agr. Exp. Sta. Res. Jour. 70.

Name: Lewis J. Bledsoe

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B.A.	1964	Univ. Tennessee	Mathematics
	1966	Univ. Michigan	Biophysics
M.S.	1968	Colorado State Univ.	Wildlife Biol., Statistics
Ph.D. Candidate		Colorado State Univ.	Systems Ecology

Professional Experience:

Date	Position	Institution
1961-1966	Mathematics Consultant	Oak Ridge Nat'l. Lab.
1961-1962	Programmer	Botany Dep., Univ. Tennessee
1964-1965	Programmer	Inst. Sci. & Tech., Univ. Michigan
1967-1971	Instructor	Colorado State University
1971-	Instructor/Researcher	University of Washington

Professional and Honorary Societies:

Association of Computing Machinery
Analogue Computer Education Users Group
Ecological Society of America

Major Interests:

Applications of Mathematics to Environmental Biology

Current Professional Activities:

Data Processing & Modeling Studies, Grassland Biome, IBP

Teaching: Systems Ecology

Research: Grassland Biome Modeling

Publications, Technical Reports:

Bledsoe, L. J. and J. S. Olson. 1967. COMSYSI: a stepwise compartmental simulation program. ORNL Tech. Mem. 2413.

Bledsoe, L. J. and G. M. Van Dyne. 1968. Simulation and Analytical computer programs for compartment analysis of ecological phenomena. ORNL Tech. Mem. 2414.

Bledsoe, L. J. 1968. Compartment Models and their use in the simulation of secondary succession. M.S. Thesis. Colorado State Univ. 112 p.

Bledsoe, L. J. and G. M. Van Dyne. 1969. A compartment model simulation of ecological succession, Chap. 8. In B. Patten [ed.] Ecological systems research. Academic Press, New York. (Manuscript submitted).

- Van Dyne, G. M., W. E. Frayer, and L. J. Bledsoe. 1969. Optimization techniques and problems in the natural resource sciences. *In* Soc. Ind. Appl. Math. Studies in Applied Mathematic: Symposium on Optimization.
- Bledsoe, L. J. and D. A. Jameson. 1969. Model structure for a grassland ecosystem, p. 410 to 435. *In* R. L. Dix and R. G. Beidleman [ed.] The grassland ecosystem: a preliminary synthesis. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 2. 437 p.
- Bledsoe, L. J. 1969. Simulation languages and large scale ecosystem models. Presented at the Conference on Applications of Continuous System Simulation Languages, San Francisco, June 30-July 1, 1969. Submitted to Simulation.
- Clymer, A. B. and L. J. Bledsoe. 1969. Hierarchy of models for the Jornada range ecosystem. Presented at Ford Foundation Workshop, Albuquerque, New Mexico, June 16-27, 1969.

Name: H. Derrick Blocker

Born: 1932

Academic Training:

Degree	Year	Institution	Major
B.S.	1954	Clemson University	Entomology
M.S.	1958	Clemson University	Entomology
Ph.D.	1965	No. Carolina State Univ.	Entomology

Special Training:

Summer Institute of Systematics III, Smithsonian Institution, Wash., D. C.
June 23 - July 11, 1969; sponsored by NSF and Society of Systematic Zoology

Professional Experience:

Date	Position	Institution
1954-1956	MSC Officer, U.S. Army	
1956-1958	Grad. Res. & Teaching Asst.	Clemson University
1958	Entomologist	So. Carolina Crop Pest Commission
1961-1964	Grad. Research Asst.	No. Carolina State University
1965-	Asst. Prof. Entomology	Kansas State University

Professional and Honorary Societies:

Sigma Xi	Kansas Central States Ento. Soc.
Gamma Sigma Delta	
Phi Sigma	
Entomological Society of America	
Society of Systematic Zoology	

Major Interests:

Taxonomy and ecology of leafhoppers, particularly those of grassland and prairie; evolution and ecology of insects in general; ecology of grassland insects.

Current Professional Activities:

Curator of Insects

Teaching: Taxonomy of Insects, External Morphology of Insects

Research: Taxonomy of Leafhoppers; Taxonomy and Ecology of Grassland Insects; IBP Comprehensive site (Osage), Research on Insects

Publications, Technical Reports:

Blocker, H. D. 1967. Athysanella attenuata and a closely related new species from Kansas (Homoptera: Cicadellidae). J. Kansas Entomol. Soc. 40:576-578.

- Blocker, H. D. 1967. A classification of the Western Hemisphere Balclutha (Homoptera:Cicadellidae). U. S. Nat. Mus., Proc. 122:1-55.
- Blocker, H. D. 1968. A new species of Balclutha from Brazil and notes on new distribution of some existing species (Homoptera:Cicadellidae). J. Kansas Entomol. Soc. 41:207-209.
- Blocker, H. D. 1969. Impact of insects as herbivores in grassland ecosystems, p. 290-299. Dix, R. L. and R. G. Beidleman [ed.] The grassland ecosystem: a preliminary synthesis. Range Science Series No. 2 p. 437.
- Blocker, H. D. 1970. Book Review: "Principles of Systematic Zoology." Ernst Mayr. J. Kansas Entomol. Soc. 43:112-113.
- Blocker, H. D. A taxonomic study of the Genus Stragania in America, north of Mexico. (Homoptera:Cicadellidae:lassinae). Submitted to Ann. Entomol. Soc. Amer.
- Blocker, H. D., T. L. Harvey, and J. L. Launchbaugh. 1972. Grassland leafhoppers I. Leafhopper populations of upland seeded pastures at Hays, Kansas. Ann. Entomol. Soc. America. 65:166-172.
- Blocker, H. D. 1971. New distribution of Balclutha in the Bahama Islands, Newfoundland, and Panama. 4 p. (In review)
- Reed, R. and H. D. Blocker. 1972. Insect studies at the Osage Comprehensive Site, 1971 season. U.S. IBP Grassland Biome Tech. Rep. No. 194. Colorado State Univ., Fort Collins. 74 p.
- Mason, C. E. and H. D. Blocker. 1973. A stabilized drop trap for unit area sampling of insects in short vegetation. Environ. Entomol. (in press)
- Blocker, H. D. 1973. The impact of invertebrates as herbivores on arid and semiarid rangeland in the United States. Proceedings 2nd Seminar-Workshop, US-Australia Panel on Range Science. (submitted)
- Blocker, H. D. 1973. Rangeland invertebrate studies: a review and a look at the future. Proceedings 3rd Midwest Prairie Conference. (submitted)

Name: Unab Bokhari

Born: 1936

Academic Training:

Degree	Year	Institution	Major
B.S.	1960	Peshawar University	Agronomy
M.S.	1964	Colorado State University	Crop physiology
Ph.D.	1969	University of California	Plant physiology

Professional Experience:

Date	Position	Institution
1960-62	Farm Manager	Peshawar University, W. Pakistan
1964-66	Lecturer	Peshawar University, W. Pakistan
1969-70	Postdoctoral Research Assistant	University of California, Riverside
1970-	Principal Research Technician	US/IBP - Colorado State University

Professional and Honorary Societies:

American Society of Agronomy
Sigma Xi

Major Interests:

Areas related to plant physiology -- nucleic acids, carbohydrates, nutrients.

Publications, Technical Reports:

- Bokhari, U. 1971. Interactions of CCC, GA and IAA on RNA and protein of wheat coleoptiles. (In press)
- Bokhari, U. 1971. Effect of CCC, GA and IAA on incorporation of P³² into RNA and C¹⁴ aminoacids into protein of wheat coleoptiles. (In press)
- Bokhari, U. G., S. V. B. Youngner. 1971. Effects of CCC on tillering and flowering of unculm barley. Crop Sci. 11:711-713.
- Bokhari, U. G., S. V. B. Youngner. 1971. Effects of CCC on growth of wheat plants and their untreated progeny. Agr. J. 63:809-810.
- Bokhari, U. G. and M. I. Dyer. 1973. The effects of environmental stresses on growth of blue grama in environmental control growth chambers. (In preparation).

Name: Edward George Brittain

Born: 1925

Academic Training:

Degree	Year	Institution	Major
B.S.	1948	Melbourne University	Botany
Ph.D.	1956	Melbourne University	Plant Physiology

Special Training:

Ph.D. Thesis Title - "Oxygen Effects on Photosynthesis"

Professional Experience:

Date	Position	Institution
1951-1956	Research Assistant, later Senior Demonstrator	Melbourne University
1957-1959	Leverhulme Post-doctoral Research Fellow	Oxford University
1959- 1972	Senior Lecturer	Australian National University
1972	Visitor	Grasslands Biome, U.S. IBP
1972	Visitor	Tundra Biome, U.S. IBP
1972	Visitor	Desert Biome, U.S. IBP
1972	Visitor	Forestry Department, Yale University

Professional and Honorary Societies:

Australian and New Zealand Association for the Advancement of Science
Societas Physiologiae Plantarum Scandinavica

Major Interests:

Photosynthesis of Higher Plants; Transpiration of Higher Plants;
Dynamic simulation of plant physiological and ecological processes.

Current Professional Activities:

Teaching of plant physiology at undergraduate level.
Research into photosynthesis and transpiration of higher plants.
Computer modelling in physiological and ecological contexts.

Publications, Technical Reports:

Turner, J. S., M. Todd, and E. G. Brittain. 1956. The inhibition of
photosynthesis by oxygen. 1. Comparative physiology of the effect.
Aus. J. Biol. Sci. 9:494-510.

- Turner, J. S., and E. G. Brittain. 1962. Oxygen as a factor in photosynthesis. *Biol. Rev. Camb. Phil. Soc.* 7:130-170.
- Brittain, E. G. and S. Nagarajah. 1971. Iwanoff effect in leaves of cotton (*Gossypium hirsutum*). *Physiol. Plant.* 25:441-447.
- Chilvers, G. A., and E. G. Brittain. 1972. Plant competition mediated by host specific parasites. *Aus. J. Biol. Sci.* 25:749-56.
- Brittain, E. G. and R. J. Cameron. 1973. Photosynthesis of leaves of some Eucalyptus species. *N. Z. J. Bot.* 11:(In press).
- Wood, G. B. and E. G. Brittain. 1973. Photosynthesis, respiration and transpiration of radiata pine. *N. Z. J. For. Sci.* (In press).
- Anway, J., E. G. Brittain, H. W. Hunt, G. S. Innis, W. Parton, C. F. Rodell, and R. Sauer. ELM Version 1. Technical report of the Natural Resource Ecology Laboratory, Colorado State University and U.S. IBP.

Name: Donald J. Burdick

Born:

Academic Training:

Degree	Year	Institution	Major
B.A.	1953	San Jose State College	Biology
Ph.D.	1958	University of Calif., Berkeley	Entomology

Special Training:

NSF Faculty Fellow - University of Illinois - for Ins. Physiology and taxonomy of chalcidogastra.

NSF course on animal behavior - Penn. State University

Professional Experience:

Date	Position	Institution
1958-1960	Junior Vector Control Specialist	Department of Health, State California
1960-present	Professor of Biology	California State University, Fresno

Professional and Honorary Societies:

Society Systematic Zoology	Sigma Xi
Evolution	AAAS
Canadian Entomology Society	AIBS
American Entomology Society	San Joaquin Entomological Society
Kansas Entomology Society	
Pacific Coast Entomology Society	

Major Interests:

Taxonomy of sawflies and cynipids; Biology of insects.

Current Professional Activities:

Teaching
IBP - Grassland Biome Study

Publications, Technical Reports:

Burdick, D. J. 1958. A new species of *Idiogramma* Foerster with notes on two species. *Pan-Pacific Ent. Soc.* 34(3):159-160.

Burdick, D. J. 1959. Notes on the biology of *Hesperapis regularis* (Cresson). *J. Kansas Ent. Soc.* 32(2):83-87.

Burdick, D. J. 1959. Notes on the taxonomy of the fossil xyelidae. *J. Kansas Ent. Soc.* 32(3):120-122.

- Burdick, D. J. 1959. Biology of *Methocha californica* Westwood. Wasmann Jr. Biology. 17(1):75-88.
- Burdick, D. J. and J. A. Powell 1960. Observations on the nesting behavior of *Astata occidentalis* Cressan in central California. Pan-Pacific Ent. Soc. 36(1):25-30.
- Burdick, D. J. and J. A. Powell 1960. Studies on the early stages of two California moths which feed in the staminate cones of digger pine.
- Burdick, D. J. 1961. A taxonomic and biological study of the genus *Xyela* (Dalman) of North America. Univ. of Calif. Pub. in Ent. 17(3):74 pp.
- Burdick, D. J. 1962. Age structure of an overwintering population of *Culex tarsalis* coq., Entomological Society of America.

Name: Robert D. Burman

Born: 1925

Academic Training:

Degree	Year	Institution	Major
B.S.	1950	University of Wyoming	General Engineering
M.S.	1961	University of Wyoming	Civil Engineering
Ph.D.	1969	Cornell University	Agricultural Engineering

Professional Experience:

Date	Position	Institution
1950-1951	Surveyor	Union Pacific Railroad
1952-1954	Junior Highway Engineer	Washington State Dep. of Highways
1963-1964	NSF Science Faculty Fellow	Cornell University
1956-Present	Associate Professor	Univ. Wyoming
July 1968	Acting Head, Agricultural Engineering	Univ. Wyoming

Professional and Honorary Societies:

American Society of Agricultural Engineers
Registered Professional Engineer and Land Surveyor, Wyoming
Sigma Xi

Major Interests: Micrometeorology, Hydrology, Irrigation

Current Professional Activities:

Teaching: Conservation Engineering, Open Channel Hydraulics, Flood Routing

Research: Meteorology, Hydrologic modelling Pawnee study, Irrigation
water supply and operation

Publications. Technical Reports:

Hough, H. W., R. D. Burman, and M. A. McNamee. 1957. Sugar beets and
water. Wyoming Roundup.

Burman, R. D. 1958. Reservoirs for range stockwater development. Wyoming
Agr. Exp. Sta. Circ. 67.

Burman, R. D. 1957. The 1957 Wyoming underground water law. Agr. Ext.
Series Leaflet 39.

Burman, R. D. 1958. Wyoming's new underground water law helps fashion key
to underground water use. Wyoming Stockman Farmer, (December).

- Burman, R. D. 1959. Engineer will play big part in agriculture of tomorrow. Wyoming Stockman Farmer.
- Burman, R. D. and D. Bohmont. 1961. Evaluating the growth rate of great northern beans as influenced by soil moisture level under greenhouse conditions. Agron. J. 53:354-355.
- Burman, R. D. and J. R. Partridge. 1962. Evapotranspiration of water by small grains, corn and beans in northwestern Wyoming. Wyoming Agr. Exp. Sta. Mimeo. Circ. 174.
- Burman, R. D., L. I. Painter, and J. R. Partridge. 1962. Irrigation and nitrogen fertilization of field corn in northwest Wyoming. Wyoming Agr. Exp. Sta. Bull. 389.
- Burman, R. D. and L. I. Painter. 1964. Influence of soil moisture on leaf color and foliage volume of beans grown under greenhouse conditions. Agron. J. 56:420-423.
- Ferguson, J. E., C. F. Becker, and R. D. Burman. 1966. The effect of summerfallow-tillage methods on the vertical energy balance. Amer. Soc. Agr. Eng. Paper 66-230. (Presented at Amer. Soc. Agr. Eng., Proc., Amherst, Mass., June 28, 1966).
- Burman, R. D. and T. L. Loudon. 1967. Evapotranspiration and irrigation efficiency studies, Farson Pilot Farm. Wyoming Agr. Exp. Sta. Res. J. 10.
- Burman, R. D. and T. L. Loudon. 1967. Evapotranspiration and microclimate of irrigated pastures and alfalfa under high altitude conditions. Amer. Soc. Agr. Eng., Trans. 11:123-125, 128.
- Burman, R. D. and R. D. Black. 1968. The inference of intake and hydraulic roughness parameters from plot runoff using kinematic wave theory. Amer. Soc. Agr. Eng., Trans. December 10-13, 1968, Chicago, Illinois.

Name: Martha Christensen

Born: 1932

Academic Training:

Degree	Year	Institution	Major
B.S.	1953	University of Nebraska	Botany - Soils
M.S.	1956	University of Wisconsin	Botany
Ph.D.	1960	University of Wisconsin	Botany (mycology, ecology)

Professional Experience:

Date	Position	Institution
1953-1954	High School Biology Teacher	Ralston, Nebraska
1954-1960	Research and Teaching Assistant	Univ. Wisconsin
1960-1963	Post-doctoral Project Associate	Univ. Wisconsin
1963-1968	Assistant Professor	Univ. Wyoming
1968-	Associate Professor	Univ. Wyoming

Professional and Honorary Societies:

Phi Beta Kappa
Sigma Xi
Phi Sigma
Mycological Society of America
The Ecological Society of America

Major Interests: Taxonomy and ecology of soil microfungi

Current Professional Activities:

Teaching: Mycology, Morphology of Cryptogams, General Botany

Research: The soil microfungi of a short-grass prairie;
Wyoming soil microfungi

Publications, Technical Reports:

- Christensen, M. and M. P. Backus. 1961. New or noteworthy penicillia from Wisconsin soils. *Mycologia* 53:451-463.
- Christensen, M. and M. P. Backus. 1962. A new *Penicillium* from coniferous forest soils. *Mycologia* 54:573-577.
- Christensen, M., W. F. Whittingham, and R. O. Novak. 1962. The soil microfungi of wet-mesic forests in southern Wisconsin. *Mycologia* 54:374-388.
- Christensen, M. and D. I. Fennell. 1964. The rediscovery of *Aspergillus cervinus*. *Mycologia* 56:350-353.

- Christensen, M., D. I. Fennell, and M. P. Backus. 1964. *Aspergillus kanagawaensis* and related species in Wisconsin forest soils. *Mycologia* 56:354-362.
- Christensen, M. and M. P. Backus. 1964. Two varieties of *Monocillium humicola* in Wisconsin forest soils. *Mycologia* 56:498-504.
- Christensen, M. and W. F. Whittingham. 1965. The soil microfungi of open bogs and conifer swamps in Wisconsin. *Mycologia* 57:882-896.
- Christensen, M. and Jack S. States. 1966. *Aspergillus leporis*, a new species related to *A. flavus*. *Mycologia* 58:738-742.
- Christensen, M. 1969. Soil microfungi of dry to mesic conifer-hardwood forests in northern Wisconsin. *Ecology* 50:9-27.
- *Christensen, M. and A. M. Scarborough. 1969. Soil microfungi investigations, Pawnee Site. US IBP Grassland Biome, Fort Collins, Colorado. Tech. Rep. No. 23. 18 p.
- Davidson, D. E. and M. Christensen. 1971. *Emericellopsis stolckiae* sp. nov. from saline soils in Wyoming. *British Mycol. Soc., Trans.* 57:385-391.
- Hitchcock, J. D. and M. Christensen. 1972. Occurrence of chalk brood (*Ascosphaera apis*) in honey bees in the United States. *Mycologia* 64: 1193-1198.
- Hitchcock, J. D. and M. Christensen. 1972. Chalk brood disease of honey bees in the United States. *Amer. Bee J.* 112:248-249, 254.

Name: Francis E. Clark

Born: 1910

Academic Training:

Degree	Year	Institution	Major
B.A.	1932	University of Colorado	Biology
B.D.E.	1933	University of Colorado	Education
M.S.	1933	University of Colorado	Microbiology
Ph.D.	1936	University of Colorado	Bacteriology & Public Health

Professional Experience:

Date	Position	Institution
1936-1970	Jr. Microbiol. to Chief Microbiol.	Agr. Res. Service, USDA
1937-1941	Collaborator	Kansas State University
1942	Lecturer	So. Methodist University
1943-1946	Major	U. S. Army
1946-1954	Professor	Iowa State University
1962-1963	Fulbright Scholar	New Zealand & Australia
1957-	Faculty Affiliate	Colorado State University
1971-1972	Consultant, UNDP/Bulgaria	FAO/Rome
1971-	Consultant in Soil Microbiology	FAO/United Nations

Professional and Honorary Societies:

Soil Science Society of America	Societe de Microbiologie de Nancy, France
International Society of Soil Science	Phi Beta Kappa
American Society Agronomy	Kappa Delta Phi
Geochemical Society	Sigma Xi
Washington Academy of Science	

Major Interests:

Microbiology, Ecology

Current Professional Activities:

Regional Editor, J. Biol. & Biochem.; Associate Editor, Geoderma--Int. J. Soil Science
Assistant Editor, Ecology

Publications, Technical Reports:

- Clark, F. E. 1933. The efficacy of bone marrow medium in producing exotoxins from *Staphylococcus aureus*. Univ. Colorado Studies 21:17.
- Clark, F. A. 1936. A study of *Bacillus bifermentans* and *Bacillus centrosporogenes* with comparative notes on certain other closely related species of anaerobic bacteria. Univ. Colorado Studies 24:15-16.
- Clark, F. E. and Hall, I. C. A comparative study of *Bacillus bifermentans* and *Bacillus centrosporogenes*. J. Bacteriol. 33:23-24.

- Clark, F. E. 1937. The relation of *Bacillus siamensis* and similar pathogenic sporeforming bacteria to *Bacillus cereus*. J. Bacteriol. 33:335-343.
- Smith, N. R. and F. E. Clark. 1937. A proposed grouping of the mesophilic aerobic sporeforming bacilli. SSSA Proc. 2:255.
- Clark, F. E. and N. R. Smith. 1938. Carbohydrate fermentation responses of the aerobic sporeforming bacteria. J. Bacteriol. 35:9-10.
- Smith, N. R. and F. E. Clark. 1938. Motile cobnies of *Bacillus alvei* and other bacteria. J. Bacteriol. 35:59-60.
- Thom, C., F. E. Clark, M. L. Fierke, and H. Fellows. 1938. Variations in the microflora of wheat roots. J. Bacteriol. 36:322.
- Clark, F. E. and N. R. Smith. 1939. Cultural requirements for the production of black pigments by bacilli. J. Bacteriol. 37:277-284.
- Clark, F. E. 1939. Nonmotile variants of *Bacillus alvei*. J. Bacteriol. 38:491-497.
- Clark, F. E. 1939. Effects of soil amendments upon the bacterial populations associated with roots of wheat. Kansas Acad. Sci. Trans. 42:91-96.
- Clark, F. E. and C. Thom. 1939. Effects of organic amendments upon the microflora of the rhizosphere of cotton and wheat. 3rd Comm. Int. Soc. Soil Sci. A:94-100.
- Clark, F. E. 1940. Notes on types of bacteria associated with plant roots. Kansas Acad. Sci. Trans. 43:75-84.
- Mitchell, R. B., Hooton, D. R. and Clark, F. E. 1941. Soil bacteriological studies on the control of the *Phymatotrichum* root rot of cotton. J. Agr. Res. 63:535-547.
- McCalla, T. M. and F. E. Clark. 1941. Dry adsorption by bacteria at varying H-ion concentrations. Stain Tech. 16:95-100.
- Stumbo, C. R., P. L. Gainey, and F. E. Clark. 1942. Microbiological and nutritional factors in the take-all disease of wheat. J. Agr. Res. 64:653-655.
- Mitchell, R. B. and F. E. Clark. 1942. Factors affecting the activity of Pseudomonas-Phytomonas fluorescent bacteria in soil. J. Bacteriol. 44:141.
- Clark, F. E. and R. B. Mitchell. 1942. Cell inclusions of globiforme and related types of microorganisms. J. Bacteriol. 44:529-532.
- Clark, F. E. and R. B. Mitchell. 1942. Antibiosis in the elimination of of *Phymatotrichum omnivorum* sclerotia from soil. J. Bacteriol. 44:141.
- Clark, F. E. 1942. Experiements toward the control of the take-all disease of wheat and the *Phymatotrichum* root rot of cotton. USDA Tech. Bull. 835.

- Clark, F. E. and R. B. Mitchell. 1946. Root-surface microfloras and carbohydrate levels. J. Agr. Res. 72:153-154.
- Smith, N. R., R. E. Gordon, and F. E. Clark. 1946. Aerobic mesophilic sporeforming bacteria. USDA Misc. Pub. 559.
- Clark, F. E., R. J. Hervey, and L. M. Blank. 1947. Occurrence of cotton fiber contaminated by *Aerobacter cloacae*. USDA Tech. Bull. 935.
- Clark, F. E. 1948. Azotobacter inoculation of crops. III. Recovery of azotobacter from the rhizosphere. Soil Sci. 65:193-202.
- Bhaumik, H. D. and F. E. Clark. 1948. Soil moisture tension and microbiological activity. Soil Sci. Soc. Amer. Proc. 12:234-238.
- Clark, F. E. 1948. Rhizosphere microflora as affected by soil moisture changes. Soil Sci. Soc. Amer. Proc. 12:239-242.
- Thompson, L. M., C.A. Black, and F. E. Clark. 1949. Accumulation and mineralization of microbial organic phosphorus in soil materials. Soil Sci. Soc. Amer. Proc. 13:242-245.
- Goring, C. A. I. and F. E. Clark. 1949. Influence of crop growth on mineralization of nitrogen in the soil. Soil Sci. Soc. Amer. Proc. 13:261-266.
- Clark, F. E. 1949. Soil microorganisms and plant roots. Adv. in Agron. 1:241-288.
- Clark, F. E. and D. H. Smith. 1950. Occurrence of aerobic, mesophilic spore-forming bacteria on plant roots. Soil Sci. Soc. Amer. Proc. 14:199-202.
- Bartholomew, W. V. and F. E. Clark. 1950. Nitrogen transformations in soil in relation to the rhizosphere microflora. Trans. 4th Int. Cong. Soil Sci., Amsterdam 2:112-113.
- Clark, F. E. 1950. The use of ethylene oxide for soil sterilization. Trans. 4th Int. Cong. Soil Sci., Amsterdam 1:204-205.
- Clark, F. E. 1950. Changes induced in soil by ethylene oxide sterilization. Soil Sci. 70:345-349.
- Clark, F. E. 1951. Bacteria in the Soil. Experientia 7:78-80.
- Smith, D. H. and F. E. Clark. 1951. Anion-exchange chromatography of inositol phosphates from soil. Soil Sci. 72:353-360.
- Clark, F. E. and C. A. I. Goring. 1951. Growth of bacteria in the presence of radioactive phosphorus. J. Bacteriol. 62:352-354.
- Clark, F. E. 1951. Generic classification of certain cellulolytic bacteria. Soil Sci. Soc. Amer. Proc. 15:180-182.
- Clark, F. E. and P. H. Carr. 1951. Motility and flagellation of the soil corynebacteria. J. Bacteriol. 62:1-6.

- Goring, C. A. I. and F. E. Clark. 1952. Radioactive phosphorus and the growth and metabolic activities of soil microorganisms. *Soil Sci. Soc. Amer. Proc.* 16:7-9.
- Smith, D. H. and F. E. Clark. 1952. Chromatographic separations of organic phosphorus compounds. *Soil Sci. Soc. Amer. Proc.* 16:170-172.
- Clark, F. E. 1952. The generic classification of the soil corynebacteria. *Int. Bull. Bact. Nomen. & Taxon.* 2:45-56.
- Jansson, S. L. and F. E. Clark. 1952. Losses of nitrogen during decomposition of plant material in the presence of inorganic nitrogen. *Soil Sci. Soc. Amer. Proc.* 16:330-334.
- Smith, N. R., R. E. Gordon, and F. E. Clark. 1952. The aerobic mesophilic spore-forming bacteria. *Agr. Monogr. No. 16, USDA.* 148 p.
- Clark, F. E. 1953. Criteria suitable for species differentiation in *Cellulomonas*, and a revision of the genus. *Int. Bull. Bact. Nomen. & Taxon.* 3:179-199.
- Adams, A. P., W. V. Bartholomew, and F. E. Clark. 1954. Measurement of nucleic acid components in soil. *Soil Sci. Soc. Amer. Proc.* 18:40-46.
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- *Clark, F. E. 1973. Soil microorganisms in rangeland. Range Science Review, Vol. 1, No. 8, Audio-Cassette Series. Colorado State Univ., Fort Collins.

Name: C. Vernon Cole

Born: 1922

Academic Training:

Degree	Year	Institution	Major
B.S.	1947	University of Massachusetts	Chemistry
M.S.	1948	University of Massachusetts	Agronomy
Ph.D.	1950	University of Wisconsin	Soils

Special Training:

Post-Doctorate Research Training at U. S. Plant Soil and Nutrition Lab., and Cornell University, Ithaca, N. Y. 1957-1958.

Professional Experience:

Date	Position	Institution
1950-	Research Soil Scientist	Agricultural Research Service

Professional and Honorary Societies:

Agronomy Society of America
Soil Science Society
American Society of Plant Physiology
Fellow AAAS
Sigma Xi

Major Interests:

The effect of solid phase phosphorus compounds, calcium activity and PH on the concentration and activity of phosphorus in the soil solution, mineral nutrition of plants - factors regulating the rates of uptake and translocation of nutrients.

Publications, Technical Reports:

- Swenson, R. M., C. V. Cole, and D. H. Sieling. 1949. Fixation of phosphate by iron and aluminum and replacement by organic and inorganic ions. Soil Sci. 67:3-22.
- Cole, C. V. and M. L. Jackson. 1950. Colloidal dihydroxy dihydrogen phosphates of aluminum and iron with crystalline character established by electron and X-ray diffraction. Phys. Colloid Chem. 54:128-142.
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- Cole, C. V., S. R. Olsen, and C. O. Scott. 1953. The nature of phosphate sorption by calcium carbonate. Soil Sci. Soc. Amer., Proc. 17:352-356.

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- Cole, C. V. and S. R. Olsen. 1959. Phosphorus solubility in calcareous soils. I. Dicalcium phosphate activities in equilibrium solutions. Soil Sci. Soc. Amer., Proc., 23:116-118.
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- Cole, C. V. and C. S. Andrew. 1962. Kinetic analysis of phosphorus uptake by corn (*Zea Mays*) and soybean (*Glycine Max*). Agron. Abstr. p. 80.
- Cole, C. V., D. L. Grune, L. K. Porter, and S. R. Olsen. 1963. The effects of nitrogen on short term phosphorus absorption and translocation in corn (*Zea Mays*). Soil Sci. Soc. Amer., Proc., 27:671-674.
- Cole, C. V. and C. W. Ross. 1966. Extraction, separation and quantitative estimation of soluble nucleotides and sugar phosphorus in plant tissues. Anal. Biochem. 17:526-539.
- Bell, M. C. and C. V. Cole. 1967. Vulnerability of food crop and live-stock production to fallout radiation. UT-AEC Agr. Res. Spec. Pub.
- Ross, C. and C. V. Cole. 1968. Metabolism of cytidine and uridine in bean leaves. Plant Physiol. 43:1227-1231.
- Cole, C. V. and F. Watanabe. 1969. Sulfate uptake and reduction in corn as affected by nitrogen status. Agron. Abstr. p. 34.
- Wood, D. R., J. J. Waide and C. V. Cole. 1969. Breeding for improved methionine content of bean seed protein. Agron. Abstr. p. 22.
- Bledsoe, Carolyn, C. V. Cole and C. Ross. 1969. Oligomycin inhibition of phosphate uptake and ATP labeling in excised maize roots. Plant Physiol. 44:1040-1044.
- Green, J. L., C. V. Cole and W. D. Holley. 1971. Ionic balance and growth of carnations. Soil Sci. 3:138-145.

- Watanabe, F. S., S. R. Olsen and C. V. Cole. 1971. Ionic balance and growth of five plant species in four soils. Agron. J. 63:23-28.
- Cole, C. V., C. Ross and S. R. Olsen. 1971. Phosphate accumulation and esterification by excised maize root sections. Colorado Agr. Exp. Sta. Sci. J. Series 1287.
- Onajobi, F. D. and C. V. Cole. 1971. Oligomycin effects on sulfate uptake by excised corn roots. (Ms. in review)

Name: George W. Cole

Born: 1928

Academic Training:

Degree	Year	Institution	Major
B.E.E.	1953	Rensselaer Polytechnic Institute	Elec. Eng.
Ph.D.	(In progress)		

Professional Experience:

Date	Position	Institution
1953-1969	Development Engineer	IBM Corporation
1969-1972	Teaching Asst./Research Asst.	Cornell University
1972-	Systems Analyst	Natural Resource Ecology Laboratory

Professional and Honorary Societies:

Eta Kappa Nu, E.E. Honorary Society, 1953
Phi Kappa Phi, Honorary Society, 1973

Name: David C. Coleman

Born: 1938

Academic Training:

Degree	Year	Institution	Major
B.A.	1960	Reed College	Biology
M.A.	1963	University of Oregon	Biology
Ph.D.	1964	University of Oregon	Biology

Special Training:

Post-doctoral fellow, University of Wales, 1964-65. (With A. Macfadyen).
Post-doctoral short-course in Acarology, Ohio State University, June-July 1968.

Professional Experience:

Date	Position	Institution
1960-62	Research Assistant	University of Oregon
1962-64	Teaching Fellow	University of Oregon
1964-65	Research Demonstrator	University College of Swansea, United Kingdom
1965-67	Research Associate	Savannah River Ecology Lab
1967-71	Assistant Professor, Zoology	University of Georgia
1972-	Research Associate Professor, Agronomy	Colorado State University

Professional and Honorary Societies:

American Association for the Advancement of Science
American Society of Microbiologists
British Ecological Society
Ecological Society of America
International Society of Soil Science
Society of Sigma Xi

Major Interests:

Kinetics of decomposition and nutrient cycling in terrestrial ecosystems,
principally grassland and deciduous forest.
Functional roles of roots in the production-decomposition interface.

Current Professional Activities:

Decomposer integrator, US/IBP Grassland Biome.
Research affiliate faculty member, Agronomy Department, Colorado State
University.

Publications, Technical Reports:

- Coleman, David C., and Amyan Macfadyen. 1966. The recolonization of gamma-irradiated soil by small arthropods. *Oikos* 17:62-70.
- Coleman, D. C. 1966. The laboratory population ecology of *Kerona pediculus* (O.F.M.) epizoic on hydra spp. *Ecology* 47:705-711.
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- Coleman, D. C. 1970. Food webs of small arthropods of a broomsedge field studies with radio-isotope-labelled fungi. In Phillipson, J. [ed.] *Proc. of Symposium, "Methods of Study in Soil Ecology," IBP-UNESCO, Paris.* 203-207 pp.
- Wiegert, R. G., D. C. Coleman and E. P. Odum. 1970. Energetics of the litter-soil subsystem. In Phillipson, J. [ed.] *Proc. of Symposium, "Methods of Study in Soil Ecology," IBP-UNESCO, Paris.* 93-98 pp.
- Clark, Bruce W. and David C. Coleman. 1970. A comparative study of the effects of acute and chronic gamma irradiation on total soil respiration. *Pedobiologia* 10:199-206.
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- Wiegert, Richard G. and David C. Coleman. 1970. Ecological significance of low oxygen consumption and high fat accumulation by *Nasutitermes costalis* (Isoptera:Termitidae). *BioScience* 20:663-665.
- Kangas, Michael J. and David C. Coleman. 1970. Comparison of five techniques for the estimation of numbers and activity of bacteria in soil. *Bull. Ga. Acad. Sci.* 28:143-148.
- Coleman, David C. 1970. Nematodes in the litter and soil of El Verde rain forest. Chapter E-7. In Odum, H. T., and R. F. Pigeon, [ed.] *A Tropical Rain Forest: A study of irradiation and ecology at El Verde, Puerto Rico.* p. E-103--E-104. USAEC TID-24270.
- Coleman, David C. 1971. Numbers and biomass of soil nematodes of two South Carolina old fields. *Am. Midl. Nat.* 85:262-265.
- Lollar, A. Q., D. C. Coleman, and C. E. Boyd. 1971. Carnivorous pathway of phosphorus uptake by *Utricularia inflata*. *Arch. für Hydrobiol.* 69:410-414.

- *Crapo, N. L., and D. C. Coleman. 1972. Root distribution and respiration in a Carolina old field. *Oikos* 23:137-139.
- *Clark, F. E. and D. C. Coleman. 1972. Secondary productivity belowground in Pawnee Grassland, 1971. U. S. IBP Grassland Biome Tech. Rep. No. 169. Colorado State Univ., Fort Collins. 23 p.
- *Coleman, D. C. 1973. Comparative investigations in the U. S. IBP Grassland Biome: Decomposition Section. U. S. IBP Grassland Biome Tech. Rep. No. 210. Colorado State Univ., Fort Collins. 23 p.
- *Coleman, D. C., J. E. Lloyd, R. J. Lavigne, and A. Breymeyer. 1973. Feeding activities of soil macroarthropods at the Pawnee Site, 1971. U. S. IBP Grassland Biome Tech. Rep. No. 215. Colorado State Univ., Fort Collins. 11 p.
- *Singh, J. S. and D. C. Coleman. 1973. A technique for evaluating functional root biomass in grassland ecosystems. U. S. IBP Grassland Biome Preprint No. 59. Colorado State Univ., Fort Collins. 12 p. (Submitted to *Canad. J. Bot.*)
- Coleman, David C., and G. T. Cowley. Structure and function of a hardwood forest floor community after chronic irradiation. I: mesofauna and soil respiration. 3rd National Symposium on Radioecology. Oak Ridge. (In press)
- Cowley, G. T., James Martin, and David C. Coleman. Structure and function of a hardwood forest floor community after chronic irradiation. II: litter and soil micro-fungi. 3rd National Symposium on Radioecology. Oak Ridge. (In press)
- *Coleman, David C. Soil Carbon balance in a successional grassland. *Oikos*. (In press)
- *Coleman, David C. Compartmental analysis of "total soil respiration." *Oikos*. (In press)

Name: Don D. Collins

Born: 1935

Academic Training:

Degree	Year	Institution	Major
B.S.	1961	Montana State Univ.	Range
Ph.D.	1965	Montana State Univ.	Genetics

Special Training:

NSF Biology Institute Summer 1965

Professional Experience:

Date	Position	Institution
1965-1969	Assistant Professor	Montana State Univ.
1969-	Associate Professor	Montana State Univ.

Professional and Honorary Societies:

Phi Kappa Phi	Botanical Society
Phi Sigma	AIBS
Sigma Xi	Society of Range Management
Ecological Society	

Major Interests:

Ecological Research-Terrestrial Productivity
Ecosystem Analysis

Current Professional Activities:

Teaching: Ecology, Intro. Biology, Plant Physiology

Research: National Park Service, NSF, IBP

Publications, Technical Reports:

- Collins, D. D. 1963. The occurrence of nematodes in a population of *Agropyron smithii* in Montana. Plant Dis. Rep. 50:1.
- Collins, D. D. 1965. Ecology, cytology and biosystematics of the genus *Agropyron* native to Montana. Ph.D. Thesis, Montana State Univ.
- Collins, D. D. 1965. The cytology of the diploid and tetraploid strains of *Agropyron spicatum* native to Montana. Rep. 18th Western Grass Breeders Conf.
- Collins, D. D. 1965. Natural hybrids of *Agropyron latiglume* and *Agropyron scribneri*. Torrey Bot. Club Bull. 93.
- Collins, D. D. 1969. Macroclimate of the grassland ecosystem, p. 29 to 40. In R. L. Dix and R. Beidleman [ed.] Grassland ecosystem: a preliminary synthesis. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 2. 437 p.
- Collins, D. D. 1969. Ecological effects of weather modification. Progress Rep. and Continuation Proposal. N.S.F.

*Collins, D. D. 1971. Comprehensive Network Site description, BRIDGER. U.S. IBP Grassland Biome Tech. Rep. No. 38. Colorado State Univ., Fort Collins. 10 p.

*Collins, D. D. 1971. The Bridger Site, 1970 progress report. U.S. IBP Grassland Biome Tech. Rep. No. 84. Colorado State Univ., Fort Collins. 40 p.

*Collins, D. D. and T. Weaver. 1972. Grassland Biome studies at the Bridger Site, 1971. U.S. IBP Grassland Biome Tech. Rep. No. 198. Colorado State Univ., Fort Collins. 21 p.

Name: David J. Connor

Born: 1938

Academic Training:

Degree	Year	Institution	Major
B.A.S.		Melbourne University	
Ph.D.		Melbourne University	Plant Ecology

Special Training:

Professional Experience:

Date	Position	Institution
1961	Assistant Research Officer	Soil Conservation Authority of Victoria
1962-64	Vic. Wheat Research Committee Research Scholar	Botany Department, Melbourne University
1964-65	Assistant Lecturer	School of Agriculture University of Melbourne
1965-70	Lecturer	Botany Department, University of Queensland
1971-	Senior Lecturer	School of Agriculture, La Trobe University

Professional and Honorary Societies:

Member Australian Institute of Agricultural Science
Member Australian Society of Plant Physiologists
Member Australian Ecological Society

Major Interests:

Physiological basis of plant response, particularly relating to growth and water use.

Current Professional Activities:

A model of wheat growth and yield.
Effect of temperature stress on photosynthesis.

Publications, Technical Reports:

Connor, D.J. 1965. Seed production and seed germination of *Amsinckia hispidula*. Aust. J. Exp. Agric. Anim. Husb. 5:495-99.

- Connor, D.J. 1965. Control of *Amsinckia* spp. by the pastures of north-western Victoria; Aust. J. Exp. Agric. Anim. Husb. 5:499-504.
- Connor, D.J. 1966. Vegetation studies in northwest Victoria. I. The Beulah-Hopetoun area. Proc. Roy. Soc. Vict. N.S. 72:579-95.
- Connor, D.J. 1966. Vegetation studies in northwest Victoria. II. The Horsham area. Proc. Roy. Soc. Vict. N.S. 72:637-53.
- Connor, D.J. and G. L. Wilson 1968. Response of a coastal Queensland heath community to fertilizer application. Aust. J. Bot. 16:117-23.
- Connor, D.J. and B.R. Tunstall 1968. Tissue water relations for brigalow and mulga. Aust. J. Bot. 16:487-90.
- Connor, D.J. 1969. Growth of grey mangrove (*Avicennia marina*) in nutrient culture. Biotropica 1:36-40.
- Connor, D.J. 1970. Community structure and photosynthesis. A computer model. Bot. Dept. Univ. Queensland Report.
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- Connor, D.J. and O. Cartledge 1971. Structure and photosynthesis of wheat communities. J. Appl. Ecol. 8:353-62.
- Connor, D.J., B.R. Tunstall, and R. Van den Driessche 1971. An analysis of photosynthetic response in a brigalow forest. *Photosynthetica* 5:218-25.
- Van den Driessche, R., D.J. Connor, and B. R. Tunstall 1971. Photosynthetic response of brigalow to irradiance, temperature and water potential. *Photosynthetica* 5:210-17.
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- Downes, R.W. and D.J. Connor 1973. Effect of growth environment on gas exchange characteristics of brigalow (*Acacia harpophylla*) *Photosynthetica* (in press).
- Cartledge, O. and D.J. Connor 1973. Photosynthetic efficiency of tropical and temperate plant communities. *Photosynthetica* (in press).

- *Connor, D.J. 1973. GROMAX: A potential productivity routine for a total grassland ecosystem model. US IBP Grassland Biome Tech. Report No. 208 Colorado State University, Fort Collins, Colorado. 27 pp.
- *Connor, D.J., L.F. Brown, and M.J. Trlica 1973. Plant cover, light interception and photosynthesis of shortgrass prairie. Submitted to Photosynthetica. Jan. 1973.

Name: Alexander Thom Cringan

Born: 1926

Academic Training:

Degree	Year	Institution	Major
B.Sc.F.	1948	University of Toronto	Forestry
M.A.	1956	University of Toronto	Zoology
Ph.D.	1965	University of Michigan	Conservation

Professional Experience:

Date	Position	Institution
1950-1955	Biologist	Ontario Department Lands and Forests
1955-1958	Visiting Lecturer	University of Guelph
1959-1969	Acting Assistant Professor	University of Guelph
1960-1966	Assistant Professor	University of Guelph
1966-1968	Associate Professor	University of Guelph
1968-1969	Visiting Professor	Colorado State University
1969-1970	Associate Professor	University of Guelph
1970-	Professor	Colorado State University

Professional and Honorary Societies:

The Wildlife Society
Canadian Society of Wildlife and Fishery Biologists
Sigma Xi
Xi Sigma Pi

Major Interests:

Impact of resources management activities on faunal resources; factors affecting productivity of populations of wildlife, especially large mammals and including carnivores; techniques, including remote sensing and bio-telemetry.

Current Professional Activities:

Consultant in Wildlife Biology to Rocky Mountain Center on Environment, and Thorne Ecological Institute
Assistant Leader, Colorado Cooperative Wildlife Research Unit
Department Chairman of Graduate Affairs

Publications, Technical Reports:

Cringan, A. T. 1953. Recent records of the magpie in northwestern Ontario. Can. Field-Natur. 67:43-44.

Passmore, R. C., R. L. Peterson and A. T. Cringan. 1955. A study of mandibular tooth-wear as an index to age of moose, p. 223-238, Appendix A. In Randolph L. Peterson. North American Moose. Univ. Toronto Press.

- Cringan, A. T. 1955. Studies of moose antler development in relation to age, p. 239-246, Appendix B. In Randolph L. Peterson. North American Moose. Univ. Toronto Press.
- Cringan, A. T. 1956. Value of moose hunting to northwestern Ontario. Northern Sportsman 11:8-9.
- Cringan, A. T. 1956. Some aspects of the biology of caribou and study of the woodland caribou range of the Slate Islands, Lake Superior, Ontario. MA Thesis, Univ. Toronto.
- Edwards, R. Y., A. T. Cringan, C. D. Fowle, R. C. Passmore, A. J. Reeve and D. J. Robinson. 1956. Forestry and wildlife management - dual endeavours on forest land. Forest. Chron. 32:433-443.
- Cringan, A. T. 1957. Notes on the biology of the red-necked grebe in western Ontario. Can. Field-Natur. 71:72-73.
- de Vos, A. and A. T. Cringan. 1957. Fur management in Ontario. Can. Geogr. J. 55:62-69.
- Cringan, A. T. 1957. History, food habits and range requirements of the woodland caribou of continental North America. North Amer. Wildlife Conf., Trans. 22:485-501.
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- de Vos, A. T., A. T. Cringan, J. K. Reynolds and H. G. Lumsden. 1959. Biological investigations of traplines in northern Ontario, 1951-56. Ontario Dep. Lands and Forests, Tech. Bull. Wildlife Ser. No. 8. 62 p.
- Bue, I. G., T. Evans and A. T. Cringan. 1960. Should we have an International Waterfowl Commission? 27th Annu. Meeting Midwest Fish and Game Comm., Proc. 47-60.
- Cringan, A. T. 1960. Some changes in the status of the mallard in Southern Ontario. Midwest Wildlife Conf., Proc. 9 p.
- Franklin, E. W. (Chairman). 1961. Frozen foods. Ont. Dept. of Agric. Publ. No. 504. (A. T. Cringan one of nine co-authors).
- Cringan, A. T., J. H. Palmer and R. E. Mason. 1962. Some effects of a headwater impoundment upon waterfowl. 27th North Amer. Wildlife Conf., Trans. 80-90
- Cringan, A. T. 1962. The Ontario Waterfowl Research Foundation: its aims and programs. Northeast Fish and Wildlife Conf., Proc.

- Cringan, A. T. 1963. U.S. Bureau of Sport Fisheries and Wildlife initiates new series of reports. First Annu. Rep. Ontario Waterfowl Res. Found. p. 10-11.
- Cringan, A. T. 1963. Banding by personnel of the Ontario Waterfowl Research Foundation. First Annu. Rep. Ontario Waterfowl Res. Found. p. 11-12.
- Cringan, A. T. and J. D. Roseborough. 1963. Species of waterfowl bagged in Southern Ontario in 1961. First Annu. Rep. Ontario Waterfowl Res. Found. p. 12-14.
- Lapp, W. S., F. N. Jerome and A. T. Cringan. 1963. Tolerance between host and donor tissue in birds. Science 141:818-820.
- Cringan, A. T. 1964. The Ontario Waterfowl Research Foundation. 15th Annu. Rep. the Wildfowl Trust, for 1962-1963:139-140.
- de Vos, A. and A. T. Cringan. 1964. Manual of the life histories of North American Wildlife. Guelph Campus Co-op.
- Beck, John (Moderator). 1964. Panel: Non-commercial operations. Proc. Second Bird Control Seminar. Bowling Green State Univ., Ohio. p. 78-103. (Panel member).
- Cringan, A. T. 1965. Some factors in selecting units for managing wildlife in Ontario. Ph.D. Thesis, Univ. Michigan.
- Cringan, A. T. 1966. Some factors in selecting units for managing wildlife in Ontario. Diss. Abstr. 27(2).
- Cringan, A. T. and D. R. Johnston. 1967. Deer management in southwestern Ontario. Published in the monthly newspaper of the Ontario Federation of Anglers and Hunters.
- Cringan, A. T. 1968. The Ontario Waterfowl Research Foundation. Ontario Fish and Wildlife Rev. 7:9-10.
- Mansell, W. D. and A. T. Cringan. 1968. A further instance of fetal atrophy in white-tailed deer. Can. J. Zool. 46:33-34.
- Ronald, K., A. T. Cringan and M. I. Dyer. 1968. Blackbird and starling research program, 1964-68. O.D.A.F. Agdex No. 685. 2 p.
- Cringan, A. T. 1969. History, food habits and range requirements of the woodland caribou of continental North America. In Cox [ed.] Readings in Conservation Ecology. Appleton-Century-Crofts.
- Cringan, A. T. 1969. The role of habitat and harvest in waterfowl management. Abstracts Fifth Annual Short Course in Game and Fish Management, Colorado State Univ., Fort Collins, p. 13-15.
- Cringan, A. T. 1970. The ecological framework. In Planning human values, and engineering. Publ. No. 20, Center for Resources Development, Univ. of Guelph, Ontario. 12 p.

- Cringan, A. T. 1970. Reproductive biology of ruffed grouse in southern Ontario, 1964-69. *J. Wildlife Manage.* 34:756-761.
- Cringan, A. T. 1971. Waterfowl areas-development and management. *In* R. D. Teague [ed.] *A manual of wildlife conservation*:82-84. The Wildlife Society.
- Cringan, A. T. 1971. Status of the wood duck in Ontario. *Trans. 35th N. Am Wildl. & Natur. Resources Conf.*:296-312.
- Cringan, A. T., A. Salvadori and R. H. Manske. 1971. Red crossbill breeding in Wellington County, Ontario. *Can. Field-Naturalist* 85(3):258.
- Lane, R. K. (Chairman). 1971. Resource satellites and remote airborne sensing for Canada; Report No. 8. Water Resources. Information Canada, Cat. No. M75-2/8. (One of 16 members of working group).
- Cringan, A. T. 1972. (AAAS-CODAZR Annual Symposium; "The High Plains: Problems on Semi-arid Environments - Part IV: The Challenges and Changes in Land Use"). The rangeland predation problem. (Submitted).
- Cringan, A. T. 1972. A brief look at predator control research: odor repellents. *National Wool Grower* 62(11):14 and 35.
- Cringan, A. T. and Paul D. Kilburn. 1973. Environmental planning for producing oil shale in Colorado. *North Amer. Wildl. Conf.* (Accepted).

Name: D. A. Crossley, Jr.

Born: 1927

Academic Training:

Degree	Year	Institution	Major
None	1948	Texas A&I College	
B.A., M.S.	1951	Texas Tech	Biology
Ph.D.	1956	University of Kansas	Entomology

Professional Experience:

Date	Position	Institution
1956-1967	Ecology	Oak Ridge Nat. Lab., Tennessee
1967-	Prof. Entomology	University of Georgia

Publication, Technical Report:

- Crossley, D. A. 1950. A new species of nasal mite, *Neonyssus* (*Neonyssus*) *columbae*, from the pigeon. Entomol. Soc. Washington Proc. 52:309-312.
- Crossley, D. A. 1952. Two new nasal mites from Columbiform birds. J. Parasitol. 38:385-390.
- Crossley, D. A. and R. B. Loomis. 1953. A new species of chigger from eastern Kansas. J. Kansas Ent. Soc. 26:32-34.
- Crossley, D. A. and L. J. Lipovsky. 1954. Two new chiggers from the central states. Entomol. Soc. Washington Proc. 56:240-246.
- Crossley, D. A. 1955. A new species of chigger from Colorado. J. Parasitol. 41:289-295.
- Crossley, D. A. and R. B. Loomis. 1955. A new *Neoschongastia* (Acarina: Trombiculidae) from western Kansas and eastern Colorado. Entomol. News 64:113-118.
- Crossley, D. A. and R. B. Loomis. 1955. A new genus of chigger mites. J. Kansas Entomol. Soc. 28:136-143.
- Crossley, D. A. and S. I. Auerbach. 1957. Effects of gamma radiation on Collembola population growth. Science 126:614.
- Crossley, D. A. and S. I. Auerbach. 1958. Strontium-90 and Cesium-137 uptake by vegetation under natural conditions. 2nd Un. Geneva Conf. Paper 401.
- Crossley, D. A. and M. E. Pryor. 1960. The uptake and elimination of Cesium-137 by a grasshopper--*Romalea microptera*. Health Phys. 4:16-20.
- Crossley, D. A. and K. K. Bohnsack. 1960. Long-term ecological study in the Oak Ridge area. III. The oribatid mite fauna in pine litter. Ecology 41:785-790.

- Crossley, D. A. 1964. Biological elimination of radionuclides. Nucl. Safety 5:265-268.
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- Crossley, D. A. and M. Witkamp. 1966. The role of arthropods and microflora in breakdown of White Oak litter. Pedobiologia 6:293-300.
- Crossley, D. A. and M. Witkamp. 1967. Effects of a pesticide on biota and breakdown of forest litter. VIII Int. Cong. Soil Sci., Vol. III, 1964, Proc. 887-892.
- Crossley, D. A. and D. E. Reichle. 1967. Investigations on heterotrophic productivity in forest insect communities, p. 563 to 587. In K. Petrusewicz [ed.] Secondary productivity of terrestrial ecosystems. Panstwowe Wydawnictwo Naukowe (Warsaw - Krakow).
- Crossley, D. A. 1968. Radiotungsten retention by two insect species. Health Physics 14:162-164.
- Crossley, D. A. and E. F. Menhinick. 1968. A comparison of radiation profiles of *Acheta domesticus* and *Tenebrio molitor*. Entomol. Soc. Amer. Ann. 61: 1359-1365.
- Crossley, D. A. 1968. Book Review: Methods in insect ecology. Ecology.
- Crossley, D. A. 1968. Book Review: Radioisotopes and ionizing radiation in entomology. Vol. III. Health Physics.
- Crossley, D. A. and P. E. Hunter. 1968. *Adamystis sarae*, a new species of soil mite from cornfield litter in South Carolina (Acarina: Anystidae). J. Georgia Entomol. Soc. 3:181-183.
- Crossley, D. A., D. E. Reichle, and M. H. Shanks. 1969. Calcium, potassium, and sodium content of forest floor arthropods. Entomol. Soc. Amer. Ann. 62:57-62.
- Crossley, D. A. and D. E. Reichle. 1969. Trophic level concentration of Cesium-137, sodium, and potassium in forest arthropods, p. 678 to 686. In D. J. Nelson and F. C. Evans [ed.] Symposium on radioecology. U. S. Atomic Energy Comm., Washington, D. C.

- Crossley, D. A. and S. I. Auerbach. 1960. A sampling device for soil microarthropods. *Acarologia* 3:279-287.
- Crossley, D. A. 1960. Comparative external morphology and taxonomy of nymphs of the *Trombiculidae* (Acarina). *Univ. Kansas Sci. Bull.* 40:135-321.
- Crossley, D. A. and W. T. Atyeo. 1961. The genus *Raphignathus duges* (Acarina, Raphignathidae) in the United States with notes on the old world species. *Acarologia* 3:14-20.
- Crossley, D. A. and H. G. Howden. 1961. Insect-vegetation relationships in a radioactive waste area. *Ecology* 42:302-317.
- Crossley, D. A. and J. H. Schnell. 1961. Comparative elimination of radiostrontium and radiocesium by grasshoppers. *Entomol. Soc. Amer. Ann.* 54:459-561.
- Crossley, D. A. and H. F. Howden. 1961. Insect species on vegetation of White Oak Lake bed, Oak Ridge, Tennessee. *Ornl-3094*.
- Crossley, D. A. and W. T. Atyeo. 1961. Labidostommidae from Australia (Acarina, Prostigmata) with the description of a new species. *Roy. Soc., South Australia, Trans.* 84:83-86.
- Crossley, D. A. and W. T. Atyeo. 1961. The Labidostommidae of New Zealand (Acarina). *Dominion Mus. Rec.* 4:29-48.
- Crossley, D. A. and R. W. Stranctmann. 1962. A new species of soil-inhabiting mite, *Hypoaspis marksi* (Acarina, Laelaptidae). *J. Kansas Entomol. Soc.* 34:180-184.
- Crossley, D. A. and M. P. Hoglund. 1962. A litter-bag method for the study of microarthropods inhabiting leaf litter. *Ecology* 43:571-573.
- Crossley, D. A. 1963. Heterotrophic productivity in the grazing food chain of terrestrial vegetation. Vol. 4. 16th Int. Conf. Zoology, Washington D. C., Proc. (August).
- Crossley, D. A. 1963. Movement and accumulation of radiostrontium and radiocesium in insect, p. 103 to 105. In V. Schultz and A. W. Klement, Jr. [Ed.] *Radioecology*. Reinhold, New York and AIBS, Washington.
- Crossley, D. A. 1963. Tracer studies in the breakdown of forest litter, p. 411 to 416. In V. Schultz and A. W. Klement, Jr. [ed.] *Radioecology*. Reinhold, New York and AIBS, Washington.
- Crossley, D. A. 1963. Consumption of vegetation by insects, p. 427 to 430. In V. Schultz and A. W. Klement, Jr. [ed.] *Radioecology*. Reinhold, New York and AIBS, Washington.
- Crossley, D. A. and R. B. Loomis. 1963. New species and new records of chiggers. (Acarina, Trombiculidae) from Texas. *Acarologia* 5:371-383.
- Crossley, D. A. 1963. Use of radioactive tracers in the study of insect-plant relationships, p. 43 to 54. In *Radiation and radioisotopes applied to insects of agricultural importance*. Int. Atomic Energy Agency, Vienna.

- Crossley, D. A. 1969. Comparative movement of ^{106}Ru , ^{60}Co and ^{137}Cs in arthropod food chains, p. 687 to 695. In D. J. Nelson and F. C. Evans [ed.] Symposium on radioecology. U. S. Atomic Energy Comm., Washington, D. C.
- Crossley, D. A. and D. E. Reichle. 1969. Analysis of transient behavior of radioisotopes in insect food chains. BioScience 19:341-343.
- Crossley, D. A. and R. I. Van Hook, Jr. 1969. Assimilation and biological turnover of Cesium-134, Iodine-131, and Chromium-51 in brown crickets, *Acheta domestimus* (L.) Health Physics 16:463-467.
- Crossley, D. A. and E. F. Menhinick. 1969. Radiation sensitivity of twelve species of arthropods. Entomol. Soc. Amer. Ann. 62:711-717.
- Crossley, D. A., C. A. Edwards, and D. E. Reichle. Experimental manipulation of soil invertebrate populations for trophic studies. (In press).
- Crossley, D. A., C. A. Edwards, and D. E. Reichle. The role of soil invertebrates in turnover of organic matter and nutrients. (In press)
- Crossley, D. A. Energy assimilation by the cricket *Acheta domestica* (L.) measured with radioactive Chromium-51. (In press).

Name: Rexford Daubenmire

Born: 1909

Academic Training:

Degree	Year	Institution	Major
B.S.	1930	Butler University	Botany
M.S.	1932	University of Colorado	Botany
Ph.D.	1935	University of Minnesota	Botany

Special Training:

"Tropical plant ecology" - course by P.W. Richards, Costa Rica, 1965

Professional Experience:

Date	Position	Institution
1935-36	Assistant Professor	University of Tennessee
1936-46	Assistant Professor	University of Idaho
1946-present	Associate Professor, Professor	Washington State University

Professional and Honorary Societies:

British Ecol. Society	Northwest Sci. Association
Ecol. Society America (President 1966)	Nature Conservancy
International Society for Tropical Ecol.	Sigma Xi
International Geogr. Union	Phi Kappa Phi
Pacific Sci. Association	

Major Interests:

Plant ecology - all aspects

Current Professional Activities:

Teaching

Research - three grants currently (U.S. Forest Service, National Park Service)

Publications, Technical Reports:

Daubenmire, R. and J. Daubenmire 1968. Forest vegetation of eastern Washington and northern Idaho. Wash. Agric. Exp. Sta. Tech. Bul. 60. 104 pp.

Daubenmire, R. 1972. On the relation between *Picea pungens* and *P. engelmannii* in the Rocky Mountains. Can. J. Bot. 50:733-742.

Daubenmire, R. 1972. Annual cycles of soil moisture and temperature as related to grass development in the steppe of eastern Washington. Ecol. 53:419-424.

Daubenmire, R. 1972. Some ecological consequences of converting forest to savanna in northwestern Costa Rica. Trop. Ecol. 13:31-51.

Daubenmire, R. 1973. Standing crops and primary production in savanna derived from semi-deciduous forest in Costa Rica. Bot. Gaz. 133:395-401.

(Above reports are representative of recent publications. Author has published a total of 76 articles and 2 books.)

Name: Jerrold L. Dodd

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B.S.	1965	Fort Hays Kansas State College	Botany
M.S.	1967	Fort Hays Kansas State College	Botany (Ecology)
Ph.D.	1970	North Dakota State University	Botany (Range Ecology)

Special Training:

Post-doctoral Fellowship in Ecosystem Analysis, Animal Science Department,
South Dakota State University, 1970-72

Professional Experience:

Dates	Position	Institution
1963	Range Conservationist	Bureau of Land Management
1964-1965	Range Conservationist	Bureau of Land Management
1965-1967	Research Assistant	Fort Hays Kansas State College
1967-1970	NDEA Fellow - Ecology	North Dakota State University
1970-1972	On-Site Coordinator	South Dakota State University
1972-	Graduate Faculty	Colorado State University
1972-	Assistant Director of Field Studies	IBP Grassland Biome Program

Major Interests:

Net primary production, total systems ecology, soil-plant relationships

Professional and Honorary Societies:

Society for Range Management
Ecological Society of America
AAAS
Beta Beta Beta
Sigma Xi

Current Professional Activities:

Primary production of northern mixed grass prairie
System analysis of short grass prairie
Ecology of *Agropyron spicatum* in North Dakota

Publications, Technical Reports:

Dodd, J.L. 1967. Environmental gradient analysis of remnant prairie in
the shale-limestone region of west-central Kansas. M.S. Thesis,
Fort Hays Kansas State College. 65 p. (under preparation for open
literature)

- Dodd, J.L. 1970. Distribution and community and site relationships of *Agropyron spicatum* in western North Dakota. Ph.D. Thesis, North Dakota State University. 106 p. (under preparation for open literature)
- Lewis, J.K., J.L. Dodd, H.L. Hutcheson, and C.L. Hanson. 1971. Abiotic and herbage dynamics studies on the Cottonwood Site, 1970. US IBP Grassland Biome Tech. Rep. No. 111. Colorado State Univ., Fort Collins.
- Dodd, J.L., J.K. Lewis, H.L. Hutcheson, and C.L. Hanson 1972. Abiotic and herbage dynamics studies on the Cottonwood Site, 1971. US IBP Grassland Biome Tech. Rep., Colorado State Univ., Fort Collins. (In preparation).

Name: Kenneth G. Doxtader

Born: 1938

Academic Training:

Degree	Year	Institution	Major
B.S.	1961	Univ. of Calif. (Berkeley)	Soils & Plant Nutr.
M.S.	1963	Cornell University	Soil Microbiology
Ph.D.	1965	Cornell University	Soil Microbiology

Professional Experience:

Date	Position	Institution
1961-1965	Research Assistant	Cornell University
1965-	Asst. Professor	Colorado State Univ.

Major Interests:

Ecology of soil microorganisms, biochemistry and microbiology of carbon, nitrogen and mineral transformations in natural environments, the fate of synthetic organic compounds in soil-water systems.

Professional and Honorary Societies:

American Society of Agronomy
Soil Science Society of America
American Society for Microbiology
Sigma Xi

Publications:

Author or coauthor of 8 publications. Pertinent or recent publications are listed below:

- Doxtader, K. G. and M. Alexander. 1966. Role of 3-nitropropanoic acid in nitrate formation by *Aspergillus flavus*. J. Bacteriol. 91:1186-1191.
- Doxtader, K. G. and M. Alexander. 1966. Nitrification by heterotrophic soil microorganisms. Soil Sci. Soc. Amer., Proc. 30:351-355.
- Doxtader, K. G. and M. Alexander. 1966. Nitrification by growing and replacement cultures of *Aspergillus*. Can. J. Microbiol. 12:807-815.
- Alexander, M., T. Yoshida and K. G. Doxtader. 1966. Substrates and products of heterotrophic and autotrophic nitrification. Intern. Congr. Microbiol. 9. (Abstr).
- Doxtader, K. G. and A. D. Rovia. Nitrification by *Aspergillus flavus* in sterilized soil. Austral. J. Soil Sci. In press.

Doxtader, K. G. and T. S. Hora. Inhibition of soil microorganisms by herbicides. (Manuscript in preparation).

Doxtader, K. G. and T. S. Hora. Inhibition of soil bacteria by diuron. (Manuscript in preparation).

Doxtader, K. G. The microbial degradation of aromatic compounds in soil-water systems. (Manuscript in preparation).

Name: Don A. Duncan

Born: 1929

Academic Training:

Degree	Year	Institution	Major
B.S.	1950	Texas A. & M. University	Wildlife Management
M.S.	1960	Texas A. & M. University	Range Management
Ph.D.	To be completed 1973	University of Wyoming	Range Management

Special Training:

Professional Experience:

Date	Position	Institution
1950-51	Asst. Game Biologist	Texas Game & Fish Comm.
1954-55	Grad. Teaching Asst.	Texas A. & M. University
1956-59	Range Conserv. (Research)	Southern Forest Exp. Sta., U.S. Forest Service
1959-65	Range Scientist	Pacific S.W. For. & Ran. E.S., U.S. Forest Service
1965-71	Project Leader	Pacific S.W. F. & R. E. S., U.S. Forest Service
1972-73	Principal Range Scientist	Pacific S.W. F. & R. E. S., U.S. Forest Service

Professional and Honorary Societies:

Sigma Xi
Gamma Sigma Delta
Society for Range Management
The wildlife Society
Ecological Society of America

Major Interests:

Range Research, California Annual Ranges
Livestock Grazing/Wildlife Interrelationships, Annual Ranges
Quail Habitat Manipulation Research
Ranch Pond Ecology Research

Current Professional Activities:

Lead Scientist, Annual Range Type; Range-Wildlife Environmental Research Work Unit, PSWF & RES, Fresno
Site Coordinator, San Joaquin Site, U.S. IBP Grassland Biome
Adjunct Prof., CSU, Fresno, Teaching course, Plant Science Department

Publications, Technical Reports:

- Duncan, Don A. and L. B. Whitaker. 1958. A new look at the possibilities of forest ranges and range cattle in Louisiana. *Forests and People*, 8(2):26-28, 48-49.
- Duncan, Don A. and E. A. Epps, Jr. 1958. Minor mineral elements and other nutrients on forest ranges in central Louisiana. *Louisiana Agric. Expt. Sta. Bul.* 516, 19 p.
- Duncan, Don A. 1958. Trace minerals ample on woods range. *Southern Forest Expt. Sta. Southern Forestry Notes* No. 117, p. 2.
- Duncan, Don A. and E. A. Epps, Jr. 1958. Minor minerals and other nutrients in Louisiana range forage. *J. Range Mangt.* 11(5):247-248.
- Duncan, Don A. and L. B. Whitaker. 1958. Deadening scrub hardwoods livens up forage. *Southern Forest Expt. Sta. Southern Forestry Note* No. 118 p. 1.
- Duncan, Don A. and L. B. Whitaker. 1959. Repellents reduce cattle browsing on pines. *Southern Forest Expt. Sta. Southern Forestry Notes* No. 119, pp. 2-3.
- Duncan, Don A. 1959. Weight methods for measuring utilization. p. 32-35, *Techniques and Methods of Measuring Understory Vegetation Proc.*, U.S. Forest Serv., Southern Forest Expt. Sta. and Southeastern Forest Expt. Sta. and Southeastern Forest Expt. Sta., 174 pp.
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- Duncan, Don A. and L. O. Hylton, Jr. 1970. Effects of fertilization on quality of range forage. *In U.S.D.A. Misc. Publ. No. 1147*, p. 57-62.

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- Duncan, Don A. 1971. Save a nickel, save a dime. Western Livestock Jour. (Mountains, Plains and Southwest Edition) 49(10):97 and (Pacific Slope Edition) 49(64):42.
- Duncan, Don A. 1971. Integration of cattle grazing and production of California quail on foothill rangeland. Abstracts of Papers, 24th An. Meeting, Soc. for Range Mangt., Reno, Nevada. p. 23.
- Duncan, Don A. Frequent mowing increases turkey mullein on California foothill rangeland. California Fish and Game. Submitted to Calif. Fish and Game Journal.
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- Newman, Thomas F., Jr. and D. A. Duncan. An updated list of the vertebrate fauna of the San Joaquin Experimental Range. Submitted to Forest Service Research.

Name: Melvin I. Dyer

Born: 1932

Academic Training:

Degree	Year	Institution	Major
B.S.	1955	University of Idaho	Zoology
M.S.	1961	University of Minnesota	Zoology (Parasitology)
Ph.D.	1964	University of Minnesota	Zoology (Ecology)

Special Training:

U.S. Department of Interior Course, Supervision and Human Behavior, June 1970.

Professional Experience:

Date	Position	Institution
1955	Graduate Teaching Asst.	Kansas State University
1955-1957	Research Laboratory Tech.	U.S. Army Medical Corps
1958	Graduate Research Asst.	University of Minnesota
1959-1960	Research Scientist	Minnesota State Board of Health, Minneapolis, Minnesota
1961-1962	Graduate Teaching Asst.	University of Minnesota
1961-1964	NIH Pre-doctoral Fellow	University of Minnesota
1964	Instructor	Wisconsin State University Biological Station Drummond, Wisconsin
1964-1967	Assistant Professor	Department of Zoology, University of Guelph Guelph, Ontario, Canada
1968-1972	Biologist-Supervisor	Bureau of Sport Fisheries and Wildlife, U.S. Dept. of Interior
1968-1972	Assoc. Professor of Zoology	The Ohio State University, Columbus, Ohio
1972-	Director of Process Studies	Colorado State University, Fort Collins, Colorado

Professional and Honorary Societies:

American Ornithologists' Union	Colorado Chapter, The Wildlife Society
Wilson Ornithological Society	
Cooper Ornithological Society	The Ecological Society of America
Northeastern Bird Banding Association	The Society of the Sigma Xi
The Wildlife Society	The American Association for the Advancement of Science

Major Interests:

Wildlife and Mountain photography; Amateur oenology.

Current Professional Activities:

Director of Process Studies, U.S. International Biological Program, Grasslands Biome; and Research Associate, Fishery and Wildlife Biology Department, Colorado State University.

Publications, Technical Reports:

- Dyer, M. I., et al. 1960. Two new species of flagellates cultivated from insects of the genus *Gerris*. Jour. of Protozool. 7:390-392.
- Dyer, M. I., et al. 1960. The cultivation of *Blastocrithidia leptocoridis* (McCullough). Jour. Parasit. 46(5):43-44.
- Dyer, M. I. 1961. Maintenance of *Paragonimus kellicotti*, Ward and *Toxoplasma gondii*, Nicolle and Manceaux together *in vitro*. M.S. Thesis, University of Minnesota, Minneapolis. 62 pp.
- Dyer, M. I. 1965. Radar and morphometric studies on transient Red-winged Blackbird populations. Ph.D. Thesis, University of Minnesota, Minneapolis, 156 pp. Dissertation Abstracts.
- Dyer, M. I. 1964. Approaches to research. Proc. Second Bird Control Seminar, Bowling Green, Ohio, 124-126.
- Dyer, M. I. 1964. Radar and morphometric studies on transient Red-winged Blackbird populations. American Ornithologists' Union, Lawrence, Kansas.
- Dyer, M. I. 1965. Research on Avian control problems: Studies on Blackbird depredation in Ontario. The Ont. Naturalist, Dec.:5-12.
- Dyer, M. I. 1965. An analysis of blackbird flock feeding behavior. American Ornithologists' Union, Columbus, Ohio.
- Dyer, M. I. 1966. Blackbird flock feeding patterns in Southwestern Ontario, a theoretical model. Proc. Third Bird Control Seminar, Bowling Green, Ohio, 93-101.
- Dyer, M. I., et al. 1966. A microclimate telemetry station. Technical paper to 31st North American Wildlife Conf., Session on Telemetry, Pittsburgh. 9 pp.
- Dyer, M. I., et al. 1966. Serological survey for neutralizing antibodies to Eastern Equine and Western Equine Encephalitis viruses in man, wild birds, and swine in Southern Mexico during 1961. Am. Jour. of Trop. Med. and Hyg., 15:211-218.
- Dyer, M. I., et al. 1966. Microclimate telemetry studies of Red-winged Blackbird (*Agelaius phoeniceus*) nesting habitat. Symposium for the Collection and Processing of Field Data. CSIRO, Canberra, Australia. 261-271 pp.
- Dyer, M. I. 1967. Methods of research of blackbird control. North American Conf. on Blackbird Depredation in Agriculture. Columbus, Ohio.
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- Dyer, M. I., et al. 1967. A design for a miniature bio-potential radio transmitter. Jour. Appl. Physiol. 22:1147-1148.
- Dyer, M. I. 1968. Respiratory metabolism studies on Red-winged Blackbird nestlings. Ontario Twenty-first Sessions on Fisheries and Wildlife Research, Sudbury, Ontario; and Cooper Ornithological Society, Santa Barbara, California. Canad. Jour. Zool. 46:223-233.
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- Dyer, M. I. 1968. Flight behavior of the Red-winged Blackbird. 30th Annual Midwest Fish and Wildlife Conference, Columbus, Ohio.
- Dyer, M. I. 1968. Blackbird and Starling Research Program. 1964-1968. Ontario Department of Agriculture and Food. 29 pp.
- Dyer, M. I. 1968. Physical properties of blood in the Red-winged Blackbird (*Agelaius phoeniceus*). Canad. Jour. Zool. 46:157-163.
- Dyer, M. I., et al. 1968. Yellowheaded Blackbird nesting in Southern Ontario. Wilson Bull. 80:236-237.
- Dyer, M. I., et al. 1969. Respiratory metabolism of the Red-winged Blackbird (*Agelaius phoeniceus*) in relation to ambient temperature. American Ornithologists' Union, Duluth, Minnesota. Condor 71:291-298.
- Dyer, M. I., et al. 1969. Daily rhythm and seasonal change in the summer diet of adult Red-winged Blackbirds. J. Wildl. Mgt. 34(4):789-799.
- Dyer, M. I. 1970. Territorial male Red-winged Blackbird distribution in Wood County, Ohio. In Proc. Fifth Bird Control Seminar, Bowling Green, Ohio, 185-194.
- Dyer, M. I., et al. 1970. Distribution of breeding Red-winged Blackbird (*Agelaius phoeniceus* L.) breeding populations in the Lake Erie region of the United States and Canada. Proceedings of General Meeting of the Working Group on Granivorous Birds: "Energy flow through populations of granivorous birds" The Hague, September 1970. In press Polish Academy of Sciences.
- Dyer, M. I. 1971. Feeding patterns of blackbird flocks under stressed and unstressed conditions. American Ornithologists' Union, Seattle, Washington. Submitted to Science.
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- Dyer, M. I. 1971. Red-winged Blackbird nest surveys in Northern Ohio using a transect method. Progress Report, U.S. Bureau of Sport Fisheries and Wildlife. Patuxent Wildlife Research Center, Maryland.
- Dyer, M. I. 1972. A roadside index count of territorial male Red-winged Blackbirds in Ohio, Michigan and Ontario, 1968. Progress Report, U.S. Bureau of Sport Fisheries and Wildlife. Patuxent Wildlife Research Center, Maryland.
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- Dyer, M. I. 1973. The effects of environmental stresses on growth of blue grama (*Bouteloua gracilis*) in environmental control growth chambers. U.S. IBP Grassland Biome Tech. Rep. Colorado State Univ., Fort Collins, (In preparation).
- Miller, J. L., and M. I. Dyer. 1973. Relationships between age, metabolic rate, respiratory quotients, and time of day in the domestic rabbit. U.S. IBP Grassland Biome Tech. Rep. Colorado State Univ., Fort Collins, (In preparation).
- Jameson, D. A. and M. I. Dyer. 1973. Process Studies Workshop Report. U.S. IBP Grassland Biome Tech. Rep. No. 220, Colorado State Univ., Fort Collins.
- Dyer, M. I. 1973. Energetics model, Chapter 7. In D. A. Jameson and M. I. Dyer [ed.] Process Studies Workshop Report. U.S. IBP Grassland Biome Tech. Rep. No. 220, Colorado State Univ., Fort Collins.

Name: James E. Ellis

Born: 1938

Academic Training:

Degree	Year	Institution	Major
B.S.	1961	University of Missouri	Animal Husbandry
M.S.	1966	University of Missouri	Zoology (Wildlife Biology)
Ph.D.	1970	University of California at Davis	Zoology (Ecology)

Special Training:

NIH Trainee in systems ecology, 1967-1970, University of California-Davis
NSF Post doctoral Fellow - University of Bristol, Psychology Dept. 1970-1971

Professional Experience:

Date	Position	Institution
1963	Research Assistant	University of Nebraska
1964-1965	Teaching Assistant	University of Missouri
1965-1966	Research Biologist	Missouri Department of Conservation
1966-1970	Research Assistant	University of California at Davis
1971-	Research Ecologist - Lecturer	Colorado State University

Professional and Honorary Societies:

American Institute of Biological Sciences
Ecological Society of America
American Society of Mammalogists
The Wildlife Society
The East African Wildlife Society

Major Interests:

The development and organization of ecosystem principles as guidelines for an integrated research program. The use of systems analysis in ecological and resource management problems. Environmental influences on population dynamics of ungulates. The ecological basis of animal social organization. Models of socio-ecological systems. Social ecology of primates and ungulates.

Current Professional Activities:

Research ecologist, Natural Resource Ecology Laboratory, and Faculty affiliate, Department of Sociology and Anthropology, Faculty, Laboratory of Animal Behavior, Colorado State University, Fort Collins, Colorado.

Publications, Technical Reports:

- Ellis, J. E. 1966. Range and movements of wild turkeys in Missouri, Master's Thesis, University of Missouri, Columbia, Missouri.
- Ellis, J. E. and J. B. Lewis. 1967. Mobility and annual range of wild turkeys in Missouri, Journal of Wildlife Management, 31(3): 568-581.
- Ellis, J. E. 1970. A computer analysis of fawn survival in the pronghorn antelope. Ph.D. Thesis, University of California at Davis, California.
- Ellis, J. E. Observations on Pronghorn population dynamics. Trans. Antelope States Workshop. (In press).
- Ellis, J. E. A consumer diet-selection model. U.S. IBP Grassland Biome Tech. Rep. No. 220. Colorado State Univ., Fort Collins. (In Press).
- Ellis, J. E. and L. F. Paur. A model for secondary production in a wild grassland herbivore. (In preparation).
- Ellis, J. E. Community structure and population recruitment in the pronghorn antelope. (In preparation).
- Ellis, J. E. Systems in animal societies. (In preparation).
- Ellis, J. E. The social implications of resource distribution. (In preparation).
- Ellis, J. E. 1972. Baboon Ecology by S. A. Altmann and J. Altmann, reviewed for the Journal of Wildlife Management, 36(2)677-678.

Name: Robert H. Ellis

Born: 1929

Academic Training:

Degree	Year	Institution	Major
B.S.	1951	University of Wisconsin	Bacteriology
M.S.	1953	University of Wisconsin	Bacteriology
Ph.D.	1957	University of Wisconsin	Microbiology

Special Training:

Professional Experience:

Date	Position	Institution
1951-1961	Regular Army Officer	U.S. Army
1951-1953	Teaching Assistant and Research Assistant	University of Wisconsin Department of Bacteriology
1953-1955	U.S. Army Infantry Commander	Fort Riley, Kansas
1955-1957	Research Associate	University of Wisconsin Dept. of Bacteriology
1957-1959	Member U.S. Army Chemical Corps Board	Edgewood, Maryland, U.S. Army Chemical Corps Board
1959-1961	Staff and Faculty	U.S. CBR Weapons Course Dugway, Utah
1961-1962	Senior Analyst	Aerospace Group, Boeing Co. Seattle, Washington
1962-1964	Physical Science Administrator	U.S. Arms Control and Disarmament Agency, Washington, D.C.
1964-1968	Director of Operations, Research Division	TRC, Inc. Hartford, Connecticut
1968-1969	Vice President	Resource Management Studies, TRC, Inc. Hartford, Connecticut
1969-1970	President	Travelers Research Center Hartford, Connecticut
1970-1972	President	The Center for the Environment and Man, Inc. Hartford, Connecticut
1972-1973	Research Fellow	CEM, Inc. Hartford, Connecticut
1972-1973	Assistant to the Vice President	R.P.I. Graduate Center Hartford, Connecticut

Professional and Honorary Societies:

American Society for Microbiology	Phi Sigma
Society for General Microbiology	Gamma Alpha
American Association for the Advance of Science	The Scientific Research Society of America
Sigma Xi	
Marine Technology Society	National Geographic Society

Major Interests:

Microbial Ecology; Systems Analysis; ECO Systems Modeling; Methods for Integrated Research Program Organization Development and Management; Integrated Research Program Management; Coastal Zone and Marine Resource Studies; Applications of Systems Approaches to Societal Problems.

Current Professional Activities:

Program and Curriculum Development for a Problem Oriented Graduate School; Program Manager and Principal Investigator for Marine Coastal Zone Studies Around Long Island and Chesapeake Bay; Chairman Research and Planning Lutheran Church of America; Sea Grant, NSF - RANN, IBP Scientific Advisory Committee; Environmental Committee Greater Hartford Chamber of Commerce; Advisory Committee Talcott Mountain Science Center.

Publications, Technical Reports:

- Ellis, R. H., C. Kazdas, and E. Morse. 1950. Pathogenicity of 62 strains of *Corynebacterium renal* in mice. J. Bacteriol.
- Ellis, R. H. 1953. Intestinal microflora of women on special diets. University of Wisconsin.
- Ellis, R. H. 1957. The effect of antibiotics upon *Lactobacillus acidophilus* and other lactobacilli. University of Wisconsin.
- Ellis, R. H. and W. B. Sarles. 1958. Isolation of antibiotic resistant lactobacilli. J. Bacteriol.
- Ellis, R. H. 1958. Concepts for employment of antipersonnel BW. Information Report 1, U.S. Army Chem. Corps Board, (CLASSIFIED).
- Ellis, R. H., R. Zumwalt and F. Ballentine. 1959. Wargaming Handbook for biological and chemical warfare. Defense Sci. Board, Ofc. of the Dir. of Defense Res. and Eng., DOD, (CLASSIFIED).
- Ellis, R. H. 1959. Insect-borne antipersonnel BW. U.S. Army Chem. Corps Board, (CLASSIFIED).
- Ellis, R. H. 1959. Chemical, biological and radiological warfare agents... (contributor to report). U.S. House of Representatives, 86th Congress, 1st Session, June.
- Ellis, R. H. 1959. Research in CBR (contributor to report). U.S. House of Representatives, Committee on Sci. and Astronaut., 86th Congress, 1st Session, August.
- Ellis, R. H., W. F. Lynch, B. Shields, W. Gill, and D. Longo. 1960. Exploitation of tactical BW. Combat Development Projection Report CMLCD 57-4, U.S. Army Chem. Corps Board, June, (CLASSIFIED).
- Ellis, R. H. 1961. Operational back-up volume (lead engr. assisted by proposal team). Proposal for Tactical Fighter Experimental (TFX), Boeing Co., Aerospace Div., (CLASSIFIED).

- Ellis, R. H. 1962. Arctic deployment of strategic missiles. Boeing Co., Aerospace Div., (CLASSIFIED).
- Ellis, R. H., R. Zieke and J. Beebe. 1962. Logistic support vehicles for earth orbital space missions. Boeing Co., Aerospace Div., (CLASSIFIED)
- Ellis, R. H., G. Rounds and C. Beum. 1962. Verification requirements for arms control and disarmament agreements. Boeing Co., Aerospace Div., Proposal to ACDA.
- Ellis, R. H. 1963. CWBW in the Middle East. ACDA, (CLASSIFIED).
- Ellis, R. H., J. A. Russo, Jr., K. Truern-Trend, et al. 1965. The operational and economic impact of weather on the construction industry of the United States. The Travelers Research Center, Inc.
- Ellis, R. H., Dalzell, Koch, Milly, et al. 1965. Chemical and biological weapons and defense in future naval operations (U). The Travelers Research Center, Inc., (CLASSIFIED).
- Ellis, R. H. 1966. Chemical and biological weapons and defense in future naval operations (U), Final Report 7664-206-S, The Travelers Research Center, Inc., (CLASSIFIED).
- Ellis, R. H. 1966. Task 1 - Assessment of need. TRC input to Studies basic to consideration of artificial heart research and development program. Final Report, No. SVHSER 3870, Hamilton Standard Div., United Aircraft Corporation.
- Ellis, R. H., J. C. Kellogg, et al. 1966. Implications of the use of incapacitation agents in warfare (U). Final Report 7675-222-S, The Travelers Research Center, Inc., (CLASSIFIED).
- Ellis, R. H., P. Bock, et al. 1967. Specifications for a computer simulation model of the national water data system; Phase A. Final Report 7625-237, The Travelers Research Center, Inc.
- Ellis, R. H., E. F. Fennessy and J. A. Russo, Jr. 1967. The application of scientific techniques to law enforcement and criminal justice problems. Final Report 7331-252, The Travelers Research Center, Inc.
- Ellis, R. H., P. Bock, W. R. Caruth, et al. 1967. A computer simulation model for use in water data system planning and management. Final Report 7625-261, The Travelers Research Center, Inc.
- Ellis, R. H., K. Trouern-Trend, et al. 1967. Specialized methodology for war games, Task III of Methodology and applied studies relative to CB operations. Final Report 7622-162, The Travelers Research Center, Inc.
- Ellis, R. H. 1968. A systems approach to the analysis of ecosystems. University of Wisconsin, Institute for Environmental Studies, General Seminar Series.

- Ellis, R. H., P. B. Cheney, et al. 1969. The development of a procedure and knowledge requirements for marine resource planning, functional step one, the classification of marine resource problems of Nassau and Suffolk Counties. TRC Report 7722-347a and 7722-347b, The Travelers Research Corporation.
- Ellis, R. H. 1969. Planning and analysis project, analysis of ecosystems program, international biological program. The Travelers Research Corporation.
- Ellis, R. H. and P. B. Cheney. 1970. Marine resources planning and management. Marine Technology Society Journal, 4:2
- Ellis, R. H. et al. 1972. Guidelines for Marine Resources Planning and Policy on Long Island. The Center for the Environment & Man, Inc. Report 4103-459.
- Ellis, R. H. et al. 1972. The Design of a Management Information System for Coastal Resources Planning. The Center for the Environment & Man, Inc. Report 4103-460.
- Ellis, R. H. 1972. Coastal Zone Management System: A Combination of Tools. Presentation given at the Marine Technology Society Conf. Feb. 1972, Conference entitled Tools for Coastal Zone Management.

Name: William S. Ferguson

Born: 1927

Academic Training:

Degree	Year	Institution	Major
B.S.	1949	Oregon State University	Chemistry
M.S.	1953	Oregon State University	Chemistry, Physics
Ph.D.	1956	University of Illinois at Urbana	Chemistry

Professional Experience:

1949-56	Analytical Development Chemist	General Electric Company Richland, Washington
1953-56	Research Assistant	University of Illinois
1956-70	Senior Research Geochemist	Marathon Oil Company Littleton, Colorado
1970-	Director, Analytical Chemistry Facility	Colorado State University

Professional and Honorary Societies:

1955-56 MERCK Fellow in Analytical Chemistry
American Chemical Society
American Association for Advancement of Science
Organic Geochemistry Group, Geochemical Society

Major Interests:

Potentiometry
Chronopotentiometry
General Chromatography
Petroleum or Hydrocarbons
General Analytical

Current Professional Activities:

Chemist, Colorado State University, Department of Chemistry
(Director, Analytical Chemistry Facility)

Publications, Technical Reports:

Ferguson, William S., and H. A. Laitinen. 1957. Chronopotentiometric analysis in fused lithium chloride-potassium chloride. Anal. Chem. 29:4-9.

Ferguson, William S., H. A. Laitinen, and R. A. Osteryoung. 1957. Preparation of pure fused lithium chloride-potassium chloride eutectic solvent. J. Electrochem. Soc. 104:516-520.

Ferguson, William S., H. A. Laitinen, and C. H. Liu. 1958. Polarography of metal ions in fused lithium chloride-potassium chloride eutectic solvent. Anal. Chem. 30:1266-1270.

- Ferguson, William S. 1962. Analytical problems in determining hydrocarbons in sediments. Amer. Assoc. Petroleum Geol. Bull. 46:1613-1620.
- Ferguson, William S. and C. W. Gullikson. 1962. A microcell for ultraviolet absorption studies. Appl. Spect. 16:41-42.
- Ferguson, William S. and D. R. Baker. 1964. Stable carbon isotopes in petroleum and sediment hydrocarbons from the Cherokee petroleum province. Geol. Soc. Amer., Abstr., p. 7.
- Ferguson, William S. 1965. Normal hydrocarbon determination using 5 A molecular sieves. Amer. Chem. Soc. Spring Meeting Abstracts, p. 10 B.
- Ferguson, William S. 1967. A paper presenting results and interpretation on the detrital mineral particle content of filter-feeding zooplankton of the Pacific. (In preparation for Science).
- Ferguson, William S. 1967. Carbon-13 variations among hydrocarbons in the Ponca City crude oil. Geol. Soc. Amer., Abstr., p. 64.
- Ferguson, William S., D. R. Baker and G. E. Claypool. 1967. Regional organic geochemistry of the Cherokee group, Kansas and Oklahoma. (Unpublished manuscript to be submitted to Amer. Assoc. Petroleum Geol. Bull.)
- Ferguson, William S. and D. G. McCubbin. 1967. Clay mineralogy and organic geochemistry of Gulf of Mexico sediments. (In preparation for Amer. Assoc. Petroleum Geol. Bull.)
- Ferguson, William S., J. J. Griffin, and E. D. Goldberg. 1970. Atmospheric dusts from the North Pacific - A short note on a long range eolian transport. J. Geophys. Res. 75:1137-1139.

Name: Herbert G. Fisser

Born: 1926

Academic Training:

Degree	Year	Institution	Major
B.S.	1958	Montana State University	General Agriculture
M.S.	1961	Montana State University	Range Management
Ph.D.	1962	University of Wyoming	Range Management

Special Training:

Summer Institute in Radioecology, Oak Ridge, Tennessee - 1963
Training Course in Aerial Photo Interpretation, Corvallis, Oregon - 1964
Training Course in Radiation Health and Surveillance Procedure, Grand Junction, Colorado - 1968

Professional Experience:

Date	Position	Institution
1958	Research Assistant	Montana State University
1959-1962	Instructor	University of Wyoming
1962-1966	Assistant Professor	University of Wyoming
1966	Associate Professor	University of Wyoming
1970	Professor	University of Wyoming

Professional and Honorary Societies:

American Society of Range Management
Ecological Society of America
Sigma Xi
The Wildlife Society
INTECOL (International Association of Ecology)
AIBS
Colo-Wyo. Academy of Science
Gamma Sigma Delta
Alpha Zeta

Major Interests:

Arid land ecology, rangeland production-moisture relationships, grazing management, game range improvement, harvester ant-rangeland relationships.

Current Professional Activities:

Teaching: Range Plant Identification and Ecology, Aerial Photo Interpretation, Vegetation Measurement Methods (Graduate Level)

Research: Plant Pattern Analysis, Grazing Systems Impacts, Arid Land Ecology, Game Range Improvement

Publications, Technical Reports:

Van Dyne, G. M., W. Vogel, and H. G. Fisser. 1963. Influence of plot size and shape on range herbage production estimates. Ecology 44:746-759.

- Fisser, H. G. 1964. Range survey in Wyoming's Big Horn Basin. Wyoming Agr. Exp. Sta. Bull. 424. 44 p.
- Fisser, H. G. 1965. Vegetation changes from cold desert to subalpine communities. Int. Grassland Congr. Proc. 10:425-427.
- Fisser, H. G. and G. M. Van Dyne. 1966. Influence of number and spacing of points on accuracy and precision of basal cover estimates. J. Range Manage. 19:205-211.
- Fisser, H. G. 1968. Soil moisture and temperature changes following sagebrush control. J. Range Manage. 21:283-287.
- Wight, J. R. and H. G. Fisser. 1968. *Juniperus osteosperma* in northwestern Wyoming-their distribution and ecology. Wyoming Agr. Exp. Sta. Sci. Monogr. No. 7. 31 p.
- Kirkham, D. R. and H. G. Fisser. 1972. Rangeland relations and Harvester Ants in Northcentral Wyoming. J. Range Management. 25:55-60.
- Shaver, Jens C. and H. G. Fisser. 1972. Panchromatic, color, and infrared photography for detailed vegetation mapping. Proc. Soc. Range Manage. 25th Ann. Meeting, Washington, D.C. Feb. 8, 1972. p. 33.
- Shaver, Jens C. and H. G. Fisser. 1972. Detailed vegetation mapping of the IBP Pawnee Site. U.S. IBP Grassland Biome Tech. Rep. No. 150. Colorado State Univ., Fort Collins. 44 p.
- Stroud, D. W. and H. G. Fisser. 1972. Plant pattern, microrelief and *Bouteloua gracilis* culm density studies on the Pawnee Site: 1970-1971. U.S. IBP Grassland Biome Tech. Rep. No. 186. Colorado State Univ., Fort Collins. 26 p.

Name: Robert C. Francis

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B.A.	1964	Univ. California, Santa Barbara	Mathematics
M.S.	1966	Univ. Washington	Biomathematics
Ph.D.	1970	Univ. Washington	Biomathematics

Professional Experience:

Date	Position	Institution
1969-1971	Asst. Prof. Statist., Fishery, and Wildl. Biol.	Colorado State University
1971-	Research Associate	Inter-American Tropical Tuna Commission

Professional and Honorary Societies:

Biometric Society

Major Interests:

Applications of statistics to ecological problems; mathematical modeling of ecological systems

Publications, Technical Reports:

- Francis, R. C. 1966. Estimation of survival rates from a multiple tag-recapture experiment. M. S. Thesis, Univ. Washington, Seattle, Washington.
- Francis, R. C. 1970. Simulation and estimation of movement in a stratified population subject to recruitment and emigration. Ph.D. Thesis, Univ. Washington, Seattle.
- Swartzman, G. [Coordinator]. 1970. Some concepts of modelling. U.S. IBP Grassland Biome Tech. Rep. No. 32. Colorado State Univ., Fort Collins. 142 p.
- Bledsoe, L. J., R. C. Francis, G. L. Swartzman, and J. D. Gustafson. 1971. PWNEE: A grassland ecosystem model. U.S. IBP Grassland Biome Tech. Rep. No. 64. Colorado State Univ., Fort Collins. 179 p.
- Francis, R. C., C. V. Baker, G. M. Van Dyne, and J. D. Gustafson. 1971. A study of the weight estimation method of botanical analysis. U.S. IBP Grassland Biome Tech. Rep. No. 117. Colorado State Univ., Fort Collins. 147 p.
- Francis, R. C., and M. Camplon. 1972. Statistical analysis of intraseasonal herbage dynamics in a variety of grassland communities. U.S. IBP Grassland Biome Tech. Rep. No. 141. Colorado State Univ., Fort Collins. 142 p.
- Moir, W. H. and R. C. Francis. 1972. Foliage biomass and surface area in three *Pinus contorta* plots in Colorado. Forest Science 18(1):41-45.

Francis, R. C. and L. D. Harris. 1972. AFCONS: A dynamic simulation model of an interactive herbivore community. U.S. IBP Grassland Biome Tech. Rep. No. 158. Colorado State Univ., Fort Collins. 88 p.

Name: Norman R. French

Born: 1927

Academic Training:

Degree	Year	Institution	Major
B.A.	1949	University of Illinois	Zoology
M.A.	1951	University of Colorado	Biology
Ph.D.	1954	University of Utah	Biology

Special Training:

Calculus, Nuclear Physics, University of Idaho, 1955-1959
Computer Programming, University of California, 1965-1969
Certificate in Linear Programming, Control Data Corp., 1971

Professional Experience:

Date	Position	Institution
1949-1951	Asst. to Dir.	Univ. Colorado Museum
1951-1952	Curator, Zool.	Univ. Nebraska State Museum
1951-1952	Instructor	Univ. Nebraska
1954-1955	Instructor	Univ. Utah
1955-1959	Chief, Ecol.	AEC Nat. Reactor Testing Sta., Idaho Falls, Id.
1958	Asst. Prof.	Michigan State Univ.
1959-1969	Res. Ecol.	Univ. California Lab. Nucl. Med. & Radiat. Biol.
1969-	Prof. Biol.	Colorado State Univ.

Professional and Honorary Societies:

Sigma Xi
Laboratory of Ornithology, Cornell Univ.
Ecological Society of America
AAAS Fellow
Cooper Ornithological Society
American Ornithologists' Union

Major Interests:

Ecosystem analysis
Computer modeling and simulation
Population dynamics

Current Professional Activities:

Research: IBP-Grassland Biome Field Studies Director

Publications, Technical Reports:

French, N. R. 1951. Duck Hawks nesting in Colorado. Condor 53:54.

French, N. R. 1954. Notes on breeding activities and on gular sacs in the Pine Grosbeak. Condor 56:83-85.

- French, N. R. 1955. Foraging behavior and predation by the Clark Nutcracker. *Condor* 57:61-62.
- French, N. R. and L. Van Middlesworth. 1958. Biological monitoring of recent air-borne fission products. II Int. Conf. on Peaceful Uses of Atomic Energy Proc. 18:516-518.
- French, N. R. 1959. Distribution and migration of the Black Rosy Finch. *Condor* 61:18-29.
- French, N. R. 1959. Life history of the Black Rosy Finch. *Auk* 76:159-180.
- French, N. R. and R. W. Hodges. 1959. Torpidity in cave-roosting hummingbirds. *Condor* 61:223.
- French, N. R. 1959. Iodine metabolism wild jack rabbits, p. 113 to 121. In Oklahoma conference-radioisotopes in agriculture. U. S. Atomic Energy Comm. Rep. TID 7578.
- French, N. R. 1960. Strontium-90 in Ecuador. *Science* 131:1889-1890.
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- French, N. R. 1963. Fallout and natural populations. I Int. Conf. on Wildlife Dis. Proc. 152-156.
- French, N. R. 1963. The occurrence, effect and utilization of specific isotopes in the environment: review and discussion of barium, p. 557 to 569. In V. Schultz and A. W. Klement, Jr. [ed.] *Radioecology*. Reinhold Publ. Corp., New York.
- French, N. R. and K. H. Larson. 1963. Environmental pathways of a radioactive iodine from nuclear test in arid regions, p. 77 to 81. In V. Schultz and A. W. Klement, Jr. [ed.] *Radioecology*. Reinhold Publ. Corp., New York.
- French, N. R. and H. Bissell. 1963. Strontium-90 in California deer. *Ecol. Soc. Amer. Bull.* 44:46. (Abstr.)
- French, N. R. 1963. The source of ingested radioactivity in desert rodents. *Ecol. Soc. Amer. Bull.* 44:74.
- French, N. R. 1963. Analysis of reproduction in the black-tailed jack rabbit. XVI Int. Congr. of Zool. Proc. 1:258.
- French, N. R. 1964. Description of a study of ecological effects on a desert area from chronic exposure to low level ionizing radiation. U. S. Atomic Energy Comm. Rep., UCLA 12-532. 27 p.
- French, N. R. 1964. A radiation facility for ecological studies at the AEC Nevada Test Site. *Ecol. Soc. Amer. Bull.* 45:79-80.
- French, N. R. 1964. Analysis of dispersal in desert rodents. *Ecol. Soc. Amer. Bull.* 45:115.

- French, N. R., R. McBride, and J. Datmer. 1965. Fertility and population density in the black-tailed jack rabbit. *J. Wildl. Manage.* 28:14-26.
- French, N. R. 1965. Radiation and animal populations. *Health Physics* 11: 1157-1568.
- French, N. R., P. Hayden, and T. Tagami. 1965. The source of ingested radioactivity in desert rodents. *Health Physics* 11:637-645.
- French, N. R. and J. B. French. 1965. Rosy Finches of the High Rockies, p. 422 to 432. In O. S. Pettingill, Jr. [ed.] *The bird watcher's America*. McGraw Hill.
- French, N. R., B. G. Maza, and A. P. Aschwanden. 1965. Duration of life in confined populations of desert rodents. *Ecol. Soc. Amer. Bull* 46:40-41.
- French, N. R. 1965. Mortality and fertility in a desert population of pocket mice. *Ecol. Soc. Amer. Bull.* 46:122.
- French, N. R., B. G. Maza, and A. P. Aschwanden. 1966. Periodicity of desert rodent activity. *Science* 154:1194-1195.
- French, N. R. 1966. A FORTRAN IV program for evaluation of thyroidal assimilation of radioiodine. U. S. Atomic Energy Comm. Rep., UCLA 12-592. 15 p.
- French, N. R. 1966. Irradiated desert rodent populations, p. 22. In G. A. Sacher [ed.] *Radiation effects on natural populations*. Argonne Nat. Lab.
- French, N. R., B. G. Maza, and A. P. Aschwanden. 1966. Life spans of heteromyid rodents in the Mojave Desert. *Ecol. Soc. Amer. Bull.* 47:172.
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- Lucas, A. C. and N. R. French. 1967. A miniature thermoluminescent dosimeter and its application to radioecology, p. 402-411. In F. H. Attix [ed.] *Luminescence Dosimetry*. AEC Sympos. Ser. 8.
- French, N. R. 1967. Comparison of radioisotope assimilation by granivorous and herbivorous mammals, p. 665-673. In B. Aberg and F. P. Hungate [ed.] *Radioecological concentration processes*. Pergamon Press.
- French, N. R. and H. D. Bissell. 1968. Strontium-90 in California mule deer. *Health Physics* 14:489-494.
- French, N. R., T. Y. Tagami, and P. Hayden. 1968. Dispersal in a population of desert rodents. *J. Mammal.* 49:272-280.
- French, N. R. 1968. *Leucosticte atrata* Ridgway, Black Rosy Finch, p. 365-372. In Oliver L. Austin, Jr. [ed.] *Life histories of North American cardinals, grosbeaks, buntings, towhees, finches, sparrows, and allies*. Smithsonian Inst. Bull. 237.

- French, N. R. and H. W. Kaaz. 1968. The intrinsic rate of natural increase of irradiated *Peromyscus* in the laboratory. *Ecology* 49:1172-1179.
- French, N. R., B. G. Maza, and H. W. Kaaz. 1969. Mortality rates in irradiated rodent populations, 46 to 52. In D. J. Nelson and F. C. Evans [ed.] Symposium on radioecology. U. S. Atomic Energy Comm. Pub. CONF. 670503.
- French, N. R. 1969. Radiation sensitivity and rodent species. *Nature* 222: 1003-1004.
- French, N. R. 1970. Chronic low-level gamma irradiation of a desert ecosystem for five years. pp. 1151-1164. In A. Grauby [Ed.] Actes du Symposium International of Radioecologie. Centre d'Etudes Nuclaires de Cadarache.
- French, N. R. 1971. Simulation of dispersal in desert rodent. In G. P. Patil, E. C. Pielou, and W. E. Waters [Eds.] Statistical Ecology, Vol. 3: Many species populations, ecosystems and systems analysis. Pennsylvania State University Press.
- *French, N. R. 1971. Small mammal studies in the U.S. IBP Grassland Biome Ann. Zool. Fennici. 8:48-53.
- *French, N. R. 1971. Comparison of life tables. Small Mammal Newsletter. 5(3) 120-127.
- *French, N. R., C. D. Jorgensen, M. H. Smith, and B. G. Maza. 1971. Comparison of some IBP population estimation methods for small mammals. Special Report, Office of the Chairman, USNC/IBP. 25 p.
- *French, N. R., C. H. Lamaoureux, H. Lieth, J. A. MacMahon, W. A. McKee, D. Parsons, F. Stearns, P. Webber, and D. Zobel. 1972. Report of the US/IBP Phenology Committee. Environmental Programs Coordinating Office, U.S. Component of the International Biological Program. 54 p.
- Maza, B. G., N. R. French, and A. P. Aschwanden. 1973. Home range dynamics in a population of heteromyid rodents. *J. Mammal.* 54(2) (in press).
- *French, N. R., and R. H. Sauer. 1973. Phenology studies and modelling in grasslands. In H. Lieth [Ed.] Phenology and seasonality modelling. Springer-Verlag (in press).
- *French, N. R. 1973. Making grasslands computable. In N. Calder [Ed.] Nature in the round: A guide to environmental science. Weidenfeld & Nicolson, Ltd. (in press).
- French, N. R. 1973. Animal ecology in the USSR. *Ecology* 54 (in press) (review).
- French, N. R. 1973. Activity patterns of a desert rodent. In Prakash, I., and P. K. Ghosh [Eds.] Rodents in desert environments. W. Junk, The Hague (in press).

Name: James H. Gibson

Born: 1930

Academic Training:

Degree	Year	Institution	Major
B.S.	1952	West Virginia University	Chemistry
Ph.D.	1957	Cornell University	Analytical Chemistry

Professional Experience:

Date	Position	Institution
1957-60	Analytical Chemist	Eastman Kodak Company
1960-61	Postdoctoral	Cornell University
1961-63	Chief, Chemical Division	Dugway Proving Ground, Chemical Corp
1963-69	Associate Professor, Chemistry	Colorado State University
1969-71	Manager, Office Divisional Activities	American Chemical Society
1971-	Director of Administration and Services	Grassland Biome, IBP
	Associate Professor of Chemistry	Colorado State University

Major Interests:

Analytical chemistry - methods development, and administration (technical)

Professional and Honorary Societies:

American Chemical Society
American Association for the Advancement of Science
Phi Beta Kappa
Society for Applied Spectroscopy

Publications, Technical Reports:

Gibson, J. H., W. E. Grossman and W. D. Cook. 1963. Excitation processes in flame spectroscopy. Anal. Chem. 35:266.

Gibson, J. H., W. E. Grossman and W. D. Cook. 1962. The use of continuous sources in atomic absorption spectroscopy. Anal. Chem. (Feigl Anniv. Symp., Proc.). Elsevier.

Wilkinson, O. E. and J. H. Gibson. 1966. A new technique for coating and packing glass bead columns for gas chromatography. Anal. Chem. 38:1972.

Gibson, J. H. and J. H. Runnels. 1966. Low wattage microwave excited plasmas as a spectral source for metals analysis. Midwest Regional ACS Meeting, Lawrence, Kansas. Paper No. 125.

- Gibson, J. H. and J. H. Runnels. 1966. Characteristics of low wattage excited plasmas for metals analysis. Soc. Appl. Spectroscopy, Rocky Mountain Conf., August 8-9, Denver, Colorado.
- Runnels, J. H. and J. H. Gibson. 1967. Characteristics of low wattage microwave induced argon plasmas in metals excitation. Anal. Chem. 39:1398.
- Taylor, H. E., R. K. Skogerboe and J. H. Gibson. 1970. Determination of trace impurities in argon by microwave induced excitation. Anal. Chem. 42:876.
- Taylor, H. E., R. K. Skogerboe and J. H. Gibson. 1970. Trace sulfur determination by atomic emission and atomic absorption techniques. Anal. Chem. 42:1569.

Name: Richard Orrie Gilbert

Born: 1941

Academic Training:

Degree	Year	Institution	Major
B.S.	1963	Ferris State College	Biology
M.S.	1965	Kansas State University	Statistics
Ph.D.	1969	University of Washington	Biostatistics

Professional Experience:

Date	Position	Institution
1969-	Senior Research Scientist	Battelle Memorial Institute Pacific Northwest Laboratory

Professional and Honorary Societies:

Biometrics Society
American Statistical Association
Sigma Xi

Major Interests:

Application of statistics to ecosystem problems
How to sample ecosystems
Problems associated with mark-recapture field experiments
Food-chain kinetics
Sampling environment for contaminants (radioisotopes, DDT, etc.)

Publications, Technical Reports:

O'Farrell, T. P., J. O. Hedlund, R. A. Gies, R. J. Olson, and R. O. Gilbert. 1971. Small mammal studies on the ALE Reserve, 1971. Battelle Memorial Institute, Pacific Northwest Laboratories, Richland, WA.

Rickard, W. H., R. O. Gilbert and J. F. Cline. 1971. Vegetational studies on the ALE Reserve, 1971. Battelle Memorial Institute, Pacific Northwest Laboratories, Richland, WA.

Rickard, W. H., W. T. Hinds and R. O. Gilbert. 1971. Environmental and biological observations on contrasting slopes of small earth mounds. Northwest Sci. 45, No. 1.

Gilbert, R. O. 1972. A Monte Carlo study of analysis of variance and competing rank tests for Scheffe's mixed model. J. Amer. Statistical Assoc. No. 67.

Gilbert, R. O. and R. J. Olson. 1972. Approximations of the variance of double sampling at the Cottonwood Site. Battelle Memorial Institute Pacific Northwest Laboratories Report, Richland, WA.

- Eberhardt, L. L. and R. O. Gilbert. 1972. Statistical analyses of soil plutonium studies, Nevada Test Site. Battelle Memorial Institute, Pacific Northwest Laboratories Report No. B-217, Richland, WA.
- O'Farrell, T. P., J. O. Hedlund, T. J. Olson, and R. O. Gilbert. 1972. Effects of ionizing radiation on survival, longevity and reproduction in free-ranging pocket mice, *Perognathus parvas*, during the breeding season. Science 179:289-291.
- Gilbert, R. O. An evaluation of four pseudo-random number generators. Battelle Memorial Institute, Pacific Northwest Laboratories Report. (In press).
- Eberhardt, L. L. and R. O. Gilbert. Gamma and lognormal distributions as models in studying food-chain kinetics. Battelle Memorial Institute. Pacific Northwest Laboratories Report. (In preparation).

Name: Władysław Grodzinski (Ladd)

Born: 1934

Academic Training:

Degree	Year	Institution	Major
M.S.	1956	Jagiellonian University Krakow, Poland	Biology (Zoology)
Ph.D.	1962	Jagiellonian University	Natural Sciences (Ecology)
Dr. hab. (Docent degree)	1971	Jagiellonian University	Ecology and Animal Physiology

Special Training:

1962-63 Postdoctoral fellowship, Rockefeller Foundation
 Department of Zoology, University of Chicago (Dr. Thomas Park)
 Institute of Arctic Biology, University of Alaska
 (Drs. Laurence Irving, Peter R. Morrison)

Professional Experience:

Date	Position	Institution
1957-62	Assistant, senior assistant	Department of Animal Genetics and Organic Evolution, Jagiellonian University
1964-69	Adjunct	
1970-71	Associate Professor	Jagiellonian University
	Head, Ecological Lab.	Jagiellonian University
1972-	Associate Professor (Docent)	Jagiellonian University
	Head, Department of Animal Ecology	ul. Krupnicza 50 30-060 Krakow, Poland

Professional and Honorary Societies:

Ecological Committee, Polish Academy of Sciences
 American Society of Mammalogists
 Ecological Society of America
 Polish Zoological Society

Major Interests:

Ecology of productivity
 Bioenergetics and ecological-physiology of homeotherms
 Ecology of pollution

Current Professional Activities:

12/1/72 - 1/11/73 Natural Resource Ecology Laboratory, Colorado State
 University, Fort Collins, CO.
 1/12/73 - 5/31/73 Department of Zoology and Physiology, University of Wyoming,
 Laramie, WY. (Associate Visiting Professor).

Publications, Technical Reports:

- Grodzinski, W. 1960. The succession of small mammal communities on an overgrown clearing and landslide mountain in the Beskid Sredni, Western Carpathians. *Ekol. Pol. S.A.* 7, 4:83-143.
- Grodzinski, W. 1961. Metabolism rate and bioenergetics of small rodents from the deciduous forest. *Bull. Acad. Pol. Sci. Cl. II*, 9, 12:493-499.
- Grodzinski, W. 1962. Influence of food upon the diurnal activity of small rodents. *Proc. Int. Theriol. Symp.*, Prague. 134-140.
- Grodzinski, W. 1963. Seasonal changes in the circadian activity of small rodents. *Ekol. Pol. B.* 9, 1:3-17.
- Grodzinski, W. 1963. Can food control the numbers of small rodents in the deciduous forest. *Proc. XVI Int. Congr. Zoology*, Washington, D.C. 1:257.
- Park, T., D. B. Mertz, W. Grodzinski and T. Prus. 1965. Canibalistic predation in population of flour beetles. *Physiol. Zoology* 38, 3:289-321.
- *Grodzinski, W. 1966. Bioenergetics of small mammals from Alaskan taiga forest. *Lynx* 6:51-55.
- Grodzinski, W. 1966. Seasonal changes in the daily energy bud of small rodents. *Proc. IV Int. Biometeorological Congr.*, New Brunswick, N.J. 7:1-2.
- *Grodzinski, W., A. Gorecki, K. Janas and P. Migula. 1966. Effect of rodents on the primary productivity of alpine meadows in Bieszczady Mountains. *Acta theriol.* 11, 20:419-431.
- Grodzinski, W., Z. Pucek and L. Ryszkowski. 1966. Estimation of rodent numbers by means of prebaiting and intensive removal. *Acta theriol.* 11, 10:297-314.
- *Grodzinski, W. 1967. Productivity of small rodents in beech forest of the Ojcow National Park - preliminary information. *Studia Naturae S.A.* 1:205-211.
- *Grodzinski, W. and A. Gorecki. 1967. Daily energy budgets of small rodents. *In Secondary productivity of terrestrial ecosystems*, [ed.] K. Petrusewicz, PWN, Warszawa, Krakow. 1:295-314.
- *Grodzinski, W. and R. Z. Klekowski. [Ed.]. 1968. Methods of ecological bioenergetics. *Handbook of IBP Training Course in Bioenergetics*. Polish Acad. Sci., Warszawa, Krakow. 252 p.
- *Grodzinski, W. 1969. Two measures of metabolic rate in common voles, *Microtus arvalis* Pall. *In Energy metabolism of farm animals*, [Ed.] K. L. Blaxter, G. Thorbek and J. Kielanowski. Oriel Press Ltd., Newcastle upon Tyne, E.A.A.P. Publ. No. 12:399-400.

- *Grodzinski, W., B. Bobek, A. Drozd and A. Gorecki. 1970. Energy flow through small rodent populations in a beech forest. *In* Energy flow through small mammal populations, [Ed.] K. Petrusewicz and L. Ryszkowski, PWN, Warszawa. p. 291-298.
- *Grodzinski, W. and K. Sawicka-Kapusta. 1970. Energy values of tree-seeds eaten by small mammals. *Oikos* 21, 1:52-58.
- *Hansson, L. and W. Grodzinski. 1970. Bioenergetic parameters of field vole *Microtus agrestis* L. *Oikos* 21 1:76-82
- Migula, P., W. Grodzinski, A. Jasinski and B. Musialek. 1970. Vole and mouse plagues in South Eastern Poland in the years 1945-1967. *Acta theriol.* 15, 16:233-252.
- *Grodzinski, W. 1971. Energy flow through populations of small mammals in the Alaskan taiga forest. *Acta theriol.* 16,17:231-275.
- *Grodzinski, W. 1971. Food consumption of the small mammals in the Alaskan taiga forest. *Ann. Zool. Fennici* 8:133-136.
- *Drozd, A., A. Gorecki, W. Grodzinski and J. Pelikan. 1971. Bioenergetics of water voles *Arvicola terrestris* L. from South Moravia. *Ann. Zool. Fennici* 8:97-103.
- Grodzinski, W. 1972. Population of Polish ecologists. *Wiad. Ekol.* 18, 3:266-281.
- Grodzinski, W. and R. Z. Klekowski, [Ed]. 1973. *Methods of Ecological Bioenergetics*. Blackwell Pub. Co.

Name: Richard M. Hansen

Born: 1924

Academic Training:

Degree	Year	Institution	Major
B.S.	1950	University of Utah	Biology
M.S.	1951	University of Utah	Zoology
Ph.D.	1954	University of Utah	Zoology

Professional Experience:

Date	Position	Institution
1950-1951	Lab. Instructor	University of Utah
1951-1952	Research Fellow	Univ. Utah Research Foundation
1952-1954	Research Fellow	Nat. Inst. Health, USPHS
1954-	Grad. Faculty-Full Member	Colorado State University
1954-1955	Assistant Professor	Colorado A & M College
1955-1959	Assistant Biologist	Colorado Agr. Exp. Sta.
1959-1968	Associate Range Biologist	Colorado Agr. Exp. Sta.
1968-	Range Biologist	Colorado Agr. Exp. Sta.
1968-	Prof. Range Biology	Colorado State University

Professional and Honorary Societies:

The Wildlife Society
American Society of Mammalogists
American Society for Range Management
Herpetologists League
Ecological Society of America
American Institute of Biological Sciences
Colorado-Wyoming Academy of Science
Utah Academy of Arts, Sciences and Letters
Society of Systematic Zoologists
The Wild Life Protection and Conservation Society of South Africa
Phi Kappa Phi
Sigma Xi
Phi Sigma
Phi Delta Kappa
Research Fellow, Univ. Utah Research Foundation 1951-1952
Research Fellow, National Institutes of Health, USPHS 1952-1954

Major Interests:

Mammalogy, herbivory

Current Professional Activities:

Teaching: Professor of Range Biology

Research: "Development of a computer simulation model to show herbivory at the Eastern Colorado Range Station"

Research: "Diet overlap, food preferences, and feeding competition of mule deer, elk, and cattle on the Forbes Trinchera Ranch in southern Colorado"

"Changes in the microscopic discernibility of plant fragments in herbivore feces and a method for obtaining correction factors for changes in relative discernibility"

"Diets, feeding preferences, and forage nutritive values for three Dall sheep herds on Kenai Peninsula, Alaska"

"Diets marmots on winter feeding sites of Dall sheep on three mountain ranges on Kenai Peninsula, Alaska"

"Diets of Caribou and Muskox on selected ranges in Alaska"

"Diets of extinct large herbivores from Grand Canyon, Arizona"

"Plant fragments discerned in buried profiles from Arctic Slope, Alaska"

"Impact of prairie dogs on shortgrass ranges"

"Diets of bighorn sheep from 3 herds in Colorado"

Publications, Technical Reports:

Hansen, R. M. 1950. Sexual behavior in two male gopher snakes. *Herpetologica* 6:120.

Woodbury, A. M. and R. M. Hansen. 1950. A snake den in Tintic Mountains, Utah, *Herpetologica* 6:67-70.

Behle, W. H. and R. M. Hansen. 1951. Notes on the short-tailed weasel in Utah. *Jour. Mammal.* 32:226-227.

Hansen, R. M. 1951. Systematic comparison of the mammals of Mount Nebo and the Deep Creek Mountains, Utah. (Unpublished Master's Thesis)

Hansen, R. M. 1952. Notes on behavior of long-tailed weasel in Utah. *Jour. Mammal.* 33:492.

Hansen, R. M. 1953. Richardson ground squirrel in Utah. *Jour. Mammal.* 34:132.

Durrant, S. D. and R. M. Hansen. 1954. Taxonomy of the chickarees (*Tamiasciurus*) of Utah. *Jour. Mammal.* 35:87-95.

Durrant, S. D. and R. M. Hansen. 1954. A new rock squirrel from the Great Basin with critical comments on related subspecies. *Biol. Soc. Wash.* 67:263-272.

Durrant, S. D. and R. M. Hansen. 1954. Distribution patterns and phylogeny of some western ground squirrels. *Systematic Zoology.* 3:82-85.

Hansen, R. M. 1954. Belding ground squirrel north of Snake River in Idaho. *Jour. Mammal.* 35:587.

- Hansen, R. M. 1954. Ground squirrels (*Citellus*) of Utah. (Unpublished Doctor's Thesis).
- Hansen, R. M. 1954. Tolerances of some western snakes to cold. *Herpetologica* 10:200.
- Hansen, R. M. 1954. Molt patterns in ground squirrels. *Proc. Utah Acad. Arts Sci. & Letters* 31:57-60.
- Durrant, S. D. and R. M. Hansen. 1955. The taxonomic status of golden mantled ground squirrels in eastern Utah and northwestern Colorado. *Jour. Mammal.* 36:136-138.
- Hansen, R. M. 1955. Two new subspecies of antelope ground squirrels from Utah. *Jour. Mammal.* 36:273-277.
- Durrant, S. D., M. R. Lee, and R. M. Hansen. 1955. Additional records and extension of known ranges of mammals from Utah. *Univ. Kansas Publ., Mus. Nat. Hist.* 9:69-80.
- Hansen, R. M. 1955. What pocket gophers are costing you. *Cattle Guard*, Pages 13 and 27, November 1955.
- Hansen, R. M. 1955. Gopher research. *Colorado Rancher and Farmer*, page 17, December 1955.
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Hansen, R. M. and B. R. Cavender. 1973. Food intake and digestibility by prairie dogs under lab conditions. *Acta Theriologica* (in press).

Long, A., R. M. Hansen, and P. S. Martin. In review. Life and death of the shasta ground sloth. *Science*.

Name: John O. Harris

Born: 1916

Academic Training:

Degree	Year	Institution	Major
B.S.	1939	Kansas State University	Bacteriology
M.S.	1941	University of Hawaii	Bacteriology
Ph.D.	1943	Kansas State University	Bacteriology

Special Training:

Radioisotopes in Biology, Argonne National Laboratory, August 1948;
Underground Corrosion Short Course, University West Virginia, 1957.

Professional Experience:

Date	Position	Institution
1941	Instructor in bacteriology	Kansas State University
Present	Professor	Kansas State University
1958-63	Part-time consultant	Koppers Co., US Steel, Mobil Oil, Esso
July-Aug. 1969	Consultant	USAID--Andhra Pradesh India

Professional and Honorary Societies:

American Society of Microbiology	National Assoc. Corrosion Engineers
AAAS	Kansas Academy of Sciences
American Chemical Society	Sigma Xi
American Agronomy Society	Gamma Sigma Delta

Major Interests: Microbial ecology, decomposition of complex molecules,
N-fixation surfaces and microbial nutrient uptake.

Current Professional Activities:

Teaching: General Microbiology, Soil Microbiology, Microbiology, Nature.

Research: Decomposers

Publications, Technical Reports:

Harris, John O. 1944. Respiration of resting *Azotobacter* cells as affected by the respiratory menstroom. J. Bacteriol. 48:689-96.

Harris, John O. 1946. A study of the effect of growth substrate on the respiration of *Azotobacter*. J. Biol. Chem. 162:11-20.

Harris, John O. 1948. The respiration of *Salmonella* in the presence of agglutinating serum. J. Bacteriol. 56:271-275.

- Harris, John O. 1949. Conductivity studies of bacterial suspensions. J. Bacteriol. 57:67-71.
- Harris, John O. 1949. Combination of certain fluorane derivative dyes with bacterial cells at different hydrogen ion concentrations. Stain Technol. 24:217-221.
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- Harris, John O. 1968. Resorcinol as a selective inhibitor for the isolation of molds. Biol. du Sol 9:19-20.

Name: Larry Harris

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B.Sc.	1964	Iowa State University	Wildlife/Zoology
M.Sc.	1968	Michigan State University	Wildlife Ecology
Ph.D.	1970	Michigan State University	Ecology

Special Training:

Syracuse University, 1964 - Concentrated summer course in civil engineering, African Social Studies, Ecology, and Swahili
 Agricultural training and research institute, Tengeru, Tanzania - 6-week training course in Tropical Agriculture and Ecology
 U.S. IBP Grassland Biome - 1970-72 - Post doctoral fellow involved in eco-systems analysis and modelling, and consumer studies integration

Professional Experience:

Date	Position	Institution
1961-1964	Part-time technician	Iowa State University and U.S. Fish and Wildlife Service
1962-1963	NSF Undergraduate Research Fellow	Iowa State University
1963	Waterfowl technician	Texas Game and Fish Department
1964-1966	Game technician	Tanzania Game Division
1966-1967	Game Management Officer	Tanzania Game Division
1967-1968	Graduate Research Asst.	Michigan State University Museum
1968-1970	Graduate Teaching Asst.	Michigan State University Museum
1969	Teaching Assistant	Michigan State University Museum
1970	Graduate Research Asst.	Michigan State University
1970-1972	Post doctoral Fellow	U.S. IBP, Colorado State Univ.
1972-	Assistant Professor	University of Florida

Professional and Honorary Societies:

AAAS	American Society of Mammalogists
Sigma Xi	East African Wildlife Society
Ecological Society of America	Association for Tropical Biology
Wildlife Society	The British Ecological Society

Major Interests:

Terrestrial vertebrate ecology and the structural and functional relationships of communities and systems.

Current Professional Activities:

U.S. Forest Service Research Grant

Publications, Technical Reports:

- Harris, L. D. and T. Davis. 1963. Nesting cover preference of pheasants in Central Iowa. Paper presented to Iowa Acad. Sci. 8 p.
- Harris, L. D. 1964. GSB: the fallacies and facts. Iowa Agric. 64:8-10.
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- Harris, L. D. 1967. Some preliminary conclusions and recommendations for the Mkomazi Game reserve based on a three-year ecological study. Submitted to the Tanzania Game Div., Dar Es Salaam. 12 p.
- Harris, L. D. 1967. Ecological observations of the Mkomazi Game Reserve with suggestions toward management and policy. Final Rep. submitted to the Tanzania Game Div., Dar Es Salaam. 90 p.
- Harris, L. D. 1968. Population dynamics of the African elephant in the Mkomazi Game Reserve, Tanzania, East Africa. M.S. Thesis. Michigan State Univ., East Lansing. 54 p.
- Harris, L. D. 1970. Some structural and functional attributes of a semi-arid East African ecosystem. Ph.D. Diss. Michigan State Univ., East Lansing. 220 p.
- Harris, L. D. 1971. Some structural relationships of a semi-arid East African herbivore community. Paper presented at S.W. and Rocky Mountain Div. Amer. Assoc. Adv. Sci., Tempe, Arizona. Abstract publ. in Bull., paper to be submitted to Amer. Natur.
- Harris, L. D. 1971. A precis of small mammal studies and results in the Grassland Biome. Paper presented at Ann. Mtg. Amer. Inst. Biol. Sci., Fort Collins, Colorado. In N. R. French [ed.] Preliminary analysis of structure and function in grasslands. Sci. Ser. No. 10, Colorado State Univ., Fort Collins, p. 213-240.
- Harris, L. D. 1971. Savannas. In Man in the living environment. Report of the workshop on global ecological problems sponsored by the Institute of Ecology. Univ. Wisc. Press, Madison. 267 p.
- Harris, L. D. 1971. Production ecology - the interface of resource management and ecological theory. Lecture to U.S. Forest Service. Abstract In Ecosystem management shortcourse syllabus. U.S. Forest Service and Range Sci. Dep. Colorado State Univ., Fort Collins.
- Harris, L. D. 1971. Small herbivores and rangelands. Lecture to U.S. Forest Service. Abstract In op. cit.

- Harris, L. D. and G. Swartzman. 1971. A preliminary model for consumer predation. U.S. IBP Grassland Biome Tech. Rep. No. 199. Colorado State Univ., Fort Collins. 27 p.
- Bledsoe, L. J., R. C. Francis and L. D. Harris. 1971. Perspectives in dynamic systems ecology. Grant proposal submitted to Natl. Sci. Found. 25 p.
- Harris, L. D. 1972. Characteristics of a semi-arid East African ecosystem. Range Sci. Ser. No. 11, Colorado State Univ., Fort Collins. 86 p.
- Harris, L. D. 1972. The role of small consumers in the rangeland ecosystem. Range Sci. Rev. Audio Cassett 4(2).
- Harris, L. D. 1972. Contributor to: the use of optimization techniques in ecosystem management. Compiled and edited by G. Swartzman. U.S. IBP Grassland Biome Tech. Rep. No. 143. Colorado State Univ., Fort Collins. 164 p.
- Harris, L. D. 1972. Some structural and functional attributes of a semi-arid East African ecosystem. Paper presented at Ecol. Soc. Amer. section AAAS Washington. Abstr. publ. in Bull. Ecol. Soc. Amer. 53 (4):9.
- Harris, L. D. and R. C. Francis. 1972. AFCØNS, a dynamic simulation model of an interactive herbivore community. U.S. IBP Grassland Biome Tech. Rep. No. 158. Colorado State Univ., Fort Collins. 88 p.
- Harris, L. D. and S. A. Marks. 1972. An appraisal of African game conservation. In Proc. Amer. Assoc. Adv. Sci. Symp. The Environment and Intl. Development.
- Harris, L. D. and L. Paur. 1972. A quantitative food web analysis of a shortgrass community. U.S. IBP Grassland Biome Tech. Rep. No. 154. Colorado State Univ., Fort Collins. 22 p.
- Cringan, A. and L. D. Harris [ed.]. 1972. A survey of predation and predator-prey relations. Papers from a graduate seminar in Wildlife Biology. Dep. of Fish. and Wildl. Biol., Colorado State Univ., Fort Collins.
- Innis, G. and L. D. Harris. 1972. An economic model of brush control. J. Range Mgmt. Rejected as untimely.
- Harris, L. D. 1973. The future of hunting in Florida. Paper presented to Florida Game Bird Conf., Gainesville, Florida. (manuscript to be submitted for publication).
- Harris, L. D. 1973. Contributor to C.I.A.P. Monograph Workshop V, Biological impacts of climatic change. Gainesville, Florida. March.
- Harris, L. D. 1973. Contributor to T.I.E. Workshop on Tropical Ecology. Turrisalba, Costa Rica. March, p. 25-31.

Name: Keneth Paul Haydock

Born: 1927

Academic Training:

Degree	Year	Institution	Major
B.S. (Hons)	1950	University of Western Australia	Mathematics

Professional Experience:

Date	Position	Institution
1954- Present	Principal Research Scientist	Commonwealth Scientific and Industrial Research Organization (CSIRO) Division of Mathematical Statistics

Professional and Honorary Societies:

Biometric Society

Major Interests:

Design of Experiments
Analysis of Variance

Current Professional Activities:

Consultant Biometrician

Publications, Technical Reports:

Coaldrake, J. E. and K. P. Haydock. 1958. Soil phosphate and vegetal pattern in some natural communities of southeastern Queensland, Australia. *Ecology* 39:1-5.

Webb, L. J., J. G. Tracey, and K. P. Haydock. 1961. Toxicity of *Eremophila mitchellii* Benth. leaves in relation to the establishment of adjacent herbs. *Aust. J. Sci.* 24:244-245.

Stone, B. F. and K. P. Haydock. 1962. Method for measuring the acaricide susceptibility of the cattle tick *Boophilus microplus* (Can.) Bull. Ent. Res. 53:563-578.

Little, I. P., K. P. Haydock and R. Reeve. 1962. Correlation of Walkley-Black organic carbon with the value obtained by total combustion in Queensland soils. Divl. Rep. Div. Soils C.S.I.R.O. Aust. No. 3/62.

- Beckwith, R. A., K. P. Haydock, I. P. Little and R. Reeve. 1962. Extraction of aluminum, silica and phosphorus from some Queensland soils by 0.01 N sulphuric acid. I. Levels of extractable aluminum, silica and phosphorus in surface samples of some great soil groups. II. The variability of extractable aluminum, silica and phosphorus within some soil profiles. Divl. Rep. Div. Soils C.S.I.R.O. Aust. No. 2/62.
- Cannon, J. R., Nanette H. Corbett, K. P. Haydock, J. G. Tracey and L. J. Webb. 1962. Investigation of the effect of the dehydroangustione present in the leaf litter of *Backhousia angustifolia* on the germination of *Araucaria cunninghamii* - an experimental approach to a problem in rain-forest ecology. Aust. J. Bot. 10:119-128.
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- Little, D. A., P. J. Robinson, M. J. Playne and K. P. Haydock. 1971. Factors affecting the blood inorganic phosphorus determinations in cattle. Aust. Vet. J. 47:153-156.

Williams, W. T., K. P. Haydock, L. A. Edye and J. B. Ritson. 1971.
Analysis of a fertility trial with Droughtmaster cows. Aust. J.
Agric. Res. 22:979-992.

Wielgolaski, F. E., K. P. Haydock and D. J. Connor. 1972. A grazing
lands plant-decomposition, carbon-mineral simulation model. U.S.
IBP Grassland Biome Tech. Rep. No. 203. Colorado State Univ.,
Fort Collins. 75 p.

Baker and K. P. Haydock. 1973. A study of the interaction of cold stress,
age and phosphorus nutrition on the development of *Lotononis bainesii*.
Aust. J. Biol. Sci. 26:87.

Name: Carlton H. Herbel

Born: 1927

Academic Training:

Degree	Year	Institution	Major
B.S.	1949	Texas A & I University	General Agriculture
M.S.	1954	Kansas State University	Range Management
Ph.D.	1956	Kansas State University	Range Management

Special Training:

March 1962, ARS Supervisory Development Program
 September 1962, ARS Workshop on Sampling Methods
 January 1969, Physiological aspects of crop yield
 May 1969, Grass biology and utilization
 June 1969, Modeling the Jornada ecosystem

Professional Experience:

Date	Position	Institution
1949-1950	Assistant Agronomist	Southwest Foundation for Research & Education
1953-1956	Graduate Research Assistant	Kansas State University
1956	Agronomist	Southwest Foundation for Research & Education
1956-1972	Range Scientist	ARS, USDA
1972-	Research Leader	ARS, USDA

Professional and Honorary Societies:

Gamma Sigma Delta	Ecological Society of America (sustaining)
Sigma Xi	American Forage and Grassland Council
American Society of Agronomy	Society for Range Management
Crop Science Society of America	AAAS
Soil Science Society of America	National Wildlife Federation

Major Interests: Plant-soil-weather-animal relations; data synthesis; seeding arid rangelands; control of mesquite, creosotebush, and tarbush; range ecology; and grazing management.

Current Professional Activities:

Full-time research on the Jornada Experimental Range

Teaching: Adviser for graduate students

Research: Primary productivity of desert grassland and other studies as indicated under major interests.

Publications, Technical Reports:

- Herbel, Carlton H. 1950. Some typical practices of range improvements in Texas. Southwest Res. Inst. mimeo. 17 p.
- Herbel, Carlton H. 1955. Range conservation and season-long grazing. J. Range Manage. 8:204-205.
- Anderson, Kling L. and Carlton H. Herbel. 1955. Six years of differential grazing in the Flint Hills of Kansas. Abstr. in Agron. Abstr. p. 63. (Volunteer paper presented by Anderson at Davis).
- Herbel, Carlton H. 1956. Forage investigations at the San Antonio nursery. Southwest Foundation for Research and Education mimeo. 55 p.
- Herbel, Carlton H. 1956. Supplemental winter pastures for South Texas. Southwest Foundation for Research and Education, Report 15. 11 p.
- Herbel, Carlton H. 1958. The research program at the Jornada Experimental Range. Research Advisory Council, Rocky Mountain Forest and Range Experiment Station mimeo. (Invitational paper presented at Albuquerque).
- Herbel, Carlton H. 1958. Procedures for field evaluation of drought tolerance. Proceedings Western Grass Breeders 12th Work Planning Conf. (Presented volunteer paper at Tucson).
- Herbel, C. H., F. N. Ares, and J. O. Bridges. 1958. Hand-grubbing mesquite in the semidesert grassland. J. Range Manage. 11:267-270.
- Herbel, Carlton H. 1959. Soil factors affecting range forage. Proceedings 4th Annual Cattle Breeders School, New Mexico State University. (Presented invitational paper at Las Cruces).
- Herbel, Carlton H. and Kling L. Anderson. 1959. Response of true prairie vegetation on major Flint Hills range sites to grazing treatment. Ecol. Monogr. 29:171-186.
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- Herbel, Carlton H. 1965. Reseeding in the arid southwestern United States. Australian Arid-Zone Res. Conf., p. E-23 - E-24.
- Herbel, Carlton H. and Arnold B. Nelson. 1965. Performance of Hereford and Santa Gertrudis cattle on an arid range in southwestern United States. Australian Arid-Zone Res. Conf., p. F-19 - F-20.
- Buffington, Lee C. and Carlton H. Herbel. 1965. Vegetational changes on a semidesert grassland range from 1858 to 1963. Ecol. Monogr. 35:139-164.
- Herbel, Carlton H. 1966. Australian Arid Zone Research Conference. J. Range Manage. 19:161-162.
- Herbel, Carlton H. 1966. Brush control in New Mexico. Jornada Range mimeo. 12 p.
- Herbel, Carlton H. 1966. Mesquite (*Prosopis Juliflora* (Sw.) DC.). In Chemical control of range weeds. Interagency Report, USDA and USDI. U.S. Government Printing Office, Washington, D.C. p. 26.
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- Herbel, Carlton H. 1967. Creating a more favorable microenvironment for seeding southwestern ranges. Agron. Abst., p. 36.
- Herbel, Carlton H. 1967. Brush control research on the Jornada Experimental Range. Range Weed Research, Proc., p. 65-70. (I presented this invitational information on a tour of the Jornada).
- Herbel, Carlton H., Fred N. Ares, and Arnold B. Nelson. 1967. Grazing distribution patterns of Hereford and Santa Gertrudis cattle on a southern New Mexico range. J. Range Manage. 20:296-298.
- Nelson, Arnold B. and Carlton H. Herbel. 1967. Blood composition of range beef cows. Amer. Soc. Anim. Sci., Western Sect., Proc., 18:177-182.
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- Sosebee, Ronald E. and Carlton H. Herbel. 1967. Temperature and moisture effects on seedling emergence and initial growth of range plants. Agron. Abst., p. 40.
- Herbel, Carlton H. 1968. Drought effects on a southern New Mexico range and the nature of recovery. Amer. Soc. Range Manage., Abst., p. 56-57.
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- Kiesling, Herman E., Arnold B. Nelson, and Carlton H. Herbel. 1968. Tobosa grass utilization. Proceedings 29th Annual Feeders' Day, New Mexico State Univ., p. 13-14.
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- New Mexico Inter-Agency Range Committee. 1968. Improving pinyon-juniper ranges in New Mexico. Report No. 2. 23 p. (Herbel attended tour and helped prepare report).

- New Mexico Inter-Agency Range Committee. 1968. Cholla cactus control in New Mexico. Report No. 3. 18 p. (Herbel attended tour and helped prepare report).
- Herbel, Carlton H. and Ronald E. Sosebee. 1969. Moisture and temperature effects on emergence and initial growth of two range grasses. Agron. J. 61:628-631.
- Herbel, Carlton H. and Arnold B. Nelson. 1969. Grazing management on semidesert ranges in southern New Mexico. Abstract, Arid Lands in a Changing World, n.p.
- Herbel, Carlton H. and Arnold B. Nelson. 1969. Grazing management on semidesert ranges in southern New Mexico. Jornada Experimental Range Report No. 1. 13 p.
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- Gould, Walter L. and Carlton H. Herbel. 1969. Evaluation of herbicide treatments for the control of creosotebush (*Larrea tridentata*). Western Soc. Weed Sci., Research Progress Report, p. 26-27.
- Gould, Walter L. and Carlton H. Herbel. 1969. Herbicide evaluation studies for the control of tarbush (*Flourensia cernua*). Western Soc. Weed Sci., Research Progress Report, p. 27.
- Gould, Walter L. and Carlton H. Herbel. 1969. Evaluation of aerial treatments for the control of creosotebush (*Larrea tridentata*). Western Soc. Weed Sci., Research Progress Report, p. 27-28.
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- Kiesling, H. E., A. B. Nelson, and C. H. Herbel. 1969. Chemical composition of tobosa grass collected by hand-plucking and esophageal-fistulated steers. J. Range Manage. 22:155-159.
- Nelson, A. B., C. H. Herbel, and H. M. Jackson. 1969. Chemical composition of the diet of cows grazing on arid range. Amer. Soc. Anim. Sci., Western Sect., Proc., 20:355-360. (Nelson presented this volunteer paper). An abstract of this paper appeared in J. Anim. Sci. 28:868.
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- Herbel, C. H. and W. L. Gould. 1970. Control of mesquite, creosotebush, and tarbush on arid rangelands of the southwestern United States. *Int. Grassland Congr., Proc.* XI:38-41.
- Herbel, C. H. 1970. Seeding western rangelands. *Agron. Abstr.*, p. 78.
- Herbel, C. H., P. L. Dittberner, and T. S. Bickle. 1970. A quantitative ecology of the Jornada Experimental Range, p. 1-133-177. *In* R. G. Wright and G. M. Van Dyne [eds.] *Simulation and analysis of dynamics of a semi-desert ecosystem.* Range Sci. Dep. Sci. Ser. No. 6, Colorado State Univ., Fort Collins.
- Dwyer, Don D., Carlton H. Herbel, and Charles A. Davis. 1970. Range and forest resources of New Mexico. p. 10-11. *In* *Environment, people, and culture.* New Mexico State Univ.
- New Mexico Inter-Agency Range Committee. 1970. Control of shinnery oak, mesquite, and creosotebush in New Mexico. Report no. 4. 33 p. (A joint effort of the committee.)
- Gould, Walter L., and Carlton H. Herbel. 1971. The response of native grasses to mesquite control under a repeat spray treatment program. *Research Progress Report.* Wes. Soc. Weed Sci., p. 32.
- Herbel, Carlton H., and Leland H. Gile. 1971. Field moisture regimes of some arid-land soils in southern New Mexico. *Agron. Abst.*, p. 107.
- Herbel, Carlton H. 1971. A review of research related to development of grazing systems on native ranges of the Western United States. *Jornada Experimental Range Rep.* no. 3. 32 p. (reviewed in *Rangeman's News* 3(6): 1-3, (1971).
- Nelson, A. B., A. L. Neumann, C. H. Herbel, C. C. Yarbrough, E. E. Parker, and J. Whittenburg. 1971. Liquid and dry supplements for wintering range beef calves. *N. Mex. Agr. Exp. Sta. Res. Rep.* 214. 8 p.
- Gould, Walter L., and Carlton H. Herbel. 1971. Response of creosotebush to aerially applied herbicide treatments. *Weed Sci. Soc. of Amer. Abst.* No. 127.
- Herbel, Carlton H. 1972. Mechanical procedures for modifying the seedling environment, p. 369-381. *In* *Useful wildland shrubs, their ecology and utilization.* U.S. Dept. Agr. Gen. Tech. Rep. INT-1.

Herbel, Carlton H., and Leland H. Gile. 1973. Field moisture regimes of some arid-land soils in southern New Mexico. Soil Sci. Soc. of Amer. Special Publication. In press.

Name: Ellis W. Huddleston

Born: 1935

Academic Training:

Degree	Year	Institution	Major
B.S.	1956	Texas Technological College	Agronomy
M.S.	1958	Cornell University	Entomology
Ph.D.	1960	Cornell University	Entomology

Professional Experience:

Date	Position	Institution
1956-1960	Research Assistant	Cornell University
1960-1965	Asst. Prof. of Entomology	Texas Tech. College
1965-1966	Assoc. Prof. of Entomology	Texas Tech. College
1966-1967	Assoc. Prof. of Ent. (Visiting)	University of Hawaii
1967-1971	Assoc. Prof. of Entomology	Tex. Tech. College
1971-	Professor of Entomology	Texas Tech University

Major Interests:

Biological control of insects and noxious species; ecology of playa lakes.

Honors:

Spencer A. Wells Award for faculty member who has made the most valuable contribution to Texas Technological College during 1967-1968.

Professional and Honorary Societies:

Sigma Xi
Entomological Society of America
Hawaiian Entomological Society
Agricultural Sciences Advisory Committee
Organization for Tropical Studies

Publications:

Author or coauthor of 21 publications. Recent or pertinent publications are listed below:

Huddleston, E. W., D. Ashdown, C. R. Ward, and D. Morris. 1962. Multipurpose Modification of Playa Sinks. "Section on Biology" Project Number 29. Division of Water Supply and Pollution Control, U.S.P.H.S., First Annual Report. 1-123.

Huddleston, E. W., D. Ashdown, C. E. Forehand, C. R. Ward, and D. Morris. 1964. Multipurpose Modification of Playa Sinks, "Section on Biology," Project Number 29, Division of Water Supply and Pollution Control, U.S.P.H.S., Third Annual Report. 1-114.

Huddleston, E. W., D. Ashdown, C. E. Forehand, R. Schaefer, and D. Herzog. 1965. Effects of the 1964 High Plains Boll Weevil Control Program on Population Trends, of Non-Target Insects. Effects on the Environment of the 1964 Boll Weevil Diapause Control Program in the Texas High Plains, Plant Pest Control Division, U.S.D.A. 1-43.

- Huddleston, E. W., C. R. Ward, R. E. Howard, and L. G. Richardson. 1969. Some contributions to the study of grasslands insect populations. U.S. IBP Grassland Biome Tech. Rep. No. 48. 9 p.
- Huddleston, E. W. 1970. Comprehensive Network Site description, Pantex. U.S. IBP Grassland Biome Tech. Rep. No. 45. 12 p.
- Huddleston, E. W., H. N. Howell, Jr., W. J. Fournier, C. W. O'Brien and C. R. Ward. 1970. Population trends of grassland insects on a mixed prairie. Entomol. Soc. Amer. - National Meeting, Miami, Florida.
- Fournier, W. J., H. N. Howell, Jr., E. W. Huddleston, C. R. Ward, and C. W. O'Brien. 1971. Effect of first killing frost on rangeland insect populations. Entomol. Soc. Amer. - Southwestern Branch Meeting, El Paso, Texas.
- Howell, H. N., Jr., W. J. Fournier, E. W. Huddleston, C. R. Ward, and C. W. O'Brien. 1971. Insect populations on a southern mixed prairie. Entomol. Soc. Amer. - Southwestern Branch Meeting, El Paso, Texas.

Name: Gary K. Hulett

Born: 1936

Academic Training:

Degree	Year	Institution	Major
B.S.	1958	Fort Hays Kansas State College	Botany
M.S.	1959	Kansas State College	Botany
Ph.D.	1962	University of Saskatchewan	Plant Ecology

Professional Experience:

Date	Position	Institution
1956-1959	Research Assistant	Kansas State College
1959-1962	Research Assistant	Saskatchewan Research Council
1962-1963	Assistant Professor of Biology	University of North Dakota
1963-1965	Assistant Professor of Botany	Fort Hays Kansas State College
1965-	Associate Professor of Botany	Fort Hays Kansas State College

Professional and Honorary Societies:

American Society of Range Management
 Ecological Society of America
 Association of Southwestern Naturalists
 American Institute of Biological Science

Major Interests:

Ecosystem ecology (grasslands), primary productivity, organic matter transfer rates, root production.

Publications, Technical Reports:

Author or coauthor of 7 publications. Recent or pertinent publications are listed below:

Redman, R. E. and G. Hulett. 1964. Factors affecting the distribution of certain species of compositae on an eastern North Dakota prairie. North Dakota Acad. Sci. Proc. 18:10-21.

Hulett, G. K., R. T. Coupland and R. L. Dix. 1966. The vegetation of dune sand areas within the grassland region of Saskatchewan. Can. J. Bot. 44:1307-1331.

Goodman, C. L., G. W. Tomanek and G. K. Hulett. 1967. A survey of phreatophytes at Cedar Bluffs Reservoir. Kans. Acad. Sci. Trans. 70:451-463.

Young, S. Emory and G. K. Hulett. 1968. Emergence and growth of six Mixed Prairie grasses under the influence of *Yucca glauca* extract. Kans. Acad. Sci. Trans. 71:136-144.

Hulett, G. K. and G. W. Tomanek. 1969. Remnant prairies on the shallow limy range site in north central Kansas. J. Range Manage. 22:19-23.

Hulett, G. K., G. L. Van Amburg and G. W. Tomanek. 1969. The effect of soil depth on cover and production of a shallow limy range site in Western Kansas. J. Range Manage.

Hulett, G. K., C. D. Sloan and G. W. Tomanek. 1969. The vegetation of remnant grasslands in the loessial region of northwestern Kansas and southwestern Nebraska. Southwestern Natur.

Name: William H. Hunt

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B.S.	1965	Texas Tech University	Zoology
M.S.	1968	University of Hawaii	Genetics
Ph.D.	1971	University of Texas at Austin	Zoology

Professional Experience:

Date	Position	Institution
1965	Graduate Research Assistant	Texas Tech University
1965-68	N.I.H. Genetics Trainee	University of Hawaii
1968-69	University Fellowship	University of Texas at Austin
1969-71	Graduate Research Assistant	University of Texas
1972-73	Postdoctoral Fellowship	Colorado State University

Professional and Honorary Societies:

American Association for the Advancement of Science
American Institute of Biological Sciences
Ecological Society of America
Society for the Study of Evolution
Phi Kappa Phi

Major Interests:

Population Biology
Evolutionary Biology

Current Professional Activities:

Whole ecosystem simulation modelling

Publications, Technical Reports:

Hunt, H. W. and N. E. Morton. 1969. Quantitative hemagglutination in the ABO system. Amer. J. Human Genet. 21(1):84-98, 21(6):632-634.

Anway, J. C., E. G. Brittain, H. W. Hunt, G. S. Innis, W. J. Parton, C. F. Rodell and R. H. Sauer. 1972. ELM: Version 1.0. U.S. IBP Grassland Biome Tech. Rep. No. 156, Colorado State Univ., Fort Collins. 285 p.

Name: H. L. Hutcheson, Jr.

Born: 1937

Academic Training:

Degree	Year	Institution	Major
B.S.	1960	Oklahoma State University	Natural Science
M.S.	1962	Oklahoma State University	Plant Ecology
Ph.D.	1965	University of Oklahoma	Plant Ecology

Professional Experience:

Date	Position	Institution
1960-1962	Teaching Assistant	Oklahoma State Univ.
1962-1965	Teaching Assistant	Univ. Oklahoma
1965	NSF Postdoctoral Grant	Univ. Oklahoma Biol. Sta. (Summer)
1965-1969	Assistant Professor of Botany	South Dakota State Univ.
1966	Visiting Assistant Professor	Univ. Oklahoma (Summer)
	Summer Ecology Institute	
1969-	Assoc. Prof. of Botany-Biology	South Dakota State Univ.

Professional and Honorary Societies:

Ecological Society of America	South Dakota Academy of Science
AIBS	Oklahoma Academy of Science
American Society of Range Management	American Association of Univ. Professors
Sigma Xi	South Dakota Biology Teachers Association
Southwestern Association of Naturalists	Organization of Inland Biological Field Sta.

Major Interests:

Plant ecology and geo-botany

Publications, Technical Reports:

- Dwyer, Don D. and H. L. Hutcheson. 1965. Growth rate of four range grasses in north-central Oklahoma. Oklahoma Agr. Exp. Sta. Bull. B-638. 15 p.
- Hutcheson, H. L. 1965. Vegetation in relation to slope exposure and geology in the Arbuckle Mountains. In Report of research conducted under NSF Postdoctoral Grant EB3462. 56 p.
- Hutcheson, H. L. and R. J. Baalman. 1965. Buffalo, fire and grass in the Wichita Mountains. In Report of research conducted under NSF Postdoctoral Grant EB3462. 12 p.

Name: Donald N. Hyder

Born: 1921

Academic Training:

Degree	Year	Institution
B.S.	1947	University of Idaho
M.S.	1949	Utah State University
Ph.D.	1961	Oregon State University

Professional Experience:

Date	Position	Institution
1941	Forest Guard	U. S. Forest Serv., Idaho
1942	Field Assistant	Grazing Service, Idaho
1943-1944	Aviation Cadet	U. S. A. Air Force
1944-1946	Pilot	U. S. A. Air Force
1947-1949	Teaching Assistant	Utah State Agri. College
1949-1956	Research Range Conserv.	BLM, Oregon
1956-1961	Research Agronomist	ARS, Oregon
1956-1960	Assistant Professor	Oregon State University
1960-1961	Associate Professor	Oregon State University
1961-	Range Scientist	ARS, Colorado State Univ.
	Teaching: Grad. Faculty	

Professional and Honorary Societies:

Sigma Xi	Crop Science Society of America
Phi Kappa Phi	American Society of Agronomy
Xi Sigma Pi	Weed Society of America
Gamma Sigma Delta	American Society of Range Management

Publications, Technical Reports:

Hyder, D. N. and W. A. Sawyer. 1951. Rotation-deferred grazing as compared to season long grazing on sagebrush-bunchgrass ranges in Oregon. J. Range Manage. 4:30-34.

Hyder, D. N. 1952. Rotation-deferred grazing at Squaw Butte. Oregon Cattleman 1:18-21.

Hyder, D. N. 1953. Grazing capacity as related to range condition. J. Forest. 51:206.

Hyder, D. N. 1953. Controlling big sagebrush with growth regulators. J. Range Manage. 6:109-116.

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- Hyder, D. N. and F. A. Sneva. 1954. A method for rating the success of range seeding. *J. Range Manage.* 7:89-90.
- Hyder, D. N. and F. A. Sneva. 1955. Effect of form and rate of active ingredient, spraying season, solution volume, and type of solvent on mortality of big sagebrush, *Artemisia tridentata*. *Oregon Agr. Exp. Sta. Tech. Bull.* 35. 16 p.
- Hyder, D. N., F. A. Sneva, and W. A. Sawyer. 1955. Soil firming may improve range seeding operations. *J. Range Manage.* 8:159-163.
- Hyder, D. N. and F. A. Sneva. 1956. Seed- and plant-soil relations as affected by seedbed firmness on a sandy loam range land soil. *Soil Sci. Soc. Amer. Proc.* 20:416-419.
- Hyder, D. N. and F. A. Sneva. 1956. Herbage response to sagebrush spraying. *J. Range Manage.* 9:34-38.
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- Cooper, C. S., D. N. Hyder, R. G. Peterson, and F. A. Sneva. 1957. The constituent differential method of estimating species composition in mixed hay. *Agron. J.* 49:190-193.
- Sneva, F. A., D. N. Hyder, and C. S. Cooper. 1958. The influence of ammonium nitrate on the growth and yield of crested wheatgrass on the Oregon high desert. *Agron. J.* 50:40-44.
- Cooper, C. S. and D. N. Hyder. 1958. Adaptability and yield of eleven grasses grown on the Oregon high desert. *J. Range Manage.* 11:235-237.
- Hyder, D. N., F. A. Sneva, and W. A. Sawyer. 1958. Sagebrush or grass. *Oregon Agr. Exp. Sta. Circ.* 590. 11 p.
- Hyder, D. N., W. R. Furtick, and F. A. Sneva. 1958. Differences among butyl, ethyl, and isopropyl ester formulations of 2,4-D, 2,4,5-T, and MCPA in the control of big sagebrush. *Weeds* 6:194-197.
- Booster, D. E. and D. N. Hyder. 1958. The Oregon grass seeder. Paper presented at the annual meeting of the Interagency Range Reseeding Equipment Committee, Phoenix, Arizona, January 1958. mimeo.
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- Hyder, D. N. 1961. Growth characteristics of crested wheatgrass, *Agropyron desertorum* (Fisch.) Schult., in the big sagebrush-bluebunch wheatgrass province of southeastern Oregon. Ph.D. Thesis, Oregon State Univ. 158 p.
- Hyder, D. N. and F. A. Sneva. 1962. Chemical control of foothill deathcamas. J. Range Manage. 15:25-27.
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- Hyder, D. N., F. A. Sneva, and V. H. Freed. 1962. Susceptibility of big sagebrush and green rabbitbrush to 2,4-D as related to certain environmental, phenological, and physiological conditions. Weeds 10:288-295.
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- Hyder, D. N. and F. A. Sneva. 1963. Morphological and physiological factors affecting the grazing management of crested wheatgrass. Crop Sci. 3:267-271.
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- Hedrick, D. W., D. N. Hyder, and F. A. Sneva. 1964. Overstory-understory grass seedings on sagebrush-bunchgrass range. Oregon Agr. Exp. Sta. Tech. Bull. 80. 31 p.
- Sneva, F. A. and D. N. Hyder. 1965. Yield, yield-trend, and response to nitrogen of introduced grasses on the Oregon high desert. Oregon Agr. Exp. Sta. Spec. Rep. 195.
- Hyder, D. N., R. E. Bement, E. E. Remmenga, and C. Terwilliger, Jr. 1965. Frequency sampling of blue grama range. J. Range Manage. 18:90-93.
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- Hyder, D. N. 1969. Effects of N on grass morphology. Invitational paper presented at a workshop on the nitrogen cycle in semiarid grasslands, Bismarck, North Dakota, March 25-26.
- Hyder, D. N. 1969. The impact of domestic animals on the function and structure of grassland ecosystems, p. 243-260. In R. L. Dix and R. G. Beidleman [ed.] *The grassland ecosystem: a preliminary synthesis.* Range Sci. Dep. Sci. Ser. No. 2, Colorado State Univ. 437 p.
- Hyder, D. N. 1969. Defoliation in relation to vegetative growth. Invitational paper presented at a symposium on grass biology and utilization, Riverside, California, May 20-22. (In press).
- Wallace, J. D., K. L. Knox and D. N. Hyder. 1970. Energy and nitrogen value of sandhill range forage selected by cattle. *J. Anim. Sci.* 31:398-403.
- Hyder, D. N. 1970. The leaf replacement potential of grasses. 23rd Annu. Meeting, Amer. Soc. Range Manage., Denver, Colorado, p. 64. Abstr.
- Sims, P. L., D. N. Hyder, L. J. Ayuko and R. K. Lang'at. 1970. Developmental morphology of four warm-season grasses. 23rd Annu. Meeting, Amer. Soc. Range Manage., Denver, Colorado, p. 57. Abstr.
- Marlatt, W. E. and D. N. Hyder. 1970. Soil ridging for reduction of wind erosion from grass seedbeds. *J. Range Manage.* 23:169-173.
- Hyder, D. N. and R. E. Bement. 1970. Soil physical conditions after plowing and packing of ridges. *J. Range Manage.* 23:289-292.
- *Knox, K. L., A. Chappell, J. A. Gibbs, D. N. Hyder, and R. E. Bement. 1970. Sampling methods for water kinetics. *J. Dairy Sci.* 53:1279-1282.
- Hyder, D. N. 1970. Grazing management on range infested with Geyer larkspur. 5th Annu. Colorado Weed Control Conf., Proc., p. 36.
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- Hyder, D. N. 1971. Grass seedling morphology affects seeding success. Proc. Annu. Meeting, Amer. Soc. Range Manage., Reno, Nevada. p 25.
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- Hyder, D. N., A. C. Everson, and R. E. Bement. 1971. Seedling morphology and seedling failures with blue grama. *J. Range Manage.* 24:287-292.

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- Hyder, D. N. 1971. Species susceptibilities to 2,4-D on mixed-grass prairie. *Weed Sci.* 19:526-528.
- Hyder, D. N. and L. D. Sabatka. 1972. Geyer larkspur phenology and response to 2,4-D. *Weed Sci.* 20:31-33.
- Wallace, Joe D., D. N. Hyder, and K. L. Knox. 1972. Water metabolism in sheep fed forage rations differing in digestibility. *Am. J. Vet. Res.* 33:921-927.
- Wallace, Joe D., D. N. Hyder, and G. M. Van Dyne. 1972. Salivary contamination of forage selected by esophageal fistulated steers grazing sandhill grassland. *J. Range Manage.* 24:184-187.
- Hyder, D. N. and R. E. Bement. 1972. The status of seasons of grazing and rest in grazing management. Invitational paper. U.S.-Australia Range Science Workshop on Effects of Herbivores on Rangeland Ecosystems. Adelaide, Australia, April 10-19.
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- Hyder, D. N. 1972. Paraquat kills geyer larkspur. *J. Range Manage.* 25:460-464.
- Hyder, D. N. and R. E. Bement. 1972. Controlling red threeawn on abandoned cropland with ammonium nitrate. *J. Range Manage.* 25:443-446.
- Houston, Walter R., L. D. Sabatka, and D. N. Hyder. 1973. Nitrate-nitrogen accumulation in range plants after massive N fertilization on Shortgrass Plains. *J. Range Manage.* 26:54-57.
- Sims, Phillip L., Robert K. Lang'at, and D. N. Hyder. 1973. Developmental morphology of blue grama and sand bluestem. *J. Range Manage.* 26.

Name: George S. Innis

Born: 1937

Academic Training:

Degree	Year	Institution	Major
B.A.	1958	University of Texas	Mathematics
M.A.	1961	University of Texas	Mathematics
Ph.D.	1962	University of Texas	Mathematics

Professional Experience:

Date	Position	Institution
1962-63	Postdoctoral	Harvard University
1963-64	Assistant Professor	Rice University
1964-67	Special Research Associate Director, Scientific Computer Center	University of Texas
1964-67	Assistant Professor	University of Texas
1967 (3 mos)	Staff Member	Los Alamos Scientific Lab
5/68-9/68	Co-Director of Computer Services	Texas Tech College
9/68-4/70	Director of Computer Services	Texas Tech University
9/67-1/71	Associate Professor	Texas Tech University
1971-	Director of Systems Analysis Associate Professor of Math	Colorado State University

Professional and Honorary Societies:

Mathematical Association of America
American Mathematical Society
Society for Industrial and Applied Mathematics
Sigma Xi
Association for Computing Machinery

Major Interests:

Applications of mathematical (quantitative) techniques to biological and physical problems.

Publications, Technical Reports:

Horton, C. W. and G. S. Innis. 1960. The determination of farfield radiation patterns from nearfield measurements. U.S. Navy J. Underwater Acoustics 10:150-157.

Horton, C. W. and G. S. Innis. 1960. Nearfield and farfield measurements with source level determination for a nine element array of TR-11 transducers. DRL-A-172. 20 p.

- Horton, C. W. and G. S. Innis. 1960. On the determination of the radiation pattern of an emitter from nearfield data. DRL-A-177. 8 p.
- Horton, C. W. and G. S. Innis. 1961. The computation of farfield radiation patterns from measurements made near the source. DRL-A-189. 4 p.
- Innis, G. S. 1961. Solution forms for the scalar Helmholtz equation. DRL-A. 39 p.
- Horton, C. W. and G. S. Innis. 1961. The computation of farfield radiation patterns from measurements made near the source. J. Acoustical Soc. Amer. 33:877-880.
- Innis, G. S. 1964. Some reproducing kernels for the unit disk. Pacific J. Math. 14:177-186.
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- Innis, G. S., D. G. Olson, S. P. Pitt and C. S. Stradling. 1966. Automatic classification using active surface ship sonars: A synopsis. DRL-A-256. 57 p.
- Innis, G. S. and W. A. Matuska. 1966. Generation of a stationary Gaussian random process with a specified power spectral density function. DRL-A-258. 68 p.
- Innis, G. S. 1966. A processing technique for symmetric signals. DRL-A-269. 22 p.
- Innis, G. S. 1967. Shannon's theorem. DRL-A-284. 80 p.
- Innis, G. S. 1969. On the existence of binary sequences with prescribed properties. SIAM Rev. p. 621.
- Innis, George. 1971. An experimental undergraduate course in systems ecology. BioScience.
- Van Dyne, George, George Innis and Gordon Swartzman. 1971. Some analytical and operational approaches to developing dynamic models of ecological systems. Proc. of Institute of Environmental Sci.
- Innis, George. 1972. The second derivative and population modelling: Another view. Ecology.
- Gustafson, J. and G. Innis. 1971. Simcomp: A simulation compiler for biological modeling. Proc. of Summer Simulation Conference.
- Innis, G. 1972. Simulation of biological systems: some problems and progress. Proc. of Summer Simulation Conference.
- Innis, George. 1972. Modelling in the U.S. IBP Grassland Biome Study, Annals of Univ. of Abidjan, Ivory Coast, Africa.

Innis, George. 1972. Simulation of ill-defined systems: some problems and progress. Simulation.

Name: Donald A. Jameson

Born: 1929

Academic Training:

Degree	Year	Institution	Major
B.S.	1950	Colorado State University	Range Management & Forestry
M.S.	1952	Montana State University	Range Management & Animal Industry
Ph.D.	1958	Texas A & M University	Range Management, Plant Physiology, and Soils

Special Training:

Air Force Residence Schools. 1952-58. Courses in communications and electronics Research and Development Seminar, National Security Seminar.
 Air Force Correspondence Courses. 1952-58. Including Automatic Data Processing, Electronics Fundamentals, Air Weather, Communications, Fire Control Systems.
 IBM Schools. 1963-67. FORTRAN & Assembly Language.
 Courses for credit at Northern Arizona U. 1963-67. Including Micro and Macro Economic Theory, Special problems in Chemistry, Calculus, Matrix Algebra and Differential Equations.
 Consultant and lecturer to Northern Arizona University on computer programming and mathematical modeling of biological data. 1967-68.
 Certificate. 1968. Mathematical and computer analysis of biological systems models. Washington Engineering Services Co., Inc.
 Certificate. 1969. Operations Research and Analysis course. University of California, Los Angeles.

Professional Experience:

Date	Position	Institution
1947	Fire Control Aid	Oregon State Forest Ser.
1948	Range Aid	Umatilla National Forest
1950-1952	Research Assistant	Montana Agr. Exp. Sta.
1952-1954	Air Force Communication Officer	
1956-1963	Range Scientist	Rocky Mountain Forest & Range Exp. Sta., Forest Serv., Flagstaff, Arizona
1963-1968	Plant Physiol. & Project Leader	Serv., Flagstaff, Arizona
1968-1971	Assoc. Professor, Range Science	Colorado State University
1971-Present	Professor, Range Science	Colorado State University

Professional and Honorary Societies:

Xi Sigma Pi
 Phi Kappa Phi
 Beta Beta Beta
 Scabbard and Blade
 Ecological Society of America
 Society for Range Management
 Sigma Xi
 Society of American Foresters
 Society for General Systems Research

Major Interests:

Quantitative management of natural resource-economic-community complexes; modelling and evaluation of ecological problems.

Current Professional Activities:

Range Ecosystem Planning. Operations research and systems simulation techniques applied to management decisions and ecology of rangeland.

Normative Aspects of Range Resource Management. Coalition formation and goal setting.

Publications, Technical Reports:

Payne, G. F., D. A. Jameson, and A. M. McKinney. 1951. Nutritional values of certain Montana range forage plants. Western Sec. Amer. Soc. Anim. Prod., Proc. 2:141-143.

Jameson, D. A. 1952. The chemical composition and utilization of greasewood and other browse species as related to some aspects of cattle nutrition on winter ranges in southeastern Montana. M.S. Thesis. Montana State College, Bozeman.

Jameson, D. A. 1952. Nutritive value of browse on Montana winter ranges. J. Range Manage. 5:305-310.

Jameson, D. A. and G. W. Thomas. 1956. Time of day as a consideration in grass clipping experiments. J. Range Manage. 9:98-99.

Jameson, D. A. 1958. Growth and development of *Andropogon scoparius* Michx. as influenced by removal of various above-ground parts. Ph.D. Diss. Agr. and Mech. Coll. of Texas, College Station.

Jameson, D. A. and D. L. Huss. 1959. The effect of clipping leaves and stems on numbers of tillers, herbage weights, root weights, and food reserves of little bluestem. J. Range Manage. 12(3):122-126.

Jameson, D. A. 1959. Use of fire in control of juniper in Arizona. Paper presented to Western Weed Control Conference.

Cotner, M. L. and D. A. Jameson. 1959. Costs of juniper control: bulldozing vs. burning individual trees. Rocky Mountain Forest and Range Exp. Sta. Paper 43. 14 p.

Jameson, D. A. 1961. Heat and desiccation resistance of tissue of important trees and grasses of the pinyon-juniper type. Bot. Gaz. 122:174-179.

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- Jameson, D. A. and E. H. Reid. 1965. The pinyon-juniper type of Arizona. *J. Range Manage.* 18:152-153.
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- Jameson, D. A., G. S. Innis and G. L. Swartzman. 1971. Operations research in management of grassland ecosystems. Presented to Amer. Statist. Ass., Fort Collins.
- Jameson, D. A. 1972. Integrated experimental ecology: Methods and results of ecosystem research in the German Solling project. Edited by H. Ellenberg, Springer-Verlag, New York, 214 p. Book Review. *J. Range Manage.* 25:158.
- Jameson, D. A. 1972. A systems approach to research planning. Presented at a Symposium on Research Planning held at Fresno, California.
- Jameson, D. A. 1972. A general view of clear-cutting. Presented at a Symposium on Clear-cutting held at Corvallis, Oregon.
- Jameson, D. A. 1972. Locational desirability and population movements in Colorado counties. *Regional Analysis of Grassland Environmental Systems*, Rep. No. 2, Colorado State Univ.
- Jameson, D. A. 1972. Organization and management of interdisciplinary research. *Regional Analysis of Grassland Environmental Systems*, Rep. No. 3, Colorado State Univ., Fort Collins.

Jameson, Donald A. and R. Dennis Child. 1972. CO-PLAN: A computerized optimization scheme for range management planning. Regional Analysis of Grassland Environmental Systems, Rep. No. 5, Colorado State Univ., Fort Collins.

Jameson, D. A., S. A. D'Aquino and E. T. Bartlett. 1973. Economics and management planning of range ecosystems. Text.

Name: Arthur George Johanningsmeier

Born: 1930

Academic Training:

Degree	Year	Institution	Major
B.S.	1956	Purdue University	Biology and Chemistry
M.S.	1962	Purdue University	Animal Ecology
Ph.D.	1966	Purdue University	Animal Ecology

Professional Experience:

Date	Position	Institution
Summer 1956	Naturalist	Shades State Park, Indiana
1958-1960	Instructor, Gen. Botany	Purdue University
1960-1962	Instructor, Gen. Zoology	Purdue University
1964-1971	Assistant Professor of Biology	Boston University
1971-1972	NSF Faculty Post-doctoral Fellowship	Colorado State University
1972-Present	Chairman, Science Dept.	U.S. IBP Grassland Biome Cushing Academy

Professional and Honorary Societies:

Sigma Xi
American Society of Mammalogists
American Institute of Biological Science
American Association for the Advancement of Science
Ecological Society of America

Major Interests:

Development of techniques for the estimation of energy and materials utilization in the small mammal component of terrestrial food chains; biochemical, telemetric, and isotopic work with *Microtus pennsylvanicus*. Nutritional studies with *Sylvilagus floridanus*, *Lepus californicus*, *Dipodomys ordii*, *Onychomys leucogaster*, *Sigmodon hispidus*, *Lepus townsendii*.

Current Professional Activities

Teaching: Zoology, ecology and advanced biology

Research: Ecology of small mammals (Particularly field and laboratory nutrition)

Publications, Technical Reports:

Johanningsmeier, A. G. 1962. Use of I-131 to measure movements of small animals. Science 138:147-148.

Johanningsmeier, A. G. 1962. Ecological studies on *Microtus pennsylvanicus*. M. S. Thesis. Purdue Univ. 147 p.

Johanningsmeier, A. G. 1966. Studies on energy and materials utilization in *Microtus pennsylvanicus* under field and laboratory conditions. Ph. D. Thesis. Boston Univ. 248 p.

Johanningsmeier, A. G. 1968. Book review: Recent Mammals of the World: a Synopsis of Families. S. Anderson and J. Knox Jones. *In* Amer. Sci. Spring 1968.

Johanningsmeier, A. G. 1970. Studies on energy and materials utilization in *Microtus pennsylvanicus* under field and laboratory conditions. In preparation.

Johanningsmeier, A. G. 1972. Consumer subsystem energetics model (rough draft). Co-author of this draft - see Mel Dyer for exact title of this outgrowth of Process Studies Workshop.

Name: Donald A. Klein

Born: 1935

Academic Training:

Degree	Year	Institution	Major
B.S.	1957	University of Vermont	Microbiology
M.S.	1961	University of Vermont	Food and Aquatic Microbiology
	1961-1962	Eberhard Karls Universitat Germany	Special Student
Ph.D.	1966	Pennsylvania State University	Microbiology

Professional Experience:

Date	Position	Institution
1958-61	Instructor	University of Vermont
1962	Research Analyst	J. J. Thompson Co., Pennsylvania
1962-66	Group Leader, Soil Ecology Lab	Pennsylvania State University
1967-70	Assistant Professor Microbiology	Oregon State University
1970-	Assistant Professor Microbiology	Colorado State University

Professional and Honorary Societies:

American Society for Microbiology
 American Association for the Advancement of Science
 Sigma Xi
 Water, Air, and Waste Section, ACS
 Society for Industrial Microbiology

Major Interests:

Environmental microbiology, ecosystem function in aquatic and grassland environments; *Arthrobacter* physiology and morphogenesis; modelling of ecosystem and biochemical processes; Methylene hydroxylase enzymology.

Current Professional Activities:

Vice-President, Rocky Mountain Branch, American Society for Microbiology, 1972-1973

Program Committee, 1973, Gordon Conference on Microbiological Degradation, Holderness School, N.H., July, 1973

Invited speaker, International Symposium on Environmental Biogeochemistry, Logan, Utah. March 22-24, 1973

1972 Technical Presentations:

- Methodology for Decomposer Process Studies. IBP Seminar Series. Student Center, Colorado State University, Fort Collins. 3/24/72.
- Decomposer Subsystem, Chapter 5. IBP Process Study Workshop, Fort Collins, Colorado, 2/17-18/72 and 3/30-31/72.
- Decomposer's Role in Ecosystem Function. Range Science Short Courses, Fort Collins, Colorado 4/6/72.
- Decomposer's Role in Ecosystem Function, BLM and Forest Service Personnel, Fort Collins, Colorado 11/3/72.
- Decomposer's Role in Ecosystem Function. Foreign Student Short Course, School of Forestry, Fort Collins, Colorado 7/17/72. (Dr. Clint Wasser, Coordinator)

Publications, Technical Reports:

- Casida, L. E., Jr., D. A. Klein and T. Santoro. 1964. Soil dehydrogenase activity. *Soil Sci.* 98:371-376.
- Atherton, H. V., D. A. Klein and R. N. Mullen. 1964. Rural water supplies and milk quality. *Agr. Eng.* 45:196-197.
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- Klein, D. A. and L. E. Casida, Jr. 1967. *Escherichia coli* die-out from normal soil as related to nutrient availability and the indigenous microflora. *Can. J. Microbiol.* 13:1401-1470.
- Klein, D. A. 1968. Growth of an aquatic-derived bacterium in the presence of long-chained alkanes. *Appl. Microbiol.* 16:421-422.
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- Klein, D. A., T. C. Loh and R. L. Goulding. 1971. A rapid procedure for measuring dehydrogenase activity in soils low in organic matter. Soil Biol. Biochem. 3:385-387.
- Hayasaka, Steven, and D. A. Klein. 1971. Structural effects on *Arthrobacter* methylene hydroxylase activity. Journal of Bacteriology 108(3):1141-1146.
- Klein, D. A., Patricia A. Mayeux and Sally L. Seaman. 1972. A simplified unit for evaluation of soil core respirometric activity. Plant and Soil 36(1):177-183.
- Park, J. E., R. C. Rockhill and D. A. Klein. 1972. Photooxidative approach to annual ryegrass (*Lolium multiflora*) straw modification with corresponding increases in microbial response. J. Environ. Qual. 1(3):298-300.
- Rockhill, R. C., J. E. Park and D. A. Klein. 1972. Photooxidative degradation of ligninsulfonate to substrates enhancing microbial growth. J. Environ. Qual. 1(3):315-317.
- Klein, D. A., R. A. Sokol, M. H. Frye and H. L. Teller. 1972. Soil microbial ramifications of silver iodide use in weather modification. Bacteriol. Proc. E42.
- Griffin, R. D., D. A. Klein and P. D. Mayeux. 1972. Simulation model of decomposer activity in a semi-arid grassland soil. Bacteriol. Proc. ES0.
- Eldridge, J. P. and D. A. Klein. 1972. Relationships between lignin model compound metabolism and *Pseudomonas putida* - utilization of photooxidized ligninsulfonate. Bacteriol. Proc. E87.
- Sokol, R. A. and D. A. Klein. 1972. Regulation of glucose utilization on *Arthrobacter* sp. Bacteriol. Proc. p. 145.
- Klein, D. A. and R. A. Sokol. 1973. Cloud seeding for snow augmentation: land use ramifications of residual silver iodide nucleating agents. ASCE Transactions.
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- Klein, D. A. and P. C. Mayeux. 1973. Carbon flow and microbial decomposer functions in a semi-arid grassland soil. Bacteriol. Proc.
- Klein, D. A. Microbial contributions to carbon flow and partitioning of organic matter decomposition in a semi-arid environment. Abstracts. Symposium on Environmental Biogeochemistry, Logan, Utah, March, 1973.

Name: John James Koranda

Born: 1927

Academic Training:

Degree	Year	Institution	Major
B.S.	1950	Michigan State University	Zoology
M.S.	1954	Michigan State University	Botany
Ph.D.	1960	University of Tennessee	Botany (Ecology)

Special Training:

Civil Defense Department - Radiological Training Course

Professional Experience:

Date	Position	Institution
1960-63	Taxonomist-ecologist	Alaska Agricultural Experiment Station, Palmer
1963-64	Biologist	U.S. Navy Radiological Defense Laboratory, San Francisco
1964-73	Biologist-ecologist	Lawrence Livermore Laboratory University of California

Professional and Honorary Societies:

Sigma Xi
American Association for the Advancement of Science
Explorers Club

Major Interests:

Plant ecology
Physiological ecology
Radionuclide cycling in the environment
Water movement in plants and soils

Current Professional Activities:

Conducting research programs on water movement in ecological systems, the measurement in the field of transpirational water flux, and the total evapo-transpirational water flux from various ecosystems. Previously, research was directed toward determining the hazard to man from the release of radio-activity to the environment, especially the release of tritium as a liquid or a vapor.

Publications, Technical Reports:

- Drew, J. V., J. C. F. Tedrow, R. E. Shanks and J. J. Koranda. 1958. Rate and depth of thaw in arctic soils. Trans. Am. Geophys. Union 39:697.
- Koranda, J. J. 1959. Arctic summer. Natural History Magazine, Aug.
- Klebesadel, L. J., C. I. Branton and J. J. Koranda. 1962. Seed characteristics of blue-joint and techniques for threshing. J. Range Manage. 15:227.
- Klebesadel, L. J., A. C. Wilton, R. L. Taylor and J. J. Koranda. 1964. Fall growth behavior and winter survival of *Festuca Rubra* and *Poa Pratensis* in Alaska as influenced by Latitude-of-Adaptation. Crop Sci. 4:340.
- Koranda, J. J. 1965. Preliminary studies of the persistence of tritium and ^{14}C in the Pacific Proving Ground, Symp. on Terrestrial radioecology, Richland, WA, May 1965. Health Phys. 11:1445.
- Koranda, J. J. 1965. Agricultural factors affecting the daily intake of fresh fallout by dairy cows. UCRL-12479.
- Koranda, J. J. and R. Gunnink. 1966. Rhenium-184 at Sedan Crater, 1966. UCRL-70165.
- Koranda, J. J., J. R. Martin and R. W. Wikkerink. 1967. Radioecological studies at Amchitka Island, Alaska. Part I. Preliminary tritium measurements. UCRL-50367 (CDI) Dec.
- Koranda, J. J., J. R. Martin, and R. W. Wikkerink. 1967. Residual tritium at Sedan Crater. Part II. Soil and ejecta studies. UCRL-50360.
- Koranda, John J., John R. Martin, Robert W. Wikkerink and William E. Bell. 1967. The persistence of long-lived radionuclides in natural ecosystems at nuclear detonation sites with special emphasis on residual tritium. UCRL-50223 (Program Book for the Meeting of the AEC Bio-Medical Program Directors). p. 17.
- Koranda, John J., John R. Martin, Robert W. Wikkerink and Marshall Stuart. 1968. UCRL-50529. (Title and report SRD)
- Hatch, F. T., J. A. Mazrimas, G. G. Greenway, J. J. Koranda and J. L. Moore. 1968. Studies on liver DNA in tritiated kangaroo rats living at Sedan Crater. UCRL-50461.
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- Koranda, John J. and John R. Martin. 1969. The persistence of radionuclides at sites of nuclear detonations. *In* Biological implications of the nuclear age, AEC Symp. Series No. 16, CONF-690303:159-187.
- Koranda, J. J., J. R. Martin, R. W. Wikkerink and M. L. Stuart. 1969. Radioecological studies at Amchitka Island. II. Gamma-emitting radionuclides in the terrestrial environment. UCRL-50786.
- Shore, B., L. Anspaugh, R. Chertok, J. Gofman, F. Harrison, R. Heft, J. Koranda, Y. Ng, P. Phelps, G. Potter and A. Tamplin. 1969. The fate and importance of radionuclides produced in plowshare events. *In* Proceedings for the Symp. on public health aspects of peaceful uses of nuclear explosives, SWRHL-82:595-651.
- Anspaugh, Lynn R., R. J. Chertok, B. R. Clegg, J. J. Cohen, R. J. Grabske, F. L. Harrison, R. E. Heft, G. Holladay, J. J. Koranda, Y. C. Ng, P. L. Phelps and G. D. Potter. 1969. Bio-medical division preliminary report for Project Schooner. UCRL-50718.
- Koranda, John J., and John R. Martin. 1970. Postshot distribution and movement of radionuclides in nuclear crater ejecta. *In* Proc. Am. Nuclear Symp. on engineering with nuclear explosives, January 1970. CONF-700101, 1:400-421.
- Koranda, J. J., J. R. Martin and R. Wikkerink. 1970. Leaching of radionuclides at Sedan Crater. *In* Radionuclides in the environment, advances in chemistry - Series 93, Am. Chem. Soc. 1970. p. 97-117.
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- Jordan, C. F., J. J. Koranda, J. R. Kline, and J. R. Martin. 1970. The movement of tritium in a tropical ecosystem. *BioScience* 20:807.
- Kline, J. R., J. R. Martin, E. G. Jordan and J. J. Koranda. 1970. Measurement of transpiration in tropical trees with tritiated water. *Ecology* 51:1068-1073.
- Martin, J. R., C. F. Jordan, J. J. Koranda and J. R. Kline. 1970. Radioecological studies of tritium movement in a tropical rainforest. *In* Proc. Am. Nuclear Soc. Symp. on engineering with nuclear explosives, January 1970. CONF-700101, 1:422-438.
- Koranda, J. J., P. L. Phelps, L. R. Anspaugh, and G. Holladay. 1971. Sampling and analytical systems for measurement of environmental radioactivity. *In* Proc. of International Symp. on rapid methods for measuring radioactivity in the environment, Germany, July 1971. IAEA-SM-148/36: 587-614.

- Martin, J. R. and J. J. Koranda. 1971. Distribution, residence time, and inventory of tritium in Sedan Crater ejecta. *Nuclear Technology* 11: 459-464.
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- Koranda, J. J. 1972. The north slope (of Alaska) - its physiography, fauna and its flora. *Alaska Geographic* Vo. 1, No. 1:1-37.
- Koranda, J. J., J. R. Martin and L. R. Anspaugh. 1972. The significance of tritium releases to the environment. *In Proc. of Nuclear Science Symp.*, San Francisco, Nov. 1971, IEEE Transaction NS-19 No 1:27.
- Phelps, P. L., L. R. Anspaugh, J. J. Koranda and G. W. Huckabay. 1972. A portable Ge(Li) Detector for field measurement of radionuclides in the environment. *In Proc. of Nuclear Science Symp.*, San Francisco, Nov. 1971, IEEE Transactions NS-19 No. 1:199.
- Koranda, J. J. and J. R. Martin. 1973. Gamma-emitting radionuclides in Alaskan environments 1967-1970. *In Proc. 3rd Natl. Symp. on Radioecology*, Oak Ridge, Tenn., May 1971. (In press)
- Koranda, J. J. and J. R. Martin. 1973. The movement of tritium in ecological systems. *In Proc. of Tritium Symposium*, Las Vegas, Nevada, Aug.-Sept. 1971. (In press)
- Harrison, F. L. and J. J. Koranda. 1973. Tritiation of aquatic animals in an experimental freshwater pool. *In Proc. 3rd Natl. Symp. on Radioecology*, Oak Ridge, Tenn., May 1971. (In press)
- Martin, J. R. and J. J. Koranda. 1973. Biological Half-life studies of tritium in chronically exposed desert rodents. *Radiation Research* (In press)
- Martin, J. R. and J. J. Koranda. 1973. Recent measurements of ^{137}Cs residence time in Alaska vegetation. *In Proc. 3rd Natl. Symp. on Radioecology*, Oak Ridge, Tenn., May 1971. (In press)
- Anspaugh, L. R., J. J. Koranda, and W. L. Robison. 1973. Environmental aspects of natural gas stimulation experiments with nuclear devices. *In Proceedings of the 3rd Natl. Symp. on Radioecology*. (In press)
- Clegg, B. R., J. J. Koranda, and G. Hadley. 1973. A system for correlating tritium oxide transport in vegetation with micrometeorological variables. *In Proc. of Nuclear Sci. Symp.*, San Francisco, Nov. 1971. (In press)
- Harrison, F. L., J. J. Koranda and J. S. Tucker. 1973. Tritiation of aquatic animals in an experimental marine pool. *In Proc. of Nuclear Sci. Symp.* San Francisco, Nov. 1971. (In press)
- Anspaugh, L. R., J. J. Koranda, W. L. Robison, and J. R. Martin. 1973. The dose to man via food-chain transfer resulting from exposure to tritiated water vapor. *In Proc. of Nuclear Sci. Symp.*, San Francisco, Nov. 1971. (In press)

Pendleton, R. C., J. J. Koranda, W. W. Wagner, P. L. Phelps, R. D. Lloyd, L. R. Anspaugh, and W. H. Chapman. 1973. Radioecological studies in Utah subsequent to the Baneberry event. *In* Proc. of the 3rd Natl. Radioecology Symp. (In press)

Name: Clair Leonard Kucera

Born: 1922

Academic Training:

Degree	Year	Institution	Major
B.S.	1947	Iowa State University	Forestry
M.S.	1948	Iowa State University	Ecology (Botany)
Ph.D.	1950	Iowa State University	Ecology (Botany)

Special Training:

Radiobiology Short Course, Taft Engineering Center, Cincinnati.
Radiochemistry Short Course, Argonne National Laboratory.
Radiation Biology Conference, Oak Ridge National Laboratory.
Freshwater Pollution Ecology, Robert S. Kerr Water Research Center, Ada, Okla.
Tropical Biology Training Seminar, National Science Foundation, San Jose, Costa Rica.

Professional Experience:

Date	Position	Institution
1950-54	Assistant Professor	University of Missouri
1954-60	Associate Professor	University of Missouri
1960-64	Professor and Chairman	University of Missouri
1964-	Professor	Department of Biological Science University of Missouri

Professional and Honorary Societies:

Past Chairman, Central States Section, Botanical Society of America
Associate Editor, *Ecology*, (3 years)
Ecological Society of America
Botany Society of America
Gamma Sigma Delta
Phi Kappa Phi
Sigma Xi

Major Interests:

Prairie grassland ecology with special emphasis on primary production and turnover of biological materials.

Current Professional Activities:

Teaching: General Ecology, Grass Systematics and graduate courses.
Research in IBP litter decomposition program and ecosystem analyses at the University of Missouri Prairie Station.

Publications, Technical Reports:

- Kucera, C. L. and J. M. Aikman. 1950. Secondary plant succession on an eroded lindley soil. I.S.C. J. Sci. 25:581-597.
- Kucera, C. L. 1952. An ecological study of a hardwood forest area in central Iowa. Ecol. Monog. 22:283-299.
- Kucera, C. L. 1952. Missouri poisonous plants. The Veterinary Scope 2:2-5. University of Missouri.
- Kucera, C. L. 1953. Additional notes on grasses of Boone County, Missouri. Rhodora 55:289-290.
- Kucera, C. L. 1953. The genus *Lyonia* in Missouri. Rhodora 55:155.
- Kucera, C. L. 1953. Some relationships of evaporation rate to vapor pressure deficit and low wind velocity. Ecology 35:71-75.
- Kucera, C. L. 1954. *Eragrostis curvula* in Missouri. Rhodora 56:273-274.
- Palmquist, E. M. and C. L. Kucera. 1954. Wild flowers of Missouri (2nd Series, revised). University of Missouri Arts and Science Series, Bull. 55 No. 20.
- Kucera, C. L. and R. E. McDermott. 1955. Sugar maple-basswood studies in the forest-prairie transition of central Missouri. The Amer. Midland Naturalist 54:495-503.
- Kucera, C. L. 1956. Grazing effects on composition of native prairie in north-central Missouri. Ecology 37:389-391.
- Howell, D. L. and C. L. Kucera. 1956. Composition of pre-settlement forest in three counties of Missouri. Bull. of the Torrey Botanical Club 83: 207-217.
- Kucera, C. L. 1957. Book Review of Plant Communities, [ed.] Oosting. 2nd ed. Ecology 38:366-367.
- Kucera, C. L. 1957. A new *Tridens* (Gramineae) from Missouri. Rhodora 40: 1957.
- Kucera, C. L. 1957. New plant station records in Missouri. Rhodora 40:1957.
- Kucera, C. L. and C. S. Martin. 1957. Vegetation and soil relationships in the glade region of the southwest Missouri Ozarks. Ecology 38:285-291.
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- Kucera, C. L. 1958. Flowering variations in geographic selections of *Eupatorium rugosum*. Torr. Bot. Club. Bull. 85:
- Kucera, C. L. 1959. Weathering characteristics of deciduous leaf litter. Ecology 40.
- Kucera, C. L. 1960. Forest encroachment in native prairie. Iowa State College J. Sci. 34.
- Kucera, C. L. 1960. Prairie studies in Missouri. Soc. Am. Foresters Rept. 27.
- Vance, D. and C. L. Kucera. 1960. Flowering variations in *Eupatorium rugosum*. Ecology 41.
- Kucera, C. L. 1961. Book Review of The Plant Community [ed.] Hanson and Church. J. Range Mgt. 1961.
- Kucera, C. L. 1961. The grasses of Missouri. University of Missouri Press. p. 241-253.
- Steyermark, J. A. and C. L. Kucera. 1961. New grass combinations in grasses. Rhodora 63.
- Kucera, C. L. 1962. Racial studies of *Eupatorium rugosum*. Advancing Frontiers in the Plant Sciences 1.
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- Kucera, C. L. and Dale R. Kickham. 1971. Soil respirations studies in tallgrass prairie in Missouri. *Ecology* 52:912-915.
- Kucera, C. L. 1973. The challenge of ecology. A general text for the non-major and interdisciplinary courses. C. V. Mosby Co.

Name: Robert Lavigne

Born: 1930

Academic Training:

Degree	Year	Institution	Major
B.A.	1952	American International College	Biology
M.S.	1958	University of Massachusetts	Entomology
Ph.D.	1961	University of Massachusetts	Entomology

Special Training:

Institute of Animal Behavior

Professional Experience:

Date	Position	Institution
1956-1959	Teaching Fellowship Instructor	University of Massachusetts
1959-1965	Assistant Professor	University of Massachusetts
1965-1971	Associate Professor	University of Wyoming
1971-	Professor	University of Wyoming

Professional and Honorary Societies:

Entomological Society of America
Pan-Pacific Entomological Society
Animal Behavior Society
Society of Systematic Zoology
Kansas Entomological Society

Major Interests:

Behavior and taxonomy of robber flies (*Diptera asilidae*); bionomics and behavior of ants; food web studies including effect of parasites and predators on insect populations.

Current Professional Activities:

Compilation of an index to grass - insect relationships

Teaching: Insect Behavior, Taxonomy of Insects, Classification of Immature Insects

Research: Food habits of grassland insects.

Publications, Technical Reports:

Lavigne, R. J. 1959. Highlight ant control at 19th Annual Eastern PCO Conference, January 21-23. Pest Control 27:43-44, 46, 66.

Lavigne, R. J. 1959. Biology of the meadow spittlebug, *Philaenus leucophthalmus* L. in Massachusetts. J. Econ. Entomol. 52:904-907.

- Roberts, E. C. and R. J. Lavigne. 1959. Fungus gnat found to inhibit development of turfgrass. United States Golf Ass. J. 12:25-26.
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- Fisser, H. F. and R. J. Lavigne. 1961. A leaf feeding beetle found on three-tip sagebrush. J. Range Manage. 14:278-279.
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- Lavigne, R. J. and L. Stevens. 1965. Systemics for the control of the clear-winged cottonwood leaf aphid in southeast Wyoming. J. Econ. Entomol. 58:818-821.
- Lavigne, R. J. 1966. *Parabolocratus viridis* (Homoptera:Cicadellidae) and ants associated with it. J. Kansas Entomol. Soc. 39:65-67.

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- Holland, F. R. and R. J. Lavigne. 1969. Comparative behavior of eleven species of Wyoming robber flies (Diptera:Asilidae). Wyoming Agr. Exp. Sta. Sci. Monograph 18. 60 p.
- Lavigne, Robert. 1970. Courtship and predatory behavior of *Cyrtopogon auratus* and *C. glarealis* (Diptera: Asilidae). J. Kansas Entomol. Soc. 43(2):163-171.
- Kumar, Rabinder and Robert Lavigne. 1970. A new genus and new species of Callipterinae from India (Homoptera: Aphididae). Pan-Pacific Entomol. 46(2):120-124.
- Lavigne, Robert. 1970. Courtship and predation behavior of *Heteropogon maculinervis* (Diptera: Asilidae). J. Kansas Entomol. Soc. 43(3):270-273.
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- Lavigne, R. J., R. Kumar, J. Leetham and V. Keith. 1972. Population densities and biomass of aboveground arthropods under various grazing and environmental stress treatments on the Pawnee Site, 1971. U.S. IBP Grassland Biome Tech. Rep. No. 204. Colorado State Univ., Fort Collins. 203 p.

Name: James K. Lewis

Born: 1924

Academic Training:

Degree	Year	Institution	Major
	1943	Abilene Christian College	
B.S.	1948	Colorado State University	Animal Husbandry
M.S.	1950	Montana State College	Animal Husbandry
Ph.D.	1970	Texas A and M University	Range Management

Professional Experience:

Date	Position	Institution
1948-1950	Research Assistant	Montana State Coll.
1950-1956	Assistant Professor, Animal Husbandry	South Dakota State Coll.
1956-1957	Teaching Assistant	Texas A and M. Univ.
1958-	Associate Professor, Animal Science	South Dakota State Univ.

Professional and Honorary Societies:

American Society of Range Management	British Ecological Society
American Society of Animal Science	AAAS
Ecological Society of America	Phi Kappa Phi
The Wildlife Society	Gamma Sigma Delta
British Grassland Society	Sigma Xi

Major Interests:

Effect of intensity of grazing on range ecosystems; range measurements;
range animal nutrition.

Publication, Technical Reports:

- Lewis, J. K., F. R. Gartner, and J. Nesvold. 1964. The effect of winter supplementation and intensity of grazing on steer gains on native range. Proc. Western Section, Am. Soc. Animal Sci. 15:49.
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- White, E. M. and J. K. Lewis. 1967. Recent gully formation in the prairie areas of the Northern Great Plains. Plains Anthropol. 12:318.
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- Lavigne, R. J. 1969. Bionomics and nest structure of *Pogonomyrmex occidentalis* (Hymenoptera:Formicidae). Ann. Entomol. Soc. Amer. 62:1166-1175.
- Lavigne, R. J. 1969. A new species of *Lasiopogon* (Diptera:Asilidae) from Wyoming. J. Kansas Entomol. Soc. 42:363-365.
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- Lavigne, R. J. 1969. Ethology of North American robber flies. II. Courtship and predation behavior of *Heteropogon maculinervis* (Diptera:Asilidae). J. Kansas Entomol. Soc. (In press).
- Lavigne, R. J. 1969. Insects in the behavior laboratory. Amer. Biol. Teacher. (In press).
- Lavigne, R. J. 1969. The Asilidae of Wyoming. Wyoming Agr. Exp. Sta. Sci. Monograph. (In press).
- Barr, W. and R. J. Lavigne. 1969. Annotated list of the Asilidae of Idaho. Idaho Agr. Exp. Sta. (In press).

Name: Gene Elden Likens

Born: 1935

Academic Training:

Degree	Year	Institution	Major
B.S.	1957	Manchester College	Zoology
M.S.	1959	University of Wisconsin	Zoology
Ph.D.	1962	University of Wisconsin	Zoology

Professional Experience:

Date	Position	Institution
1955-57	Assistant in Zoology	Manchester College
1957-61	Graduate Assistant in Zoology	University of Wisconsin
1961	Instructor in Zoology	Dartmouth College
1962	Project Assistant, Zoology	University of Wisconsin
1962	Research Associate, Zoology	University of Wisconsin
1962-63	Research Associate, Meteorology	University of Wisconsin
1963	Instructor in Biological Sciences	Dartmouth College
1963	Visiting Lecturer	University of Wisconsin
1963-66	Assistant Professor Biological Sciences	Dartmouth College
1966-69	Associate Professor Biological Sciences	Dartmouth College
1968	Visiting Associate	Brookhaven National Laboratory
1969-72	Associate Professor	Cornell University
1972-	Professor	Cornell University

Professional and Honorary Societies:

American Association for the Advancement of Science
American Polar Society
American Society of Limnology and Oceanography
Ecological Society of America
Freshwater Biological Association
Gamma Alpha
Guggenheim Fellowship
Phi Sigma
Sigma Xi
Societas Internationalis Limnologiae
International Association for Great Lakes Research

Current Professional Activities:

Professor, Section of Ecology and Systematics, Cornell University
Ecological Advisor, U.S. Senate Committee on Public Works
Steering Committee for Cornell Program on Science, Technology and Society.
Governing Board, Water Resources and Marine Sciences Center, Cornell University
U.S. National Representative to Societas Internationalis Limnologiae
Principal investigator, A study of the nutrient inputs into Cayuga Lake and Seneca Lake, New York.

Publications, Technical Reports:

- Likens, G. E. and A. D. Hasler. 1960. Movement of radiosodium (Na^{24}) in a chemically stratified lake. *Science* 131(3414):1676-1677.
- Likens, G. E. and A. D. Hasler. 1962. Movement of radiosodium (Na^{24}) within an ice-covered lake. *Limnol. Oceanogr.* 7(1):48-56.
- Hasler, A. D. and G. E. Likens. 1963. Biological and physical transport of radionuclides in stratified lakes, p. 463-470. *In* V. Schultz and A. W. Klement, Jr. [ed.] *Radioecology*, Amer. Inst. Biol. Sci. and Reinhold Publ. Corp., N.Y.
- Bormann, F. H., G. E. Likens, N. M. Johnson and R. S. Pierce. 1963. Hydrologic mineral cycle interaction in a small forested ecosystem. *Bull. Ecol. Soc. Amer.* 44(3):86.
- Likens, G. E. 1964. An unusual distribution of algae in an antarctic lake. *Bull. Torrey Botan. Club* 91(3):213-217.
- Likens, G. E. 1964. Pesticide pollution of freshwater ecosystems. *Bull. Ecol. Soc. Amer.* 45(4):157-159.
- Likens, G. E. and A. D. Hasler. 1964. Transport of radionuclides in an ice-covered lake. *Verh. Intern. Ver. Limnol.* 15(1):258.
- Likens, G. E., N.M. Johnson, F. H. Bormann and R. S. Pierce. 1964. Hydrologic mineral cycle interaction in a small forested ecosystem. *Bull. Ecol. Soc. Amer.* 45(3):88.
- Ragotzkie, R. A. and G. E. Likens. 1964. The heat balance of two antarctic lakes. *Limnol. and Oceanogr.* 9(3):412-425.
- Likens, G. E. 1965. Measurement of background radiation in lakes. *Ecology* 46(4):544-548.
- Likens, G. E. and R. A. Ragotzkie. 1965. Vertical water motions in a small ice-covered lake. *J. Geophys. Res.* 70(10):2333-2344.
- Likens, G. E. and P. L. Johnson. 1966. A chemically stratified lake in Alaska. *Science* 153(3738):875-877.
- Likens, G. E. and R. A. Ragotzkie. 1966. Rotary circulation of water in an ice-covered lake. *Verh. Intern. Ver. Limnol.* 16(1):126-133.
- Likens, G. E., F. H. Bormann, N. M. Johnson and R. S. Pierce. 1966. The cation budget for a small forested ecosystem. *Bull. Ecol. Soc. Amer.* 47(3):115.
- Bormann, F. H. and G. E. Likens. 1966. Comparative nutrient losses in solution and in particulate matter from an undisturbed northern hardwood ecosystem. *Bull. Ecol. Soc. Amer.* 47(3):115.
- Johnson, N. M., G. E. Likens, F. H. Bormann and R. S. Pierce. 1966. Chemical weathering and major cation cycling in a podzolization environment. *Geo. Soc. Amer., Special Paper No.* 82:102.

- Johnson, N. M., G. E. Likens, F. H. Bormann and R. S. Pierce. 1966. Bulk chemical changes and rate of chemical weathering in central New Hampshire. *Trans. Amer. Geophys. Union* 47:83-84.
- Likens, G. E. 1967. Some chemical characteristics of meromictic lakes in North America, p. 17-62. *In* E. Jackson [ed.] *Some aspects of meromixis*, Syracuse Univ., Syracuse, N.Y.
- Likens, G. E., F. H. Bormann, N. M. Johnson, and R. S. Pierce. 1967. The calcium, magnesium, potassium, and sodium budgets for a small forested ecosystem. *Ecology* 48(5):772-785.
- Likens, G. E., F. H. Bormann, N. M. Johnson and R. S. Pierce. 1967. The effect of forest management on the nutrient budget of a northern hardwood ecosystem. *Bull. Ecol. Soc. Amer.* 48(2):53.
- Bormann, F. H. and G. E. Likens. 1967. Nutrient cycling. *Science* 155(3761):424-429.
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- Siccama, T. G., F. H. Bormann and G. E. Likens. 1968. Preliminary evaluation of the herb compartment of the Hubbard Brook Northern Hardwood Forest ecosystem. *Bull. Ecol. Soc. Amer.* 49(3):112.
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- Fisher, D. W., A. W. Gambell, G. E. Likens, and F. H. Bormann. 1968. Atmospheric contributions to water quality of streams in the Hubbard Brook Experimental Forest, New Hampshire. *Water Resource Res.* 4(5):1115-1126.
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- Bormann, F. H. and G. E. Likens. 1969. A watershed approach to problems of nutrient cycling in forest ecosystems. *Proc. 6th World Forestry Congress*, Vol. 2, Tech. Comm III, p. 2303-2306, Madrid, Spain.
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- Eaton, J. S., G. E. Likens, and F. H. Bormann. 1969. Use of membrane filters in gravimetric analyses of particulate matter in natural waters. *Water Resources Res.* 5(5):1151-1156.
- Gosz, J. R., G. E. Likens, F. H. Bormann and J. S. Eaton. 1969. Leaching losses from leaves of selected tree species. *Bull. Ecol. Soc. Amer.* 50(2):72.

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- Likens, G. E. 1970. Testimony presented at the hearings before the subcommittee on air and water pollution of the Committee on Public Works, U.S. Senate, Water Pollution 1970, Part 3, p. 950-987.
- Likens, G. E. and F. H. Bormann. 1970. Chemical analyses of plant tissues from the Hubbard Brook ecosystem in New Hampshire. *Yale Univ., School of Forestry Bull. No.* 79:25.
- Likens, G. E. and J. S. Eaton. 1970. A polyurethane collar for collecting stemflow on trees. *Ecology* 51(5):938-939.
- Likens, G. E. and J. J. Gilbert. 1970. Notes on quantitative sampling of natural populations of planktonic rotifers. *Limnol. Oceanogr.* 15(5):815-820.
- Likens, G. E., F. H. Bormann, N. M. Johnson, D. W. Fisher and R. S. Pierce. 1970. Effects of forest cutting and herbicide treatment on nutrient budgets in the Hubbard Brook watershed-ecosystem. *Ecol. Monogr.* 40(1): 23-47.
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- Bormann, F. H. and G. E. Likens. 1971. The ecosystem concept and the rational management of natural resources. *Yale Sci. Magazine* 45(7): 2-8.
- Burton, T. M. and G. E. Likens. 1971. Population estimates of salamanders in the Hubbard Brook Experimental Forest, New Hampshire. *Bull. Ecol. Soc. Amer.* 52(4):43.
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- Johnson, N. M., R. C. Reynolds and G. E. Likens. 1972. Atmospheric sulfur: Its effect on the chemical weathering of New England. Science (In press).
- Pierce, R. S., C. W. Martin, C. C. Reeves, G. E. Likens and F. H. Bormann. 1972. Nutrient loss from clearcuttings in New Hampshire. American Water Resources Assoc. Symp. at Fort Collins.
- Burton, T. M. and G. E. Likens. 1973. The effect of strip-cutting on stream temperatures in the Hubbard Brook Experimental Forest, New Hampshire. Submitted to BioScience.
- Fisher, S. G. and G. E. Likens. 1973. Energy flow in Bear Brook, New Hampshire: An integrative approach to stream ecosystem metabolism. Submitted to Ecology.
- Whittaker, R. H. and G. E. Likens. 1973. Carbon in the biota. Brookhaven Symp. in Biology, No. 24 (In press).
- Bormann, F. H., G. E. Likens, T. G. Siccama, R. S. Pierce and J. S. Eaton. 1973. The effect of deforestation on ecosystem export and the steady-state condition at Hubbard Brook. Submitted to Ecol. Monogr.

Name: John Edward Lloyd

Born: 1940

Academic Training:

Degree	Year	Institution	Major
B.S.	1962	Pennsylvania State University	Zoology and Entomology
Ph.D.	1967	Cornell University	Entomology

Professional Experience:

Dates	Position	Institution
1962-1967	Research Assistant	Cornell University
1967-1968	Assistant Professor, Entomology Ext.	Pennsylvania St. Univ.
1968-1972	Assistant Professor, Entomology	University of Wyoming
1972-	Associate Professor, Entomology	University of Wyoming

Professional and Honorary Societies:

Entomological Society of America
 Phi Kappa Phi
 Phi Sigma
 Sigma Xi
 American Mosquito Control Association
 Gamma Sigma Delta

Major Interests:

Entomology, Applied Entomology, Animal Ecology, Medical Entomology, Insect Toxicology, Animal Husbandry

Current Professional Activities:

Teaching: Soil Insects
 Insects Affecting Livestock
 Insect Toxicology

Research: Hypoderma lineatum in horses in Wyoming
 Soil Macroarthropods of the Prairie
 Control of Currently Important Insect Pests

Publication, Technical Reports:

Lloyd, J. E. and J. G. Matthysse. 1966. Polymer--insecticide systems for use as livestock feed additives. J. Econ. Entomol. 59:363-367.

Lloyd, J. E. 1967. Polymer insecticide systems for use as livestock feed additive larvicides. Ph.D. Thesis, Cornell Univ. 150 p.

Matthysse, J. G., J. E. Lloyd, J. F. Butler, and K. Tillapaugh. 1968. Cattle grub control by dust bag application of coumaphos in summer. J. Econ. Entomol. 61:311-312.

- Lloyd, J. E. 1970. Polyvinyl chloride-insecticide pellets fed to cattle to control face fly larvae in manure. J. Econ. Entomol. 63:1271-1281.
- Pfadt, R. E., J. E. Lloyd, M. Ali and G. Sharafi. 1970. Manner of pickup of ULV malathion by grasshoppers from aerially sprayed rangeland. J. Econ. Entomol. 63:1210-1214.
- Lloyd, J. E. 1971. Cattle grub control in Wyoming with a late summer dust bag application of Prolate. J. Econ. Entomol. 64:899-900.
- Lloyd, J. E. and J. G. Mathyssee. 1971. Residues of dichlorvos, diazinon, and dimetilan in milk of cows fed PVC - insecticide feed additives. J. Econ. Entomol. 64(4):821-822.
- Lloyd, J. E., R. E. Pfadt, M. Ali and G. Sharafi. The residual toxicity to *Aulocara ellioti* of ULV malathion extended with polyester resin. J. Econ. Entomol. 65(2):387-390.
- *Grow, R. R., J. E. Lloyd and R. Kumar. 1972. An economical CO₂-powered sprayer for small experimental plots. J. Econ. Entomol. 66(1):252-253.
- *Lloyd, J. E. and R. R. Grow. 1970. Soil macroarthropods of the Pawnee Site. U.S. IBP Grassland Biome Tech. Rep. No. 104. Colorado State Univ., Fort Collins. 18 p.
- *Kumar, R., R. J. Lavigne, J. E. Lloyd, R. E. Pfadt, J. Chu, R. Grow and L. Rogers. 1972. Insects of the Pawnee Site. U.S. IBP Grassland Biome Tech. Rep. No. 172. Colorado State Univ., Fort Collins. 48 p.
- *Grow, R. R. and J. E. Lloyd. 1972. The effect of arthropods on a shortgrass prairie. Proceedings North Central Branch, Entomol. Soc. Amer. 27:178.

Name: John Kimber Marshall

Born: 1938

Academic Training:

Degree	Year	Institution	Major
B.Sc. (Hons)	1959	St. Andrew's University, Scotland	Botany with Zoology
Ph.D.	1963	Cambridge University, England	Plant Ecology (autecology)

Special Training:

1965 Programmer's course, Atlas autocode, Edinburgh University, Scotland
 1969 Programmer's course, Fortran, CSIRO, Division of Computing Research,
 Canberra, Australia

Professional Experience:

Date	Position	Institution
1959-1962	Part-time demonstrator and tutor	Botany School, Cambridge University, England
1961	Expedition leader	Oxford University expedition to Peru, South America
1963-1964	Assistant lecturer	Botany Department, Edinburgh University, Scotland
1964-1967	Research Assistant	Department of Forestry & Natural Resources, Edinburgh University, Scotland
1967-1970	Research Scientist	CSIRO, Division of Plant Industry, Deniliquin, Australia
1970-	Senior Research Scientist	CSIRO, Rangelands Research Unit, Deniliquin, Australia (On leave to Colorado State University)
1969-1971	Honorary Lecturer	Botany Department, Mondash University, Australia
1971-	Producer Integrator	US IBP Grassland Biome, Natural Resource Ecology Laboratory
1971-	Research Associate Professor/Research Affiliate	Colorado State University

Professional and Honorary Societies:

British Ecological Society
 British Society of Soil Science
 Botanical Society of the British Isles
 British Bryological Society
 Edinburgh Botanical Society
 Ecological Society of Australia
 Ecological Society of America

Major Interests:

Plant autecology including causal plant distribution; environmental heterogeneity
 and its consequences, including plant-soil relationships and wind as an ecological
 factor; techniques and methodology in experimental ecology; production ecology;
 ecosystem structure and function

Current Professional Activities:

Australia

Teaching: Lecture course: "Wind as an ecological factor" at Monash University, Clayton, Australia

Research: Characteristics of airflow over roughened surfaces; preventive control of wind erosion of soil in sparsely vegetated semi-arid country; effect of shelter on pasture and sheep performance; autecology of major Australian shrub-steppe species

United States of America

Synthesis and integration of data and research in the primary producer component of the ecosystem within the US IBP Grassland Biome. Member of US IBP Inter-Biome Primary Productivity Committee. Talks and lectures given at School of Forestry and Environmental Studies, Yale; Ecology Center, Utah State University; AIBS Meeting, Minneapolis.

Publications, Technical Reports:

Marshall, J. K. 1959. Studies on the serpentine vegetation at Meikle Kilrannoch, Clova, Angus. Honours Thesis, St. Andrew's Univ., Scotland. 94 p.

Robertson, D. A. and J. K. Marshall. 1961. Notes on the bryophytes of Upper Glen Clova and Glen Doll, Angus. Trans. Proc. Bot. Soc. Edinb. 30:148-165.

Marshall, J. K. 1962. A review of *Plant hunters in the Peruvian Andes*. (T. Harper Goodspeed. 2nd Ed. Neville Spearman, London, 1961, 378 p.) J. Roy. Hort. Soc. 87:476-477.

Marshall, J. K. 1963. Autecological studies on *Corynephorus canescens* (L.) P. Beauv. Ph.D. Thesis, Cambridge Univ., 207 p.

Marshall, J. K. 1964. Botanical Report. In The Oxford University Expedition to Peru 1961. General Report. Church Army Press, Oxford. p. 13-20.

Marshall, J. K. 1965. *Corynephorus canescens* (L.) P. Beauv. as a model for the *Ammophila* problem. J. Ecol. 53:447-463.

Marshall, J. K. 1967. Biological flora account of *Corynephorus canescens* (L.) P. Beauv. J. Ecol. 55:207-220.

Marshall, J. K. 1967. The effect of shelter on the productivity of grasslands and field crops. Part I. Shelter influences. Part II. Operative mechanisms. Fld. Crop Abstr. 20:1-14.

Myerscough, P. J. and J. K. Marshall. 1967. Seed production and phenotypic plasticity of *Arabidopsis thaliana* at different densities and mineral nutrient levels. Arab. Inf. Serv. (Göttingen) 4:24-25.

- Marshall, J. K. 1968. Automatic, battery-operated wind-speed and direction recording system. In *Agroclimatological Methods*. Natural Resources Research VII, UNESCO, Reading, 1966. UNESCO, Paris. p. 309-312.
- Marshall, J. K. 1968. Factors limiting the survival of *Corynephorus canescens* (L.) Beauv. in Great Britain at the northern edge of its distribution. *Oikos* 19:206-216.
- Marshall, J. K. 1968. The photographic-photoelectric planimeter combination method for leaf area measurement. *Photosynthetica* 2:1-9.
- Marshall, J. K. 1968. Methods of leaf area measurement of large and small leaf samples - a review. *Photosynthetica* 2:41-47.
- Marshall, J. K. 1969. Site susceptibility to aeolian erosion in semi-arid and arid Australia. Drought Seminar, Univ. of New England, Armidale, N.S.W., Australia, May 1969. 32 p.
- Lynch, J. J. and J. K. Marshall. 1969. Shelter: a factor increasing pasture and sheep production. *Aust. J. Sci.* 32:22-23.
- Marshall, J. K. 1970. Assessing the protective role of shrub-dominated rangeland vegetation against soil erosion by wind. *Proc. Int. Grassland Congr.* 11:19-23.
- Marshall, J. K. 1970. Vegetation resources - influence of vegetation on landscape and soil stability. Australian Arid Zone Research Conference 5 - 1 to 11.
- Marshall, J. K. 1971. Drag measurements in roughness arrays of varying density and distribution. *Agr. Meteorol.* 8:269-292.
- Kvet, J. and J. K. Marshall. 1971. Assessment of leaf area and other assimilating plant surfaces, p. 517-555. In Z. Sestak, J. Catsky and P. G. Jarvis [ed.] *Plant photosynthetic production manual of methods*. Dr. W. Junk, The Hague, Holland.
- Marshall, J. K. 1972. Principles of soil erosion and its prevention. In Hall, N. et al. [ed.] *The use of trees and shrubs in the dry country of Australia*. Australian Government Publishing Service, Canberra, Australia. p. 90 - 107.
- Marshall, J. K. 1972. A review of *Systems analysis in agricultural management*. (J. B. Dent and J. R. Anderson. John Wiley & Sons, Australasia Pty. Ltd., Sydney, Australia, 1971. 394 p. J. Range Management 25:485-486.
- Marshall, J. K. 1973. An experimental analysis of the effect of shelter on crop growth. *J. Appl. Ecol.* (In press).
- Marshall, J. K. 1973. Drought, land use and soil erosion. In Lovett, J. V. [ed.]. *Drought in Australia*. Angus and Robertson, Sydney, Australia (In press).

- Marshall, J. K. 1973. Effects of stock on microenvironments in Australian rangelands. In Proceedings of US - Australia Range Science Seminar-Workshop, Berkeley, March/April 1971. US Department Agric. Miscellaneous Publication. (In press).
- Myerscough, P. J. and J. K. Marshall. 1973. Population dynamics of *Arabidopsis thaliana* (L.) Heynh. strain "Estland" at different densities and nutrient levels. New Phytol. 72:595-617.
- Parton, W. J. and J. K. Marshall. 1973. MODENV: A grassland ecosystem model. Proceedings summer Computer Simulation Conference, July 1973, Montreal, Canada. (In press).
- Wooding, R. A., E. F. Bradley and J. K. Marshall. 1973. Drag due to regular arrays of roughness elements of varying geometry. Proc. Amer. Soc. Civil Engrs. J. Hydraulics Division. (Submitted).

Name: John G. McColl

Born: 1941

Academic Training:

Degree	Year	Institution	Major
B.S.	1963	Australian Forestry School	Forestry
M.S.	1966	Australian National University	Botany
Ph.D.	1969	University of Washington	Forest Soils

Professional Experience:

Date	Position	Institution
1959	Summer employee	Papua and New Guinea Forest Service.
1959-60	Part-time :	New South Wales Forestry Comm.
1963	Demonstrator in Botany	University of Sydney
1966,67,68 (summers)	Assistant Coordinator	Peace Crops Training Program University of Washington
1966	Teaching Assistant	University of Washington
1965,66-69 1968,69 (summers)	Research Assistant	University of Washington
1970	Field Dendrologist	Tropical Studies, Costa Rica
1970	Research Assistant	Yale University
1970	Postdoctorate	Yale University
1970-	Assistant Professor	University of Minnesota

Professional and Honorary Societies:

Ecological Society of America
Ecological Society of Australia
Institute of Foresters of Australia
Society of American Foresters
Soil Science Society of America
American Society of Agronomy
Northwest Science Society
Sigma Xi
Xi Sigma Pi
American Quaternary Association

Publications, Technical Reports:

- McColl, J. G. 1965. An ecological study of the distributions of *Eucalyptus gummifera* and *E. maculata*. M.S. Thesis. Australian Nat. Univ., Canberra.
- McColl, J. G. 1966. Accession and decomposition of litter in spotted gum forests. Australian Forest. 30:191-198.
- McColl, J. G. 1967. Relationships between some nutritional factors and the distribution of *Eucalyptus gummifera* and *E. maculata*. Ecology 48:766-771.

- McColl, J. G. 1968. A mechanism of cation transport in a forest soil. Northwest Sci. 42:134-140.
- McColl, J. G. 1969. Ion transport in a forest soil: models and mechanisms. Ph.D. Thesis. Univ. Washington, Seattle.
- McColl, J. G. 1969. Soil-plant relationships in a *Eucalyptus* forest on the south coast of New South Wales. Ecology 50:354-362.
- McColl, J. G. 1970. Regression models relating soil nutrients and growth of *Eucalyptus gummifera* and *E. maculata* seedlings. Ecology 51:157-159.
- McColl, J. G. 1970. Properties of some natural waters in a tropical wet forest in Costa Rica. Bioscience 20:1096-1100.
- McColl, J. G. 1971. Forest floor characteristics within a small plot in Douglas fir in western Washington. Soil Sci. Soc. Amer. (In review)
- McColl, J. G. 1971. Phenological studies in *Eucalyptus maculata*. Australian Forest. (In review)
- McColl, J. G. 1971. Dynamics of ion transport during moisture flow from a Douglas fir forest floor. Forest Sci. (In review)

Name: Burruss McDaniel

Born: 1927

Academic Training:

Degree	Year	Institution	Major
B.A.	1953	University of Alaska	Biological Sciences
M.S.	1961	Texas A & M University	Entomology
Ph.D.	1965	Texas A & M University	Entomology

Professional Experience:

Date	Position	Institution
1957-1959	Entomologist & Dir. Research	Insect Control & Res. Inc., Baltimore, Maryland
1959-1961	Graduate Assist., Entomol. Dep.	Texas A & M University
1961-1966	Department of Biology	Texas A & M University
1961-1966	Research Associate	Rob & Bessie Welder Wildl. Found., Stinton, Texas (Summers)
1966-	Associate Prof. Entomology	South Dakota State Univ.

Professional and Honorary Societies:

Kansas Entomological Society
Society for the Study of Evolution
AIBS
Entomological Society of America
Entomological Society of Washington, D. C.
American Ornithologists Union
South Dakota Academy of Science
Texas Academy of Science
Southwestern Association of Naturalists (Member of Board of Governors)
American Men of Science
Sigma Xi
Gamma Sigma Delta

Major Interests:

Taxonomy of mites and insects

Publications, Technical Reports:

McDaniel, B. and E. U. Balsbaugh, Jr. 1968. Bovine manure as an overwintering medium for Coleoptera in South Dakota. Ann. Entomol. Soc. Amer. 61:765-768.

McDaniel, B. 1968, 1969. The armored scale insects of Texas (Homoptera: Coccidea: Diaspididae). The Southwestern Natur. 13:201-241; 14:89-113; 14:270-291. Parts IV through VII in press.

Guad, J. And B. McDaniel. 1969. New genus for *Chauliacia tricapitosetosa* McDaniel. Acarologia 11:384-391.

Name: Lee D. Miller

Born: 1938

Academic Training:

Degree	Year	Institution	Major
B.S.E.	1961	University of Michigan	Math Engineering
B.S.E.	1962	University of Michigan	Civil Engineering
M.S.E.	1963	University of Michigan	Geodetic Engineering
Ph.D.	1968	University of Michigan	Forestry

Special Training:

NSF-sponsored three-week short course in digital electronics, Oregon State University, 1969.

Hewlett Packard Company, 1970. Manufacturer sponsored three-week training course in programming mini computers.

USFS-Summer faculty internship-planning section-USFS Region 6, Portland Oregon, 1973.

Professional Experience:

Date	Position	Institution
1960-1961	Administrative Assistant	University of Michigan
1962-1963	Computer Programmer	University of Michigan
1961-1963	Teaching Fellow	University of Michigan
1963-1968	Research Assistant	University of Michigan
1968-1970	Physical Scientist	U.S. Geological Survey
1968-1972	Assistant Professor	Colorado State University
1972-	Associate Professor	Colorado State University

Professional and Honorary Societies:

Sigma Xi	Michigan Acad. Sci., Arts, and Letters
American Society of Civil Engineering	Ecological Society of America
American Congress of Surveying & Map.	Society of American Foresters
American Society of Photogrammetry	American Geophysical Union
AAAS	AIBS

Major Interests:

The application of the techniques of remote sensing of environment to collect data of interest to the natural resource manager and scientist and to the urban and suburban planner; Bioclimatology, Micrometeorology, Systems Engineering, Instrumentation Engineering, Optical Radiation Properties of Natural Materials.

Current Professional Activities:

Member of a Standing Committee of the Colorado Natural Resource Center on Remote Sensing of Natural Resources.

Member, Computer Center Advisory Committee.

Teaching: Remote sensing of natural resources at the graduate and undergraduate level.

- Research:
1. Impact of remote sensing on urban watershed analysis (OWRR).
 2. Application of satellite, airborne and ground remote sensing systems to the measurement of the grasslands biomass, chlorophyll, and leaf water (IBP).
 3. Aerial thermal mapping of geothermal phenomena.
 4. Satellite measurement of urban and suburban land use (Bur. Outdoor Recreation).
 5. Computer modelling of landscapes and computer geographic land use planning (USFS).

Publications, Technical Reports:

- Miller, L. D. 1963. Scintillation and the surveyor. J. Surveying & Mapping, Proc. ASCE 89(SU-1):13-25.
- Miller, L. D. 1965. Diurnal and seasonal variations in the radiation of objects and backgrounds, 4.5-5.5 μ spectral region. Inst. of Sci. & Tech., Rep. #6400-32-T, Univ. Michigan, Ann Arbor. 42 p. CONFIDENTIAL.
- Miller, L. D. 1965. Investigation of a method for remote detection and analysis of life on a planet. Inst. of Sci. & Tech., Rep. #6590-4-F, Univ. Michigan, Ann Arbor. 33 p.
- Miller, L. D. 1966. Location of anomalously hot earth with infrared imagery in Yellowstone National Park. Proc. Fourth Symp. of Remote Sensing of Environment, Univ. Michigan, Infrared Physics Lab., Inst. of Sci. & Tech., Ann Arbor, p. 751-769.
- Miller, L. D. 1966. Report to the Sixth Yellowstone Field Research Expedition. Final Report - Sixth Yellowstone Field Research Expedition, Publ. #37, Atmospheric Sciences Res. Center, State Univ. of New York, Albany, p. 92-98.
- Miller, L. D. 1966. Determination of mass and distribution of mass from thermal infrared imagery. Inst. of Sci. & Tech., Rep. #6400-48-S, Univ. Michigan, Ann Arbor. 31 p.
- Miller, L. D. 1967. Report to the Seventh Yellowstone Field Research Expedition. Final Report - Seventh Yellowstone Field Research Expedition, Publ. #45, Atmospheric Sciences Res. Center, State Univ. of New York, Albany, p. 112-120.
- Miller, L. D. 1968. Winter observations on steaming ground in Yellowstone National Park, 1968. Eighth Yellowstone Field Research Expedition, Publ. #68, Atmospheric Sciences Res. Center, State Univ. of New York, Albany, p. 133-148.
- Miller, L. D. 1968. Steaming and warm ground in Yellowstone National Park: Its location, geophysics, vegetation, and mapping with aerial multi-spectral imagery. Ph.D. Thesis, Dept. Forestry, Univ. Michigan, Ann Arbor. 153 p.

- Miller, L. D. 1969. Measurement of resource environments with airborne thermal mappers - where do we stand? Proc. Purdue Centennial Year Symp. on Information Processing, Dept. Electrical Engineering, Purdue Univ., Lafayette, Indiana. 17 p.
- Miller, L. D. and C. C. Cooper. 1969. Analysis of environmental and vegetative gradients in Yellowstone National Park from remote multispectral sensing. In P. Johnson [ed.] Remote sensing in ecology. Univ. Georgia Press, Athens, p. 108-231.
- Miller, L. D. and R. L. Pearson. 1969. A field light quality laboratory--initial experiment. Dep. of Watershed Sci., Incidental Rep. 1. Colorado State Univ., Fort Collins. 16 p.
- White, D. E. and L. D. Miller. 1969. Geothermal infrared anomalies of low intensity, Yellowstone National Park. Report on Mission Results, NASA Aircraft Project - Earth Resources Program, Manned Spacecraft Center. 4 p.
- Miller, L. D. 1970. Remote sensing for recreation managers. Rocky Mountain - High Plains Park and Rec. Jour. 5(1):30-31.
- Miller, L. D. 1970. Identification of urban watershed units using remote multispectral sensing. Annual Rep. to the Office of Water Resources Res. Colorado State Univ., Dep. of Watershed Sci., Fort Collins. 4 p.
- Miller, L. D. and R. L. Pearson. 1971. Aerial mapping program of the IBP Grassland Biome: remote sensing of the productivity of the shortgrass prairie as input into a biosystem model. Proc. Seventh International Symp. on Remote Sensing of the Environ. Univ. Michigan, Willow Run Labs, Ann Arbor, p. 165-207.
- Oliver, R. E. and L. D. Miller. 1971. The design of a landscape model, Central Basin Watershed. U.S. IBP Grassland Biome Tech. Rep. No. 89. Colorado State Univ., Fort Collins. 19 p.
- Pearson, R. L. and L. D. Miller. 1971. A field light quality laboratory--initial experiment: the measurement of percent of functioning vegetation in grassland areas by remote sensing methodology. U.S. IBP Grassland Biome Tech. Rep. No. 90. Colorado State Univ., Fort Collins. 24 p.
- Pearson, R. L. and L. D. Miller. 1971. Design of a field spectrometer laboratory. Dep. of Watershed Sci., Sci. Ser. No. 2. Colorado State Univ., Fort Collins. 102 p.
- Tucker, C. J. and L. D. Miller. 1971. Remote sensing of nature--technical document library/a detailed description of the software utilized (rough draft). Dep. of Watershed Sci., Incidental Rep. No. 2. Colorado State Univ., Fort Collins. 157 p.
- Miller, L. D. 1972. Remote spectral measurement as a method for determining plant cover. U.S. IBP Grassland Biome Tech. Rep. No. 167. Colorado State Univ., Fort Collins. 46 p.

- Miller, L. D. 1972. Programmer's manual for RECOG (pattern RECOgnition programs). Dep. of Watershed Sci., Sci. Ser. No. 3C. Colorado State Univ., Fort Collins. 216 p.
- Miller, L. D. 1972. Passive remote sensing of natural resources/a work-book. Dep. of Watershed Sci., Sci. Ser. No. 4. Colorado State Univ., Fort Collins. 300 p.
- Ells, T. D., L. D. Miller and J. A. Smith. 1972. User's manual for RECOG (pattern RECOgnition programs). Dep. of Watershed Sci., Sci. Ser. No. 3B. Colorado State Univ., Fort Collins. 85 p.
- Root, R. R. and L. D. Miller. 1972. Identification of urban watershed units using remote multispectral sensing. Office of Water Resources Res. Completion Rep. 29, Environ. Res. Cen. Colorado State Univ., Fort Collins. 105 p.
- Smith, J. A., L. D. Miller and T. D. Ells. 1972. Pattern recognition routines for graduate training in the automatic analysis of remote sensing imagery - RECOG. Dep. of Watershed Sci., Sci. Ser. No. 3A. Colorado State Univ., Fort Collins. 86 p.
- Miller, L. D. 1973. Remote mapping of standing crop biomass for estimation of the productivity of the shortgrass prairie, Pawnee National Grasslands, Colorado. Proc. Eighth International Symp. on Remote Sensing of the Environ. Univ. Michigan, Willow Run Labs, Ann Arbor, p. 1357-1381.
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- Pearson, R. L. and L. D. Miller. 1973. The biometer/a handheld grassland biomass meter. Dep. of Watershed Sci., Incidental Rep. 6. Colorado State Univ., Fort Collins. 16 p.
- Tucker, C. J., L. D. Miller and R. L. Pearson. 1973. Measurement of the combined effects of green biomass, chlorophyll, and leaf water on canopy spectrereflectance of the shortgrass prairie. Proc. Second Annual Remot Sensing of Earth Resources Conf., Space Inst. Univ. Tennessee, Tullahoma. 13 p.

Name: Julius G. Nagy

Born: 1925

Academic Training:

Degree	Year	Institution	Major
B.S.	1960	Wayne State University	Microbiology
M.S.	1963	Colorado State University	Nutrition
Ph.D.	1966	Colorado State University	Nutrition

Special Training:

1963 Rumen microbiology techniques with Dr. Marvin P. Bryant, U.S.D.A., Beltsville, Maryland

1964 Gas-chromatography course, University of Colorado, Boulder.

Professional Experience:

Date	Position	Institution
1971-1972	NSF Science Faculty Fellowship	University of Sopron, Hungary
Present	Associate Professor	Colorado State University

Professional and Honorary Societies:

Sigma Xi	Wildlife Soc.
Pi Kappa Pi	AAAS
Nutrition Institute (Executive Committee)	

Major Interests:

Nutrition of wild and domestic ruminants.
Metabolic reactions in rumen.

Current Professional Activities:

Teaching: Wildlife Nutrition

Research: Deer starvation studies,
Energy and nutrient transfer through the pronghorn antelope.
Selectivity of juniper species by deer.

Publication, Technical Reports:

Nagy, J. G., G. Vidacs, and G. M. Ward. 1962. *In vitro* studies on alfalfa hay substrate using deer, cows, sheep, and cattle as rumen fluid donor. (Abstr.) J. Dairy Sci. 45:69.

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- Nagy, J. G. 1967. Artificial feeding of big game, p. 75 to 77. In D. L. Gilbert [ed.] Proc. 3rd Ann. Short Course in Game and Fish Management.
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- O'Farrell, T.P. 1964. Incorporation of 5-¹³¹I-iodo-2'-deoxyuridine into the DNA of indigenous mammals, p. 83-84. In S. I. Auerbach et al. Health Physics Div. Annu. Progress Rep. ORNL-3697.
- Cosgrove, G.E. and T.P. O'Farrell. 1965. Papillomas and other lesions in the stomachs of pine mice. J. Mammal. 46:510-513.
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- O'Farrell, T.P. 1965. Home range and ecology of snowshoe hares in interior Alaska. J. Mammal. 46:406-418.
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- O'Farrell, T.P. 1968. Radiation effects in free-ranging pocket mice, p. 8.10-8.12. In R. C. Thompson and E. G. Swezea [ed.] Pacific Northwest Lab. Annu. Rep. for 1967 in the Biol. Sci.
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- O'Farrell, T.P. and R.O. Gilbert. 1970. Radiation effect in free ranging pocket mice, p. 2.13-2.15. In B. E. Vaughan et al. Pacific Northwest Lab. Annu. Rep. for 1969 in the Ecological Sci. Rep. No. (BNWL-1306) Part II.
- O'Farrell, T.P., J.D. Hedlund, J.V. Dilley and K.E. McDonald. 1970. Relationship between radiation responses and cyanide toxicity in native mammals, p. 2.15-2.17. In B. E. Vaughan et al. Pacific Northwest Lab. Annu. Rep. for 1969 in the Ecological Sci. Rep. No. (BNWL-1306) Part II.
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- O'Farrell, T. P. and J. D. Hedlund. 1972. White-tailed deer, *Odocoileus virginianus*, in south-central Washington. J. Mammal. 53:907-909.
- O'Farrell, T. P. 1972. Ecological distribution of sagebrush voles, *Lagurus curtatus*, in south-central Washington. J. Mammal. 53:632-636.
- O'Farrell, T. P., J. D. Hedlund, R. A. Gies, R. J. Olson, and R. O. Gilbert. 1972. Small mammal studies on the Ale Reserve, 1971. U. S. IBP Grassland Biome Tech. Report No. 174, Colorado State Univ., Fort Collins, 31 pp.
- O'Farrell, T. P., J. D. Hedlund, R. J. Olson, and R. O. Gilbert. 1973. Radiation effects in free-ranging pocket mice, *Perognathus parvus*, during the breeding season. Science, 179:289-291.
- O'Farrell, T. P., J. D. Hedlund, R. A. Gies, and R. E. Fitzner. 1973. Small mammal studies on the Ale Reserve, 1972. U.S. IBP Grassland Biome Tech. Report, Colorado State Univ., Fort Collins. (In preparation)
- O'Farrell, T. P. 1973. Effects of acute radiation in captive and free-ranging pocket mice, *Perognathus parvus*. In D. J. Nelson [ed.] Third National Symposium on Radioecology. (In press)

Name: Richard R. Olendorff

Born: 1943

Academic Training:

Degree	Year	Institution	Major
B.S.	1967	University of Washington	Zoology
Ph.D.	1971	Colorado State University	Zoology

Professional Experience:

Year	Position	Institution
1970-1971	Graduate Teaching Asst.	Colorado State University
1971-1972	Post-doctoral Fellowship	American Museum of Natural History
1972-1972	Researcher	International Biological Program Grassland Biome
1972-	Field Associate	American Museum of Natural History

Professional and Honorary Societies:

Phi Theta Kappa	Cooper Ornithological Society
American Ornithologists' Union	North American Falconers' Association
Sigma Xi	

Current Professional Activities:

Editor of Raptor Research, a professional journal published by the Raptor Research Foundation, Inc.
Consulting for the Natural Resource Ecology Laboratory, Colorado State University.
Consulting for the Battelle Institute, Richland, Washington.

Publications, Technical Reports:

- Olendorff, R. R. 1964. Classification of the Gyrfalcon. Jour. North Amer. Falconers' Assoc. 3(1):31-33.
- Olendorff, R. R. 1966. For those who missed it -- Yakima, Washington falconry meet, '65. Hawk Chalk 5(1) Northwest Supplement:6-8.
- Olendorff, R. R. 1966. How much sharper (Editorial). Hawk Chalk 5(1) Northwest Supplement:3-6.
- Olendorff, R. R. 1967. On establishing the flying weight and a weekly feeding cycle in the Cooper's Hawk. Hawk Chalk 6(3):26-30.
- Olendorff, R. R. April, 1967, to December, 1968. Edited Hawk Chalk Vol. 6, Nos. 1-3, and Vol. 7, No. 1. Also edited the 1967 and 1968 Jour. North Amer. Falconers' Assoc. Total output 368 pages in 6 issues.
- Olendorff, R. R. 1968. A contribution to the breeding behavior of the American Kestrel in captivity. Raptor Res. News 2(4):77-92. October.
- Olendorff, R. R. and E. S. Freienmuth. 1968. Colorado rabbit hawking. Jour. North Amer. Falconers' Assoc. 7(1):32-36.

- Olendorff, R. R. 1968-1970. An extensive bibliography on falconry, eagles, hawks, falcons and other diurnal birds of prey. Part I, 78 p.; Part II, p. 79-168; Part III, p. 169-244. Approximately 7,500 entries. Privately printed limited edition of 1,000 copies.
- Olendorff, R. R. 1969. 1969 NAFA Peregrine Symposium and Business Meeting. Hawk Chalk 8(2):23-25.
- Olendorff, R. R. 1969. What can you do about it? (Editorial). Hawk Chalk 8(2):28-30.
- Olendorff, R. R. 1971. Falconiform reproduction; a review. Part 1. The pre-nestling period. Raptor Research Foundation Raptor Research Report No. 1. Vermillion, South Dakota, February, 1971. 111 p.
- Olendorff, R. R. 1971. Hawk observations, Spring 1971. Ptarmigan 2(6):5.
- Olendorff, R. R. 1971. Morphological aspects of growth in three species of hawks. Ph.D. Diss. Colorado State Univ., Fort Collins. 460 p.
- Olendorff, R. R. 1971. Morphological aspects of growth in three species of hawks. Dissertation Abstracts 32:3081B-3082B.
- Olendorff, R. R. 1972. Eagles, sheep and power lines. Colorado Outdoors 21(1):3-11. Also, Colorado Wildlife Federation News 6(6):3-4.
- Olendorff, R. R. 1972. Pawnee National Grassland -- early nesting raptors. Ptarmigan 3(4):2. April.
- Olendorff, R. R. 1972. The large birds of prey of the Pawnee National Grassland: nesting habits and productivity. U.S. IBP Grassland Biome Tech. Rep. No. 151. Colorado State Univ., Fort Collins. 59 p.
- Olendorff, R. R. 1972. The role of birds of prey as predators. In A. T. Cringan and L. D. Harris [eds.] Predation and its management.
- Olendorff, R. R. 1972. Comments on rearing young buteos. Raptor Res. 6(1):6-10.
- Olendorff, R. R. 1972. Weighing and measuring raptors. Raptor Res. 6(2):53-56.
- Olendorff, R. R. 1973. Habitat use and nesting at man-created nest sites by grassland raptors. Wilson Bull. (In press).
- Olendorff, R. R. 1973. Quantitative aspects of growth in three buteos. Raptor Res. (In press).
- Olendorff, R. R. 1973. The ecology of the nesting birds of prey of north-eastern Colorado. U.S. IBP Grassland Biome Tech. Rep. No. 211. Colorado State Univ., Fort Collins. 234 p. (In press).
- Olendorff, R. R. 1973. Golden eagle country. Alfred A. Knopf Publishers. (In preparation).

- Olendorff, R. R. and R. W. Fyfe. 1973. The dangers of raptor nesting studies. (In preparation).
- Olendorff, R. R. and J. W. Stoddart, Jr. 1973. Suggested future research toward effective raptor management. (In preparation).
- Olendorff, R. R. 1973-1974. An extensive bibliography on falconry, eagles, hawks, falcons and other diurnal birds of prey. Two parts. (In preparation).
- Olendorff, R. R. and D. Amadon. 1973-1974. An annotated bibliography of major works on raptorial birds. (In preparation).

Name: Robert L. Packard

Born: 1928

Academic Training:

Degree	Year	Institution	Major
B.S.	1951	University of Nebraska	Zoology and Botany
M.A.	1955	University of Kansas	Zoology
Ph.D.	1960	University of Kansas	Zoology

Special Training:

Marine Biological Laboratories, Duke University, Summer 1956; U. S. National Museum, Division of Mammals, Smithsonian Institution, Summer Intern 1957.

Professional Experience:

Date	Position	Institution
Summer 1959	Instructor	University of Kansas
1959-1962	Assistant Professor	Stephen F. Austin State University
1962-1965	Assistant Professor	Texas Tech University
1965-1967	Associate Professor	Texas Tech University
1967-	Professor	Texas Tech University
1967-1968	Assistant Dean of Graduate School	Texas Tech University
1971-	Coordinator of research The Museum	Texas Tech University

Professional and Honorary Societies:

American Society of Mammalogists	Sigma Xi
Southwestern Association of Naturalists	AAAS
Society for the Study of Evolution	Beta Beta Beta
Society of Systematic Zoology	Phi Sigma
Texas Academy of Sciences (Fellow)	Biological Society of Washington, D.C.

Major Interests:

Taxonomy, ecology, and life history of North American mammals with particular reference to those in the grasslands.

Current Professional Activities:

President, Southwestern Association of Naturalists
Member of the Board of Directors - The American Society of Mammalogists
Institutional Representative to the Organization for Tropical Studies
Institutional Representative to Regional Arid Land Information Network
Teaching: Natural History of Vertebrates
Mammalogy
Zoogeography
General Zoology
Special Seminars

Research: Taxonomy of mammals of the southern High Plains
Ecological studies of mammals on the desert-grassland ecotone

Publication, Technical Reports:

- Packard, R. L. 1950. Notes on the nesting of the black crowned night heron at the Valentine National Wildlife Refuge. The Nebraska Bird Rev. 18:63-64.
- Packard, R. L. 1951. Lead Poisoning of waterfowl in Lancaster County, Nebraska. Nebraska Acad. Sci. Proc. p. 31.
- Packard, R. L. 1954. Notes on the defensive behavior of gray and fox squirrels while moving their young. Kansas Acad. Sci. Trans. 57:471-472.
- Packard, R. L. 1955. Great horned owl attacking squirrel nests. The Wilson Bull. 66:272.
- Fitch, H. S. and R. L. Packard. 1955. The coyote on a natural area in northeastern Kansas. Kansas Acad. Sci. Trans. 58:211-221.
- Packard, R. L. and H. J. Stains. 1955. Occurrence of the mink west of the hundredth meridian in Kansas. Kansas Acad. Sci. Trans. 58:222-224.
- Packard, R. L. 1955. Release, dispersal, and reproduction of fallow deer in Nebraska. J. Mammal. 36:471-473.
- Packard, R. L. 1955. Pileated woodpecker and American woodcock in southeastern Kansas. Kansas Ornith. Soc. Bull. 3:15.
- Packard, R. L. 1956. The tree squirrels of Kansas: Ecology and economic importance. Univ. Kansas Mus. Nat. Hist. Misc. Pub. 11:1-67.
- Jones, J. K. Jr. and R. L. Packard. 1956. *Feresa intermedia* (Gray) pre-occupied. Biol. Soc. Wash. Proc. 69:167-168.
- Packard, R. L., E. R. Hall, S. A. Anderson, and J. K. Jones, Jr. 1957. Vernacular names for North American mammals north of Mexico. Univ. Kansas Mus. Nat. Hist. Misc. Pub. 14:1-16.
- Packard, R. L. 1957. Broad-winged hawk in Coahuila. The Wilson Bull. 69:370.
- Jones, J. K. Jr. and R. L. Packard. 1958. *Myotis keeni septentrionalis* in South Dakota. J. Mammal. 39:150.
- Packard, R. L. 1958. Carnivorous behavior in the Mexican ground squirrel. J. Mammal. 39:154.
- Packard, R. L. 1958. The taxonomic status of *Peromyscus allex* Osgood. Biol. Soc. Washington Proc. 71:17-20.
- Packard, R. L. 1958. New subspecies of the rodent *Baiomys* from Central America. Univ. Kansas Pub. Mus. Nat. Hist. 9:399-404.
- Packard, R. L. 1959. First record of the pygmy mouse in New Mexico. J. Mammal. 40:146.
- Packard, R. L. 1960. Speciation and evolution of the pygmy mice, genus *Baiomys*. Univ. Kansas Grad. School Mus. Nat. Hist. Pub. p. 1-4.

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- Webb, R. G. and R. L. Packard. 1961. Notes of some amphibians and reptiles from eastern Texas. Southwestern Natur. 6:105-107.
- Packard, R. L. 1961. Additional records of mammals from eastern Texas. Southwestern Natur. 6:193-195.
- Packard, R. L. 1963. Distribution of the black-tailed jackrabbit in eastern Texas. Texas J. Sci. 15:107-110.
- Packard, R. L., G. Stephenson, and P. Goodrum. 1963. Small rodents as consumers of pine seed in eastern Texas uplands. J. Forest. 61:523-526.
- Packard, R. L. and H. Garner. 1964. Arboreal nests of the golden mouse in eastern Texas. J. Mammal. 45:369-374.
- Packard, R. L. and H. Garner. 1964. Records of some mammals from the Texas High Plains. Texas J. Sci. 16:387-390.
- Packard, R. L. 1965. Range extension of the hooded skunk in Texas and Mexico. J. Mammal. 46:102.
- Packard, R. L. and T. Alvarez. 1965. Description of a new species of fossil *Baiomys* from the Pleistocene of Central Mexico. Acta Zool. Mexicana 7:1-4.
- Packard, R. L. 1965. Geographic variation and evolution of high plains fox squirrel populations. Yearbook of the Amer. Phil. Soc. Annu. Rep. 288-290.
- Packard, R. L. 1966. *Myotis austroriparius* in Texas. J. Mammal. 47:128.
- Packard, R. L. 1966. Notes on mammals from Washington Parish, Louisiana. J. Mammal. 47:323-325.
- Packard, R. L. 1967. Octodontoid, Bathyergoid, and Ctenodactyloid Rodents, p. 273 to 290. In S. A. Anderson and J. K. Jones, Jr. [ed.] Recent mammals of the world. Ronald Press Co., New York.
- Harvey, M. K. and R. L. Packard. 1967. Cotton rats fail to damage southern pine seedlings. J. Forest. 65:495-497.
- Packard, R. L. and F. W. Judd. 1967. Two noteworthy records of bats from Chihuahua. Southwestern Natur. 12:332.
- Schmidly, D. J. and R. L. Packard. 1967. Swimming ability in pocket mice. Southwestern Natur. 12:480-482.
- Packard, R. L. 1968. An ecological study of the fulvous harvest mouse, *Reithrodontomys fulvescens* in eastern Texas. Amer. Midland Natur. 79:68-88.
- Packard, R. L. and F. Judd. 1968. Comments on some mammals from western Texas. J. Mammal. 49:535-538.

- Packard, R. L. 1969. Taxonomic review of the golden mouse, *Ochrotomys nuttalli*, p. 373 to 406. In J. K. Jones, Jr. [ed.] Contributions in mammalogy. Univ. Kansas Mus. Natur. Hist. Misc. Pub. 51.
- Packard, R. L. and J. Hoyt Bowers. 1970. Distributional notes on some foxes from western Texas. Southwestern Natur. 14:450-451.
- Packard, Robert L. 1970. The guinea pig. Encycl. Amer. 13:558-559.
- Packard, Robert L. 1970. Gundi. Encycl. Amer. 13:614-615.
- Packard, Robert L. 1970. Hutias. Encycl. Amer. 14:620.
- Packard, Robert L. 1971. The Suidae. Encycl. Amer. 14.
- Packard, Robert L. 1971. Research programs and their relevance to teaching, p. 26-29. In G. W. Thomas and W. Cave [ed.] Higher Education for the Texas Agricultural Industry. Coordinating Board Texas College and University System, Paper 11, Austin.
- Packard, Robert L. and Tony R. Mollhagen. 1971. Bats of Texas Caves, p. 122-132. In E. L. Lundelius and B. H. Slaughter [ed.] Natural History of Texas Caves. Gulf Natural History, Dallas.
- Packard, Robert L. 1971. Mammals of Grand Canyon. A Review. The Southwestern Natur. 16.
- Packard, Robert L. 1971. Small mammals survey on the Jornada and Pantex Sites. U.S. IBP Grassland Biome Tech. Rep. No. 114. Colorado State Univ., Fort Collins. 48 p.
- Packard, Robert L. 1972. Small mammal studies on Jornada and Pantex Sites. U.S. IBP Grassland Biome Tech. Rep. No. 188. Colorado State Univ., Fort Collins. 81 p.
- Packard, Robert L. and E. G. Bolen. Golden Eagle-livestock relationships: A Survey. Special Report No. 20, International Center for Arid and Semi-arid Land Studies. Texas Tech Univ. 82 p.

Name: William J. Parton, Jr.

Born: 1944

Academic Training:

Degree	Year	Institution	Major
B.S.	1966	Pennsylvania State University	Meteorology
M.S.	1968	University of Oklahoma	Meteorology
Ph.D.	1972	University of Oklahoma	Meteorology

Special Training:

Ford Foundation Workshop - Ecological Effects of Weather Modification, Albuquerque, New Mexico. June 16-17, 1969

Professional Experience:

Year	Position	Institution
1966-1968	Research Assistant	University of Oklahoma
1966-1968	Teaching Assistant	University of Oklahoma
1968-1971	Special Instructor	University of Oklahoma
1971-	Post Doctoral Fellowship	Natural Resource Ecology Laboratory

Professional and Honorary Societies:

Chi Epsilon Pi
Sigma Xi

Major Interests;

Ecosystem Modeling
Applied and Synoptic Meteorology

Current Professional Activities:

Computer Programming, Ecological Modeling

Publications, Technical Reports:

- Parton, W. J. 1968. The application of hourly surface data to the development of short range forecasting techniques. M.S. Thesis. University of Oklahoma, Norman.
- Parton, W. J. and A. Eddy. 1970. An atmosphere-oriented ecosystem simulation model. Oklahoma Acad. of Sci.
- Parton, W. J. and A. Eddy. 1970. A numerical model of human population dynamics influenced by a polluted environment. Proc. AMS 2nd Natl. Conf. on Weather Modification.

- Parton, W. J. and A. Eddy. 1970. A meteorologically influenced urban-rural ecosystem. A 16 mm movie showing results from a computer model of an urban-rural ecosystem.
- Parton, W. J. 1972. Development of an urban-rural ecosystem model. Ph.D. Diss. University of Oklahoma, Norman.
- Parton, W. J. and G. S. Innis. 1972. Some graphs and their function forms. U.S. IBP Grassland Biome Tech. Rep. No. 153. Colorado State Univ., Fort Collins. 41 p.
- Anway, J. C., E. G. Brittain, H. W. Hunt, G. S. Innis, and W. J. Parton. 1972. ELM: Version 1.0. U.S. IBP Grassland Biome Tech. Rep. No. 156. Colorado State Univ., Fort Collins. 285 p.
- Parton, W. J. and J. K. Marshall. 1973. MODENV: A grassland ecosystem model. Paper to be published in the proceedings of Summer Computer Simulation Conference, July 17-19.

Name: Leonard F. Paur

Born: 1941

Academic Training:

Degree	Year	Institution	Major
B.S.	1964	University of North Dakota	Biology & Physical Sciences
M.S.	1971	Colorado State University	Wildlife Biology

Special Training:

Aviation

Professional Experience:

Date	Position	Institution
1964-1965	Secondary Science/Math Instructor	
1965-1968	Army Aviator/Flight Instructor	
1968-1971	Graduate Research Assistant	Colorado State University
1971-1972	Research Assistant	Environmental Impact Analyst's Fort Collins, Colorado
1972-	Research Data Analyst	Colorado State University U.S. IBP

Professional and Honorary Societies:

Wildlife Society

Major Interests:

Population Dynamics and Movements of Animals
Simulation Modeling of Ecosystems

Current Professional Activities:

Data Analysis
Simulation Modelling

Publications, Technical Reports:

Paur, L. F. 1968. Dietary competition between mule deer and meadow mice. Dietary competition among herbivores - Papers from a joint Graduate Seminar between Wildlife Biology and Range Science. Colo. State Univ., Ft. Collins. P. 66-76.

Paur, L. F. 1971. Establishment patterns of bitterbrush. M.S. Thesis. Colo. State Univ. Lib., Ft. Collins. 144 p.

Harris, L.D., and L. Paur. 1972. A quantitative food web analysis of a shortgrass community. U.S. IBP Grassland Biome Tech. Rep. No. 154. Colo. State Univ., Fort Collins. 22 p.

Paur, L. F. 1972. How simulation models may be constructed. Predation and its management - papers from a joint Graduate Seminar between Wildlife Biology and Natural Resource Ecology Laboratory. Colo. State Univ., Ft. Collins. p. 37-44.

Name: Robert M. Pengra

Born: 1926

Academic Training:

Degree	Year	Institution	Major
B.S.	1951	South Dakota State University	Bacteriology
M.S.	1953	South Dakota State University	Bacteriology
Ph.D.	1959	University of Wisconsin	Bacteriology

Professional Experience:

Date	Position	Institution
1951-1953	Research Assistant	South Dakota State Univ.
1954-1957	Research Assistant	Univ. Wisconsin
1957-1962	Assistant Prof., Bacteriology	South Dakota State Univ.
1962-1967	Associate Prof., Bacteriology	South Dakota State Univ.
1966-1967	Research Associate	Cornell Univ. (Sabbatical Leave)
1967-1968	Prof., Bacteriology	South Dakota State Univ.
1968-	Prof. and Head, Bacteriology	South Dakota State Univ.

Major Interests:

Mechanism of biological nitrogen fixation in soil organisms.
 Ecological significance of biological nitrogen fixation in soil.
 Nitrogen fixation by nonleguminous, symbiotic, plant-microbe systems.
 Native leguminous plants of grasslands and their associated rhizobia.

Professional and Honorary Societies:

American Society for Microbiology	Canadian Society of Microbiologists
AAAS (Fellow)	South Dakota Academy of Science
Gamma Sigma Delta	Sigma Xi
AIBS	

Publications, Technical Reports:

Pengra, R. M., M. A. Cole, and M. Alexander. 1968. Cell walls and lysis of *M. parvispor* Hyphae. J. Bacteriol. 97:1056-1061.

Todd, R. L., R. M. Pengra, and P. R. Middaugh. 1967. Acetylene and nitrogen fixation by *K. pneumoniae*. Proc. Can. Soc. Microbiol. p.2. (Abstr.)

Patil, R. B., R. M. Pengra, and D. C. Yoch. 1967. Effects of nitrogen supplements on nitrogen fixation by *Aerobacter aerogenes*. Biochem et Biophysica Acta 136:1-5.

Yoch, D. C. and R. M. Pengra. 1966. Effect of amino acids of the nitrogenase system of *Klebsiella pneumoniae*. J. Bacteriol. 92:618-622.

Pengra, R. M. 1964. A survey of some culture of the genus *Aerobacter* for nitrogen fixation. Bacteriol. Proc. A48. (Abstr.)

Stangeland, Ronald J. and R. M. Pengra. 1970. Endophyte of a nonleguminous nitrogen-fixer. American Society for Microbiology, Proceedings 1970 Abstracts 70th Annual Meeting p. 1.

*Turner, Jack and R. M. Pengra. 1971. Decomposer studies at the Cottonwood Site. U.S. IBP Grassland Biome Tech. Rep. No. 126. Colorado State Univ., Fort Collins. 15 p.

*Pengra, R. M. 1972. Cellulose and litter decomposition and evolution of carbon dioxide from soils at the Cottonwood Site, 1971. U.S. IBP Grassland Biome Tech. Rep. No. 170. Colorado State Univ., Fort Collins. 20 p.

Name: Robert E. Pfadt

Born: 1915

Academic Training:

Degree	Year	Institution	Major
B.A.	1938	University of Wyoming	
M.A.	1940	University of Wyoming	
Ph.D.	1948	University of Minnesota	

Professional Experience:

Date	Position	Institution
1938	Research Assistant	Wyoming Game and Fish Commission
1939	Research Assistant	U.S. Department of Agriculture
1940-43	Research Assistant	University of Wyoming
1943-48	Assistant Professor	University of Wyoming
1948-54	Associate Professor	University of Wyoming
1954-68	Professor	University of Wyoming
1966-67	Plant Protection Advisor	Wyoming Team, Kabul Afghanistan
1967-68	Chief of Party	Wyoming Team, Kabul Afghanistan
1968-	Department Head and Professor	University of Wyoming

Major Interests:

Insect ecology; teaching of insect ecology and insect population dynamics.

Professional and Honorary Societies:

American Association for the Advancement of Science
Sigma Xi
Phi Kappa Phi
Entomological Society of America
Entomological Society of Canada
Royal Entomological of London
Kansas Entomological Society

Publications, Technical Reports:

Pfadt, R. E. 1947. Effects of temperature and humidity on larval and pupal stages of the common cattle grub. J. Econ. Entomol. 40:293-300.

Pfadt, R. E. 1949. Range grasshoppers as an economic factor in the production of livestock. Wyoming Range Manage. 7:1-7.

Pfadt, R. E. 1949. Food-plants, distribution, and abundance of the big-headed grasshopper, *Aulocara ellioti* (Thos.). J. Kansas Entomol. Soc. 22:69-74.

- Pfadt, R. E. 1949. Food plants as factors in the ecology of the lesser migratory grasshopper, *Melanoplus mexicanus* (Sauss.). Wyoming Agr. Exp. Sta. Bull. 290. 51 p.
- Pfadt, R. E. 1964. The role of rangeland grasshoppers as scavengers. J. Kansas Entomol. Soc. 37:1-4.
- Pfadt, R. E. 1965. Insects collected on Wyoming rangeland in connection with grasshopper-egg sampling. J. Kansas Entomol. Soc. 38:61-66.
- Pfadt, R. E. 1965. Key to Wyoming grasshoppers, Acrididae and Tetrigidae. Mimeo Circ. 210. 25 p.
- Pfadt, R. E. 1966. Parasites and predators of Wyoming rangeland grasshoppers. Wyoming Agr. Exp. Sta. Sci. Monogr. 3. 31 p.
- Pfadt, R. E. 1969. A new species of *Eremocharis* (Orthoptera: Pamphagidae) from Afghanistan. Can. Entomol. 101:545-548.
- Pfadt, R. E. 1970. A new grasshopper genus and species from Afghanistan (Pamphagidae: Orthoptera). Roy. Entomol. Soc. London, Proc. B 39:21-26.
- Pfadt, R. E. 1970. Manner of pickup of ULV malathion by grasshoppers from aerially sprayed rangeland. J. Econ. Entomol. 63:1210-1214.
- Pfadt, R. E. 1970. A new species of *Egnatioides* (Orthoptera: Acrididae) from Afghanistan. Can. Entomol. 102:1542-1545.
- Pfadt, Robert E. 1972. Orthoptera of the Pawnee Site. 1972. U. S. IBP Grassland Biome Tech. Report No. 174. Colorado State Univ., Fort Collins. 49 p.
- Pfadt, R. E. and D. S. Smith. 1972. Net reproductive rate and capacity for increase of the migratory grasshopper, *Melanoplus sanguinipes sanguinipes* (F.) Acrida 1:149-165.
- Kumar, R., R. J. Lavigne, J. E. Lloyd, R. E. Pfadt, J. Chu, R. R. Grow, and L. E. Rogers. 1972. Insects of the Pawnee Site. U. S. IBP Grassland Biome Tech. Report No. 172. Colorado State Univ., Fort Collins. 44 p.
- Lloyd, J. E., R. E. Pfadt, M. Ali, and G. Sharafi. 1972. The residual toxicity to *Aulocara ellioti* of ULV malathion extended with polyester resin. J. Econ. Entomol. 65:387-390.

Name: Rex D. Pieper

Born: 1934

Academic Training:

Degree	Year	Institution	Major
B.S.	1956	University of Idaho	Wildlife Management
M.S.	1958	Utah State University	Range Management
Ph.D.	1963	University of California, Berkeley	Plant Ecology

Professional Experience:

Date	Position	Institution
1957-1958	Research Assistant	Utah State Univ.
1959-1963	Research Assistant	Univ. California
1963-1969	Assistant Professor, Range Science	New Mexico State Univ.
1969-	Associate Professor	New Mexico State Univ.

Professional and Honorary Societies:

American Society of Range Management
Ecological Society of America
Sigma Xi
AAAS
American Society of Animal Science
AIBS

Major Interests:

Productivity and nutrient cycles in terrestrial ecosystems; role of grazing animals in range ecosystems; vegetative manipulations

Publications, Technical Reports:

- Pieper, R. D., C. W. Cook, and L. E. Harris. 1959. Effect of intensity of grazing upon nutritive content of the diet. J. Animal Sci. 18:1031-1037.
- Pieper, R. C. and H. H. Bixwell. 1961. Relationship between trees and cattle in ponderosa pine. California Agr. 15:12.
- Gibbens, R. P. and R. D. Pieper. 1962. The response of browse plants to fertilization. California Fish & Game 48:268-281.
- Pieper, R. D. 1963. Production and chemical composition of Arctic tundra vegetation and their relation to the Lemming cycle. Ph.D. Thesis, Univ. California, Diss. Abstr. 24:3943.
- Groce, V. L. and R. D. Pieper. 1967. Cover, herbage production and botanical composition on foothill range sites in southcentral New Mexico. New Mexico State Univ. Agr. Exp. Sta. Res. Rep. 128.
- Dwyer, D. D. and R. D. Pieper. 1967. Fire effects on blue grama-pinyon-juniper rangeland in New Mexico. J. Range Manage. 20:359-362.

- Pieper, R. D. 1967. Comparison of vegetation on three grazed and ungrazed sites in southcentral New Mexico. J. Range Manage. 20th Annu. Meeting. (Abstr.)
- Pieper, R. D. and D. D. Dwyer. 1968. Response of blue grama vegetation to cholla cactus control. J. Range Manage. 21st Annu. Meeting. (Abstr.)
- Pieper, R. D. 1968. Comparison of vegetation on grazed and ungrazed pinyon-juniper grassland sites in southcentral New Mexico. J. Range Manage. 21:51-53.
- Hatch, C. F., A. B. Nelson, and R. D. Pieper. 1968. Correlations among chemical constituents and nylon bag dry matter disappearance of range grasses. Western Sect. Amer. Soc. Anim. Sci. Proc. 19:289-294.
- Hatch, C. F., A. B. Nelson, R. D. Pieper and R. P. Kromann. 1968. Chemical composition of grasses at the Fort Stanton Experimental Range in Southcentral New Mexico. New Mexico State Univ. Agr. Exp. Sta. Res. Rep. 148. 11 p.
- *Pieper, R. D. 1969. The role of consumers in a grassland ecosystem, p. 316-330. In R. L. Dix and R. G. Beidleman [eds.] The grassland ecosystem: a preliminary synthesis. Range Sci. Dep. Sci. Ser. No. 2, Colorado State Univ., Fort Collins.
- Pieper, R. D. 1970. Species utilization and botanical composition of cattle diets on pinyon-juniper grassland. New Mexico State Univ. Agr. Exp. Sta. Bull. 566. 16 p.
- Pieper, R. D. 1971. Blue grama vegetation responds inconsistently to cholla cactus control. J. Range Manage. 24:52-54.
- Pieper, R. D. and J. G. Fraser. 1971. Growth patterns of cholla cactus in New Mexico. J. Range Manage. 24th Annu. Meeting, Reno, Nevada. Abstr.
- Thetford, F. O. and R. D. Pieper. 1971. Botanical and chemical composition of cattle and sheep diets on pinyon-juniper grassland range. J. Range Manage. 24th Annu. Meeting, Reno, Nevada. Abstr.
- Fraser, Joseph G. and R. D. Pieper. 1972. Growth characteristics of *Opuntia imbricata* (Haw.) D.C. in New Mexico. Southwest Nat. 17:229-238.
- Rea, K. H. and R. D. Pieper. 1972. Interference between cholla cactus (*Opuntia imbricata*) (Haw.) D.C. and herbaceous vegetation. New Mexico State Univ. Agr. Exp. Sta. Res. Rep. 244.
- *Pieper, R. D., C. H. Herbel and W. J. Russell. 1972. Primary production of a desert grassland ecosystem. (Abstr.) J. Range Manage. 25 Annual Meeting, SRM, Washington, D.C.
- Kelsey, R. J., A. B. Nelson, R. D. Pieper and Joe D. Wallace. 1972. Effect of nitrogen fertilization on blue grama plant parts. J. Anim. Sci. 34:899.
- Lamb, S. H. and R. D. Pieper. 1972. Game range improvements in New Mexico. New Mexico Interagency Range Comm. Rep. No. 9.

Name: Stuart Leonard Pimm

Born: 1949

Academic Training:

Degree	Year	Institution	Major
B.A.	1971	Oxford University, U.K.	Zoology

Special Training:

Professional Experience:

Date	Position	Institution
1969	Research Assistant	Moor House IBP site U.K.
1969	Research Assistant	Loughborough U., Biophysics Department (Radar)
1969	Research Assistant	Game Bird Research Association
1970	Leader	Oxford University Expedition to Afghanistan and Kashmir
1971	Research Assistant	Game Bird Research Association

Professional and Honorary Societies:

British Ornithologists Union, British Ecological Society

Major Interests:

Community ecology, especially birds and insects.

Current Professional Activities:

Research Assistant, for Grassland/Desert IBP

Publications, Technical Reports:

Pimm, S. L. 1969. Behaviour of the Swallow. British Birds.

Pimm, S. L. 1970. Moults and Migration of the Common Swallow. Bird Study 17:49-51.

Pimm, S. L. 1971. Bird Migration in the Himalaya. Submitted to Bull. Oxon. Univ. Expl. Club.

Pimm, S. L. 1972. Moults in the Swallow. Bird Study 19:116.

Pimm, S. L. 1973. The Moults and Migration of the European Whitethroat. Submitted to Condor.

Raitt, R. and S. L. Pimm. 1973. Jornada Bird Censuses 1972.

Pimm, S. L. Faunal Regions - a model and principal components analysis, submitted to The Amer. Nat.

Name: Larry O. Pochop

Born: 1940

Academic Training:

Degree	Year	Institution	Major
B.S.	1962	South Dakota State Univ.	Agricultural Engineering
M.S.	1964	University of Missouri	Agricultural Engineering
Ph.D.	1967	University of Missouri	Agricultural Engineering

Professional Experience:

Date	Position	Institution
1962-1963	Research Assistant, Agricultural Engr.	University Missouri
1963-1967	Instructor, Agricultural Engineering	University Missouri
1967-1971	Assistant Professor, Agricultural Engr.	University Wyoming
1971-	Associate professor, Agricultural Engr.	University Wyoming

Professional and Honorary Societies:

American Society of Agricultural Engineers
Registered Professional Engineer - Wyoming
Phi Kappa Phi Honor Society
Gamma Sigma Delta Honor Society
Alpha Epsilon Honor Society

Major Interests:

Micrometeorology
Plant and animal environment.

Current Professional Activities:

Teaching: Area of livestock environment and micrometeorology
Research: Description of climatic patterns and variation by analysis of weather records and their influence on agricultural production

Publications, Technical Reports:

- Pochop, L. O. and M. D. Shanklin. 1966. Sky cover photogram: a new technique. *Weatherwise* 19:198-203.
- Pochop, L. O. and M. D. Shanklin. 1966. Total hemispheric radiation correlated with sky cover photograms. Paper presented at the Fourth International Biometeorological Congress, New Brunswick, New Jersey, September 1966. Abstract published in *Bull. Amer. Meteorol. Soc.* 47:470.
- Pochop, L. O. and M. D. Shanklin. 1968. Sky cover influence on total hemispheric radiation during daylight hours. *J. Appl. Meteorol.* 7:484-489.
- Pochop, L. O. 1969. Dynamics of the atmosphere in the grassland ecosystem, p. 89-100. In R. L. Dix and R. G. Beidleman [ed.] *The grassland ecosystem: a preliminary synthesis*. Colorado St. Univ. Range Sci. Dep. Sci. Ser. No. 2. 437 p.

- Pochop, L. O. 1970. Sky cover measured by scanning photograms. Trans. of the ASAE, 13(1):131, 132, and 137.
- *Nunn, J. R., R. D. Burman, L. O. Pochop and C. F. Becker. 1971. Meteorological characteristics of heavily and lightly grazed natural grass range land. Paper presented at First Biometeor. Conf., and Tenth Agr. Meteor. Conf., Columbia, Mo. June 10. Also published as a Bull. Am. Meteor. Soc., 52(4), 312.
- *Nunn, J. R., C. F. Becker, R. D. Burman and L. O. Pochop. 1971. Meteorological data acquisition system. U.S. IBP Grassland Biome Tech. Rep. No. 73. Colorado State Univ., Fort Collins. 28 p.
- *Nunn, J. R., R. D. Burman, J. D. Armijo, L. O. Pochop and C. F. Becker. 1971. Meteorological characteristics of the shortgrass ecosystem. Wyo. Agr. Exp. Sta. Res. Jour. 48.
- Pochop, L. O. and R. Cornia. 1971. Feasibility of predicting psychrometric data. Paper presented at Tenth Conf. on Agr. Meteor., Columbia, Mo. June 10.
- Cornia, R. L., L. O. Pochop and C. F. Becker. 1972. Selection of periods important to crop production relative to precipitation management. Paper presented at 2nd Biometeorological Conference, Philadelphia, Penn. Nov. 2. Also published in proceedings of the conference. Abstract published in Bull. Am. Meteor. Soc. July 1972, 53(7):716.
- Cornia, R. L., L. O. Pochop and C. F. Becker. 1972. Selection of climatic periods important to winter wheat production in eastern Wyoming. Wyo. Agr. Exp. Sta. Res. Jour. 69.
- Cullen, C. P. and L. O. Pochop. 1972. Review and evaluation of winter design temperatures. ASAE Paper No. 72-411 presented at National Meeting, Hot Springs, Ark. June 27.
- Heermann, D. F., M. D. Finkner, E. A. Hiller, L. O. Pochop and J. D. Alvey. 1972. Probability of sequences of wet and dry days for 11 western states and Texas. An excerpt from Tech. Bull. 117, Colorado State Univ., Wyo. Agr. Exp. Sta. Res. Jour. 50.

Name: Ralph J. Raitt

Born: 1929

Academic Training:

Degree	Year	Institution	Major
B.A.	1950	Stanford Univ.	Biology
Ph. D.	1959	Univ. of Calif. - Berkeley	Zoology

Professional Experience:

Date	Position	Institution
1958-present	Instructor to Professor of Biology	New Mexico State Univ.

Professional and Honorary Societies:

American Ornithologists' Union	Animal Behavior Society
Cooper Ornithological Society	Ecological Society of America
Wilson Ornithological Society	Sigma Xi
Society for the Study of Evolution	Southwestern Association of Naturalists
Society of Systematic Zoology	American Institute of Biological Sciences

Major Interests:

Density and diversity in desert bird communities; ecology, behavior and taxonomy of neotropical thrushes; ecology, behavior and phenological adaptation of New World quails.

Current Professional Activities:

Teaching: General Ecology, Advanced Animal Ecology, Vertebrate Natural History, Ornithology.

Research: Molts of *Philortyx fasciatus*, ecology and behavior of sympatric species of *Turdus* in Venezuela.

Publications, technical reports:

Raitt, R. J. 1959. Rocky Mountain race of the Williamson sapsucker wintering in California. Condor 62:142.

Raitt, R. J. 1960. Breeding behavior in a population of California quail. Condor 62:284-292.

Raitt, R. J. 1961. Plumage development and molts of California quail. Condor 63:294-303.

Raitt, R. J. 1964. Dynamics of a population of California quail. Wildlife Manage. 28:127-141.

- Raïtt, R. J. 1966. Annual cycle of reproduction and molt in Gambel quail of the Rio Grande Valley, southern New Mexico. Condor 68:541-561.
- Raïtt, R. J. 1967. Relationships between black-eared and plain-eared forms of bushtits (*Psaltiriparus*). Auk 84:503-528.
- Raïtt, R. H. 1968. Sex and age ratios in Gambel quail of the Rio Grande Valley, southern New Mexico. Southwest. Natur. 13:27-34.
- Raïtt, R. H. 1968. Densities and species composition of breeding birds of a creosotebush community in southern New Mexico. Condor 70:193-205.
- Raïtt, R. H. 1968. Annual cycle of adrenal and thyroid glands in Gambel quail of southern New Mexico. Condor 70:366-372.
- Raïtt, R. H. 1970. Relationships between two partly sympatric species of thrushes (*Catharus*) in Mexico. Auk 87:20-57.

Name: James L. Rasmussen

Born: 1936

Academic Training:

Degree	Year	Institution	Major
B.A.	1958	St. Olaf College	Mathematics
B.S.	1959	Univ. Utah	Meteorology
M.S.	1963	Colorado State Univ.	Atmospheric Science
Ph.D.	1968	Colorado State Univ.	Atmospheric Science

Professional Experience:

Date	Position	Institution
1958-1961	Weather Officer	U. S. Air Force
1961-1963	Graduate Research Assistant	Colorado State Univ.
1963-1968	Instructor	Colorado State Univ.
1968-	Assistant Professor	Colorado State Univ.

Professional and Honorary Societies:

Sigma Xi
American Meteorological Society
American Geophysical Union

Major Interests:

Climatology, Dynamics of Weather Systems, Atmospheric Water Resources

Current Professional Activities:

Teaching: Graduate Courses in Atmospheric Science

Research: Water Resources Research (Dep. Interior), Weather Modification
Research (Bur. Reclam.), Climatology (IBP)

Publications, Technical Reports:

- Rasmussen, J. L. 1969. Water balance of an extra tropical cyclone. Archive for Meteorology, Geophys. and Bioclimatol. 18:3-4. p. 275-289.
- Rasmussen, J. L. 1968. Atmospheric water balance of the upper Colorado River Basin. Atmospheric Science Paper 121, Dep. Atmos. Sci., Colorado State Univ. 112 p.
- Rasmussen, J. L. 1968. Some aspects of evaporation from the upper Colorado River Basin during winter. Paper presented at Amer. Meteorological Soc. Meeting, Salt Lake City, Utah. Bull. Amer. Meteorological Soc. 49:58.
- Rasmussen, J. L., R. W. Furman and H. Riehl. 1969. Moisture analysis of an extra tropical cyclone. Archives for Meteorology, Geophysics and Bioclimatology, A, 18:275-298.

- Bertolin, G. and J. L. Rasmussen. 1969. Preliminary report on the study of the precipitation on the Pawnee National Grasslands. U.S. Int. Biol. Prog. Tech. Rep. No. 17. 44 p.
- Rasmussen, J. L. 1970. Atmospheric water balance and hydrology of the upper Colorado River Basin. Water Resources Res., 6:62-76.
- Rasmussen, J. L. 1970. Use of atmospheric water balance techniques to infer the rates of condensation in a cyclone and in an orographic cloud system. Proc. Conf. on Cloud Physics, Amer. Meteorological Soc. Colorado State Univ., Fort Collins. p. 189-190.
- Rasmussen, J. L. 1970. The atmospheric water balance and the hydrology of large river basins. Water Resources Bull. 6:631-639.

Name: John O. Reuss

Born: 1927

Academic Training:

Degree	Year	Institution	Major
B.S.	1949	Montana State College	Soils
M.S.	1958	Montana State College	Soils
Ph.D.	1963	Utah State University	Soils Chemistry

Professional Experience:

Date	Position	Institution
1949-1956	Farm and Ranch Operator	
1956-1957	Research Assistant	Huntley, Montana
1957-1960	Instructor	Montana State College
1960-1961	Research Fellowship	Utah State University
1961-1965	Ext. Soils Specialist and Asst. Agronomist	Colorado State University
1965-1967	Soil Fertility Spec.	Colorado State University
		Nigeria Contract
1967-	Asst. Prof. of Agronomy	Colorado State University

Major Interests:

Soil nitrogen transformations, soil fertility, and chemistry

Professional and Honorary Societies:

American Society of Agronomy
Soil Science Society of America
Western Soil Science Society
Sigma Xi

Publications:

Author or coauthor of 10 publications. Pertinent or recent publications are listed below:

- Reuss, J. O. 1961. Reclamation of fine textured salty soils on the Huntley Reclamation Project. Montana Agr. Exp. Sta. Circ. No. 38.
- Reuss, J. O. and R. E. Campbell. 1961. Restoring productivity to leveled land. Soil Sci. Soc. Amer., Proc. 25:302-304.
- Reuss, J. O. and R. E. Campbell. 1961. Improve your salty soils. Montana Extension Folder No. 72.
- Reuss, J. O. and R. L. Smith. 1962. Nitrite decomposition in soils. Div. 83. Cornell University, Ithaca, New York.
- Reuss, J. O. and W. L. Lindsay. 1963. Do Colorado crops need zinc and iron? Colorado Ext. Pamphlet 63.
- Lindsay, W. L., S. D. Romsdal and J. O. Reuss, 1964. The problem of supplying available iron to grain sorghum on calcareous soils. Div. 88

Name: Richard W. Rice

Born: 1931

Academic Training:

Degree	Year	Institution	Major
B.S.	1953	University of Nebraska	Animal Husbandry
M.S.	1958	University of Nebraska	Animal Husbandry
Ph.D.	1960	Michigan State University	Animal Nutrition

Professional Experience:

Date	Position	Institution
1956-1957	Graduate Research Assistant	University of Nebraska
1957-1960	Graduate Research Assistant	Michigan State University
1960-1966	Assistant Professor	University of Wyoming
1966-1971	Associate Professor	University of Wyoming
1971-	Professor	University of Wyoming
1972-1973	Visiting Professor	University of California at Davis

Professional and Honorary Societies:

Sigma Xi
Gamma Sigma Delta
American Society of Animal Science
American Dairy Science Association
American Society of Range Management

Major Interests: Diet selection and intake of grazing animals;
Forage evaluation, supplementation and utilization;
Ruminant nutrition and physiology

Current Professional Activities:

Research: Intake and utilization of the diet of steers grazing shortgrass range (IBP funded); Intake, performance and utilization of range grazed continuously or by rotation by sheep; Factors influencing forage intake and utilization.

Publications, Technical Reports:

- Matsushima, J., R. W. Rice, T. W. Dowe, and C. H. Adams. 1957. Protein-energy ratios for fattening cattle. J. Anim. Sci. 16:1053 (Abstr.).
- Rice, R. W., R. L. Salsbury, J. A. Hoefer, and R. W. Luecke. 1962. Relation of certain end products of rumen fermentation to forage feeding value. J. Anim. Sci. 21:418-425.
- Rice, R. W. 1963. Dairy bull calf feeding. Feedstuffs 35(49):27.
- Greichus, Y. A., T. R. Varnell, G. J. Miller, and R. W. Rice. 1963. Effect of fiber on rumen VFA and body composition in sheep. West. Sect., Amer. Soc. Anim. Sci., Proc., 14:25-31.

- Rice, R. W. and G. E. Nelms. 1964. Effect of injectable iron on blood constituents and weaning weight of range calves. West. Sect., Amer. Soc. Anim. Sci., Proc., 15:52.
- Paules, L. H., W. P. Miskimins, and R. W. Rice. 1964. Use of dried beet pulp for fattening swine. Wyoming Mimeo. Circ. 205.
- Rice, R. W. 1965. Hay and grain processing and digestibility and rate of passage. J. Anim. Sci. 24:901 (Abstr.).
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- *Rice, R. W. and M. Vavra. 1969. Botanical species of plants eaten and intake of steers grazing light, medium, and heavy use shortgrass range. U.S. IBP Grassland Biome Tech. Rep. No. 12. Colorado State Univ., Fort Collins. 18 p.
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- *Peden, D. G. and R. W. Rice. 1971. A dynamic programming approach to the management of ungulate populations. Symposium on Animal Behavior, Calgary Canada, 5 November 1971.
- Rice, R. W. 1971. Creep feeding and limiting the creep fed ration. *Proc. The Range Beef Cow II. Colo-Wyo. Nutr. Conf. Dec. 13, Page 22.*
- Rice, R. W. 1972. Supplement to oat straw for sheep. *J. Animal Sci.* 35:233 (Abstr.).
- *Krug, B. M. and R. W. Rice. 1972. Cattle and sheep diets on shortgrass range. *J. Animal Sci.* 35:231 (Abstr.).
- *Rice, R. W., J. G. Nagy and D. G. Peden. 1971. Functional interaction of large herbivores on grasslands. *In Preliminary Analysis of Structure and Function in Grasslands.* N. R. French [ed.]. Range Sci. Dep. Ser. 10. Colorado State Univ., Fort Collins.
- *Vavra, M., R. W. Rice and R. Bement. 1973. Chemical composition of the diet, intake and gain of yearling cattle on different grazing intensities. *J. Animal Sci.* 36:411-414.

Name: William H. Rickard, Jr.

Born: 1926

Academic Training:

Degree	Year	Institution	Major
B.A.	1950	Univ. Colorado	Botany
M.A.	1953	Univ. Colorado	Botany
Ph.D.	1957	Washington State Univ.	Botany

Professional Experience:

Date	Position	Institution
1950-1953	Field Assistant	Univ. Colorado Inst. Arctic & Alpine Res.
1953-1957	Research Assistant	Washington State Univ.
1957-1960	Assistant Professor of Botany	New Mexico Highlands Univ.
1957-1960	Proj. Leader, Bot. Field Res.	Nevada Test Site
1960-	Res., Terrestrial Ecol. Div.	Battelle Memorial Institute

Professional and Honorary Societies:

Professional Honorary Society
Ecological Society of America
American Society of Range Management
AAAS
Northwest Scientific Association
Pacific Northwest Bird and Mammal Society

Major Interests:

Soil-plant relationships of desert steppe plants, productivity of abandoned agricultural fields and the ecological role of ground-dwelling beetles in desert steppe ecosystems

Publications, Technical Reports:

- Rickard, W. H. 1960. The distribution of small mammals in relation to the climax vegetation mosaic in eastern Washington and northern Idaho. Ecology 41:99-106.
- Rickard, W. H. 1961. Notes on bird nests found in a desert shrub community following nuclear detonations. Condor 63:265-266.
- Rickard, W. H. 1962. Comparison of annual harvest yields in an arctic and a semi-desert plant community. Ecology 43:770-771.
- Rickard, W. H. and L. M. Shields. 1963. An early stage in the plant recolonization of a nuclear target area. Radiat. Bot. 3:41-44.

- Rickard, W. H. 1963. Cesium-137 in dried milk products in relation to phytoclimatic zones. *Nature* 197:197-198.
- Rickard, W. H. 1963. Vegetational analyses in a creosote bush community and their radioecologic implications. In V. Schultz and A. W. Klement, Jr. [ed.] *Radioecology*. Reinhold Publ. Corp., N. Y. p. 39-44.
- Rickard, W. H. and J. R. Murdock. 1963. Soil moisture and temperature survey of a desert vegetation mosaic. *Ecology* 44:820-824.
- Rickard, W. H. 1964. Demise of sagebrush through soil changes. *BioScience* 14:43-44.
- Rickard, W. H. 1964. Bird surveys in cottonwood-willow communities in winter. *Murrelet* 45:22-25.
- Rickard, W. H. 1964. The relation of spring precipitation and ^{90}Sr in the Montana and Idaho wheat crop. *Nature*.
- Rickard, W. H. 1965. The influence of greasewood on soil moisture penetration and soil chemistry. *Northwest Sci.* 39:36-42.
- Rickard, W. H. and J. C. Beatley. 1965. Canopy-coverage of the desert shrub vegetation mosaic of the Nevada test site. *Ecology* 46:523-529.
- Rickard, W. H. 1965. Sodium and potassium accumulation by greasewood and hopsage leaves. *Bot. Gazette* 126:116-119.
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- Rickard, W. H. 1965. Field observations on fallout accumulation by plants in natural habitats. *J. Range Manage.* 18:112-114.
- Rickard, W. H., J. J. Davis, W. C. Hanson, and D. G. Watson. 1965. Gamma-emitting radionuclides in Alaskan tundra vegetation 1959, 1960, 1961. *Ecology* 46:352-356.
- Rickard, W. H. 1965. Cesium-137 in *Bromus tectorum* in relation to precipitation regimes and harvest yield. *J. Range Manage.* 18:343.
- Rickard, W. H. and L. E. Haverfield. 1965. A pitfall survey of darkling beetles in desert steppe vegetation. *Ecology* 46:6.
- Rickard, W. H. 1966. Cesium-137 in litter and understory vegetation. *Northwest Sci.* 40:25-30.
- Rickard, W. H. and R. E. Nakatani. 1966. The length of deer mice in relation to natural vegetation belts in southeastern Washington and northern Idaho. *Murrelet* 47:49-50.
- Rickard, W. H. 1967. Onset of winter dormancy in lizards and beetles. *Northwest Sci.* 41:92-95.
- Rickard, W. H. 1967. Seasonal soil moisture patterns in adjacent greasewood and sagebrush stands. *Ecology* 48:1034-1038.

- Rickard, W. H. 1968. Field observations on the altitudinal distribution of the side-blotched lizard. Northwest Sci. 42:161-164.
- Rickard, W. H. and R. F. Keough. 1968. Soil-plant relationships of two steppe desert shrubs. Plant and Soil 29:205-212.
- Hakonson, T. E. and W. H. Rickard. 1968. Radionuclide deposition and elimination in a darkling beetle. Northwest Sci. 43:23-28.
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- Rickard, W. H. 1969. Fallout accumulation in Cascade Mountain vegetation-1966. In D. J. Nelson and F. C. Evans [ed.] Symposium on radioecology. Clearing-house for Fed., Sci., and Tech. Inf., Springfield, Virginia.

Name: Paul G. Risser

Born: 1939

Academic Training:

Degree	Year	Institution	Major
B.A.	1961	Grinnell College	Biology
M.S.	1965	University of Wisconsin	Botany
Ph.D.	1967	University of Wisconsin	Botany-Soil

Special Training:

1961-1963 Research Assistant, Jackson Laboratory, Bar Harbor, Maine
Plant Physiology

Professional Experience:

Date	Position	Institution
1961-1963	Research Assistant	Jackson Laboratory Bar Harbor, Maine
1963-1964	Teaching Assistant	University of Wisconsin
1964-1966	Research Assistant	University of Wisconsin
1966-1967	Teaching Assistant	University of Wisconsin
1967-1971	Assistant Professor	University of Oklahoma
1971-	Associate Professor	University of Oklahoma

Professional and Honorary Societies:

American Society of Range Management	Ecological Society
AIBS	British Ecological Society
AAAS	Botanical Society
Sigma Xi	

Major Interests:

Physiological Ecology-shade tolerance and adaptation to environment.
Production Ecology-biomass and gas exchange.
Community Ecology-diversity, structure and pattern of grassland and forest communities.

Current Professional Activities:

Consultant: Blackwell Zinc Company, Blackwell, Oklahoma
Arnold Thompson, Airport Consultants, White Plains, New York
Civil Service Commission, Dallas Regional Training Office

Teaching: Plant Ecology, Botany

Research: Herbage dynamics on a tall grass prairie

Publication, Technical Reports:

Risser, P. G. 1964. Somatic mitosis in cells of *Picea glauca* cultivated *in vitro*. Science 143:591-592.

Risser, P. G. and P. R. White. 1964. Some basic parameters in the cultivation of spruce tissues. Physiol. Plant. 17:600-619.

- Risser, P. G. and P. R. White. 1964. Nutritional requirements of spruce tumor cells *in vitro*. *Physiol. Plant.* 17:620-635.
- Risser, P. G. 1965. Breaking dormancy of some spring ephemerals. *Bull. Ecol. Soc. Amer.* 46:106.
- Risser, P. G. and G. Cottam. 1967. Influence of temperature on the dormancy of some spring ephemerals. *Ecology* 48:500-503.
- Risser, P. G. 1967. Physiological ecology of some spring ephemerals. Ph.D. Thesis, Univ. Wisconsin, Madison.
- Risser, P. G. 1968. An evaluation of the grassland quarter method. *Ecology* 49:1006-1009.
- Risser, P. G. 1968. Carbohydrate cycles in the bulbs of some spring ephemerals. *Bull. Torr. Bot. Club* 95:359-369.
- Risser, P. G. 1969. Competitive relationships among herbaceous plants and their influence on the ecosystem function in grasslands, p. 153 to 172. In R. L. Dix and R. G. Beidleman [ed.] *The grassland ecosystem: a preliminary synthesis*. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 2. 437 p.
- Einhellig, F. A., E. L. Rice, P. G. Risser and S. H. Wender. 1970. Effects of scopoletin on growth, CO₂ exchange rates, and concentration of scopoletin, scopalin, and chlorogenic acids in tobacco, sunflower, and pigweed. *Bull. of Torr. Bot. Club* 97(1):22-33.
- Risser, P. G. 1970. Competitive relationships among herbaceous grassland plants. *Bot. Rev.* 35:251-284.
- Risser, P. G. 1970. OSAGE Comprehensive Network Site description. U.S. IBP Grassland Biome Tech. Rep. 44. Colorado State Univ., Fort Collins. 6 p.
- Risser, P. G. 1970. Competitive relationships in *Bouteloua curtipendula*. *Amer. Mid. Nat.* 84:259-262.
- Risser, P. G. 1971. OSAGE Site, 1970 Report, primary production. U.S. IBP Grassland Biome Tech. Rep. No. 80. Colorado State Univ., Fort Collins. 41 p.
- Risser, P. G. and D. Adams. 1971. Some factors influencing the frequency of bark lichens in North Central Oklahoma. *Amer. J. of Bot.* 58:752-757.
- Risser, P. G. 1971. The effect of host specificity on the interspecific associations of bark lichens. *Bryologist* 74:451-457.
- Risser, P. G. 1971. Plant community structure. In N. R. French [ed.] *Proceedings of a Symposium on the Grassland Ecosystem*. Range Sci. Dep. Sci. Ser. No. 10., p. 41-58. Colorado State Univ., Fort Collins.
- Risser, P. G. 1971. Research in the International Biological Program Biome. *Proc. Second Midwest Prairie Conf.* Madison, Wisconsin.

- Risser, P. G. 1971. Undergraduate education as a part of field station program. Proc. Conf. Undergraduate Education, Missouri.
- Risser, P. G. and E. Rice. 1972. Species diversity in upland forests of Oklahoma. Ecology 52:876-880.
- Risser, P. G. and E. Rice. 1972. Phytosociology of Oklahoma upland forests. Ecology 52:940-945.
- Risser, P. G. 1972. IBP Grassland producer data synthesis, 1970. U.S. IBP Grassland Biome Tech. Rep. No. 161. Colorado State Univ., Fort Collins. 148 p.
- Risser, P. G. 1972. A preliminary compartment model for a tall-grass prairie. U.S. IBP Grassland Biome Tech. Rep. No. 159. Colorado State Univ., Fort Collins. 21 p.
- Risser, P. G. 1972. Herbage dynamics of a tall-grass prairie. U.S. IBP Grassland Biome Tech. Rep. No. 1973. Colorado State Univ., Fort Collins. 74 p.
- Risser, P. G. 1973. Some CO₂ exchange characteristics of prairie grass seedlings. Southwest Nat. Vol. 18 (In press).
- Risser, P. G. 1973. Some aspects of structure and function in Oklahoma old-field succession. Bull. Torr. Bot. Club 99 (In press).
- Risser, P. G. 1973. Some forest-soil relationship in Oklahoma. J. Ecol. 60 (In press).
- Risser, P. G. 1973. A model for the dynamics of potassium and phosphorus flux in a tall-grass prairie. Southwest Nat. 18 (In press).
- Risser, P. G. 1973. Correlation analysis of annual ring width and rainfall in blackjack and post oak. Amer. J. Bot. 60 (In press).

Name: Charles Franklin Rodell

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B.S.	1965	Wisconsin State University	Mathematics
M.S.	1967	University of Minnesota	Genetics
Ph.D.	1972	University of Minnesota	Genetics

Special Training:

Population and ecological genetics

Professional Experience:

Date	Position	Institution
1965	Laboratory Instructor	Wisconsin State University Department of Biology
1965-1966	Graduate Teaching Asst.	University of Minnesota Department of Biology, Genetics, Evolution
1966-1968	Research Assistant	University of Minnesota
1968-1969	Graduate Teaching Asst.	University of Minnesota
1968-1971	Predoctoral Trainee (NIH)	University of Minnesota
1972-1973	Postdoctoral Fellow	Colorado State University

Professional and Honorary Societies:

American Association for the Advancement of Science
Genetics Society of America
Society for the Study of Evolution

Major Interests:

My major interests are in the dynamics of and the genetic variation in natural breeding populations, and the study of the environmental and genetic influences on these.

Current Professional Activities:

Participation in a group modelling effort on a total systems of a grassland ecosystem and the development of an insect model which includes both energy flow and population dynamics.

Publications, Technical Reports:

Merrell, D. J. and C. F. Rodell. 1968. Seasonal selection in the leopard frog, *Rana pipiens*. *Evolution* 22:284-288.

Rodell, C. F. 1972. The incidence of lethal and semilethal second chromosomes in Minnesota populations of *Drosophila melanogaster*. *Genetics* 71:52-53.

Anway, J. C., E. G. Brittain, H. W. Hunt, G. S. Innis, W. J. Parton, C. F. Rodell, and R. H. Sauer. 1972. ELM: A grassland ecosystem model. U.S. IBP Grassland Biome Technical Report No. 156. Colo. State Univ., Fort Collins. 285 p.

Name: Ronald A. Ryder

Born: 1928

Academic Training:

Degree	Year	Institution	Major
B.S.	1949	Colorado State University	Game Management
M.S.	1951	Colorado State University	Game Management
Ph.D.	1958	Utah State University	Wildlife Management

Special Training:

Office of Naval Research, Computer Short Course, Texas A & M - August 1968
Office of Naval Research, Oceanography, Oregon State University - July 1969

Professional Experience:

Date	Position	Institution
1949-1951	Research Assistant	Colo. Coop. Wildl. Res. Unit
1951-1954	Deck Officer	U. S. Navy
1955-1957	Research Assistant	Utah State University
1957-1958	Instructor in Biology	Wartburg College, Iowa
1958-1963	Assistant Professor of Wildlife	Colorado State University
1963-1968	Associate Professor of Wildlife	Colorado State University
1968-	Prof. & Chmn., Wildl. Biol. Maj.	Colorado State University

Professional and Honorary Societies:

Sigma Xi	Cooper Ornithological Society
The Wildlife Society	Fort Collins Bird Club
American Ornithologists' Union	Colorado Field Ornithologists
Society of American Mammalogists	Colorado-Wyoming Academy of Sciences
Western Bird-Banding Association	National Audubon Society
Wilson Ornithological Society	Intl. Oceanographic Foundation
Xi Sigma Pi	Phi Kappa Phi
Beta Beta Beta	

Major Interests:

Ornithology; avian ecology particularly population dynamics, movements and migration.
Waterfowl and upland game bird ecology and management.

Current Professional Activities:

President, Colorado Field Ornithologists
President, Western Bird Banding Association
Local Arrangement Chairman, Joint Cooper-Wilson Ornith. Meeting

Teaching: Wildlife Management Techniques; Waterfowl Management; Spec. Studies in Wildlife Biology

Research: Waterfowl-Water Temperature Relationships; Avian Populations of the Pawnee Site (IBP); Migrations of Snowy Egret

Publications, Technical Report:

- Ryder, R. A. 1950. Great blue heron killed by a carp. Condor 52:40-41.
- Ryder, R. A. 1950. New breeding records for Colorado. Condor 52:133-141.
- Ryder, R. A. 1951. Waterfowl production in the San Luis Valley, Colorado. M. S. Thesis, Colorado A & M Coll., Fort Collins, Colorado. 166 p.
- Ryder, R. A. 1951. The San Luis Valley - a Colorado waterfowl factory. Colorado Conserv., March:22-25.
- Ryder, R. A. and J. R. Grieb. 1952. Waterfowl records for north-central Colorado. Condor 54:65-67.
- Ryder, R. A. 1952. Bird notes from southern Colorado. Condor 54:317-318.
- Ryder, R. A. 1955. Long gone goslings. Colorado Conserv. 4:12-14.
- Ryder, R. A. 1955. A preliminary analysis of waterfowl recoveries in Colorado with notes on trapping and banding. Colorado Game & Fish Dept. Final Proj. Rep., Proj. W-37-R. 72 p.
- Ryder, R. A. 1955. Eight-year hunter check, South Platte management area. Colorado Game & Fish Dept. Final Proj. Rep., Proj. W-37-R. 23 p.
- Ryder, R. A. 1956. Summer banding on Utah marshes. News from the Bird Banders 31:45.
- Ryder, R. A. 1957. Coot-waterfowl relations on some northern Utah marshes. Utah Acad. Arts, Letters & Sci. Proc. 34:65-68.
- Ryder, R. A. 1957. Avian-pinniped feeding relationships. Condor 59:68-69.
- Ryder, R. A. 1958. Coot-waterfowl relations in northern Utah. Ph.D. Diss., Utah State Univ., Logan. 219 p.
- Ryder, R. A. 1959. Interspecific intolerance of the American coot in Utah. Auk 76:424-442.
- Ryder, R. A. 1960. Recoveries of waterfowl banded by the Colorado Cooperative Wildlife Research Unit. Colorado Coop. Wildl. Res. Unit Qtr. Rep. 14:35-36.
- Ryder, R. A. 1960. The grouse of Colorado. Colorado Outdoors 9:1-7.
- Ryder, R. A. 1960. Coot and duck productivity in northern Utah. North America Wildl. & Cons. Conf. Trans. 26:134-147.
- Ryder, R. A. and L. A. Roper. 1961. Recent waterfowl records for Colorado. Condor 63:418.
- Ryder, R. A. 1962. Bird banding - hummingbirds to pelicans. Colorado Coop. Wildl. Res. Unit Qtr. Rep. 16:1-2.

- Ryder, R. A. 1962. Recoveries of waterfowl banded by the Colorado Cooperative Wildlife Research Unit. Colorado Coop. Wildl. Res. Unit Qtr. Rep. 16:17-18.
- Ryder, R. A. 1962. Banding activities in Colorado. Western Bird Bander 37:50.
- Ryder, R. A. and J. R. Grieb. 1963. White pelicans breeding in Colorado. Wilson Bull. 75:92.
- Ryder, R. A. 1963. Mottled duck and knot in Colorado. Condor 65:333.
- Ryder, R. A. 1963. Some results from Colorado banding. Western Bird Bander 38:39-40.
- Ryder, R. A. 1963. Migration and population dynamics of American coots in western North America. Proc. XIII Intern. Ornith. Congress:441-453.
- Ryder, R. A. 1963. Movements and migrations of some Colorado gulls. J. Colorado-Wyoming Acad. Sci. 5:50-51.
- Ryder, R. A. 1964. White pelicans. Colorado Outdoors 12:24-29.
- Ryder, R. A. 1964. California gull nesting in Colorado. Condor 66:440-441.
- Ryder, R. A. 1964. Migration and mortality of mallards banded in northern Colorado. J. Colorado-Wyoming Acad. Sci. 5:48. (Abstr.)
- Ryder, R. A. 1964. A partial bibliography of references on the sage grouse (*Centrocercus urophasianus*). Colorado State Univ., Fort Collins, Colorado. 28 p. mimeo.
- Ryder, R. A. and L. Jensen. 1965. Breeding behavior of the white-tailed ptarmigan near Aspen, Colorado. J. Colorado-Wyoming Acad. Sci. 5:52-53. (Abstr.)
- Ryder, R. A. 1965. Review of *Waterfowl tomorrow*. J. Soil & Water Conserv. 20:113.
- Ryder, R. A. 1966. Some movements of ring-billed gulls color-marked in Colorado. The Blue Jay 24:73-75.
- Ryder, R. A. 1966. Review of *Black Brant: Sea Goose of the Pacific Coast*. J. Wildl. Manage. 30:444.
- Ryder, R. A. 1967. Distribution, migration and mortality of the white-faced ibis (*Plegadis chihi*) in North America. Bird Banding 38:257-277.
- Ryder, R. A. 1967. Distribution, migration and mortality of the white-faced ibis (*Plegadis chihi*) in North America. J. Colorado-Wyoming Acad. Sci. 5:78.
- Ryder, R. A. 1967. Migration and movements of gulls color-marked in Colorado. Colorado Field Ornith. 2:16-20.
- Littlefield, C. D. and R. A. Ryder. 1968. Breeding biology of the greater sandhill crane on Malheur National Wildlife Refuge, Oregon. North American Wildl. & Natur. Res. Conf. 33:444-454.

- Ryder, R. A. 1968. Color-marked gulls reported in Colorado. Colorado Field Ornith. 4:16.
- Ryder, R. A., A. J. Pakulak, and C. D. Littlefield. 1969. Black brant observed in Larimer County, Colorado. Colorado Field Ornith. 5:5-7.
- Ryder, R. A. and D. A. Cobb. 1969. Birds of the Pawnee National Grasslands in northern Colorado. J. Colorado-Wyoming Acad. Sci. 6:5.
- Ryder, R. A. and C. D. Marti. 1969. Food habits of four grassland inhabiting owls. J. Colorado-Wyoming Acad. Sci. 6:50.

Name: Ronald Howard Sauer

Born: 1943

Academic Training:

Degree	Year	Institution	Major
B.A.	1966	University of California, Riverside	Biology
M.A.	1968	University of California, Riverside	Biology
Ph.D.	1971	University of California, Los Angeles	Botany

Special Training:

Response of vegetation to climate, especially the effect of soil water potential and air temperature on growth and phenological change in grassland and desert species. Ecosystem modeling, using simulation techniques to identify and study interactions within an ecosystem. Plant species identification.

Professional Experience:

Date	Position	Institution
1972-	Pestdoctoral modelling liaison	Colorado State University

Professional and Honorary Societies:

Ecological Society of America
American Association for the Advancement of Science

Major Interests:

Relationship between plant development and climatic variation (weather).
Community composition and evolution.

Current Professional Activities:

Learning simulation modelling techniques and using these to study ecosystem dynamics through the construction and use of a producer model of the grassland.

Publications, Technical Reports:

Vasek, F. C. and R. H. Sauer. 1971. Progression of flowering in *Clarkia*.
Ecol. 52:1038-1045.

Anway, J. C., E. G. Brittain, H. W. Hunt, G. S. Innis, W. J. Parton,
C. F. Rodell, and R. H. Sauer. 1972. ELM: Version 1.0. U.S. IBP
Grassland Biome Tech. Rep. No. 156. Colorado State University,
Fort Collins, Colorado. 285 pp.

Name: Frank Schitoskey, Jr.

Born: 1941

Academic Training:

Degree	Year	Institution	Major
B.S.	1965	Midwestern University, Wichita Falls, Texas	Biology/Geology
M.S.	1967	Texas Tech College, Lubbock, Texas	Zoology/Geology
Ph.D.	(Candidate)		

Special Training:

Predoctoral Intern, Div. of Mammals, U.S. National Museum
Technical Writing, USDA Graduate School (Correspondence)
Environmental Impact Analysis Workshop, University of California, Davis

Professional Experience:

Date	Position	Institution
1966-1967	Research Biologist	Bureau of Sport Fisheries and Wildlife (BSFW), Denver Research Center, Denver, Colorado
1967-1969	Research Biologist	BSFW, Houma, Louisiana
1969-1972	Research Biologist	BSFW, Davis, California
1972-	Research Biologist	BSFW, Fresno, California

Professional and Honorary Societies:

American Society of Mammalogists
Southwestern Association of Nat.
Sigma Xi
Ecological Society of America
Wildlife Society

Major Interests:

Ecology of small mammals in agricultural areas.

Current Professional Activities:

Research Activities: Environmental impact of the rodenticide zinc phosphide.
Ecology of the California ground squirrel (*Spermophilus beecheyi*).
Energy flow in rodents of the California annual-type range.
Principal investigator for small mammals at the San Joaquin Experimental Site of the IBP Grassland Biome.

Teaching Activities: Serving as Adjunct Professor in the Biology Dept., California State University, Fresno; teaching and directing graduate student research.

Publications, Technical Reports:

- Schitoskey, Frank, Jr. 1968. Notes on morphological variation in the dark kangaroo mouse. Southwest. Nat. 13:243-248.
- Schitoskey, Frank, Jr. 1971. Anomalies and pathological conditions in the skulls of nutria from southern Louisiana. Mammalia 35:311-314.
- Schitoskey, Frank, Jr. 1972. Bacular variation in nutria from southern Louisiana. Southwest. Nat. 16:454-457.
- Schitoskey, Frank, Jr., J. Evans and G. K. La Voie. 1972. Status and control of nutria in California. Proceedings 5th Vert. Pest Conf. Fresno, California. pp. 15-17.
- Schitoskey, Frank, Jr. Secondary hazards of rodenticides to the kit fox. (In review).
- La Voie, G. K. and F. Schitoskey, Jr. Survey of nutria damage to sugar cane in southern Louisiana. (In review).

Name: Phillip L. Sims

Born: 1940

Academic Training:

Degree	Year	Institution	Major
B.S.	1962	Oklahoma State University	Agronomy (Range Management)
M.S.	1964	Oklahoma State University	Agronomy (Range Management)
Ph.D.	1967	Utah State University	Range Science

Professional Experience:

Date	Position	Institution
1961 (Summer)	Student Trainee (Plant Ecology)	ARS
1962-1964	Graduate Research Assistant	Oklahoma State University
1964-1967	Graduate Research Assistant	Utah State University
1967-1972	Assistant Professor	Colorado State University
1972-	Associate Professor	Colorado State University

Professional and Honorary Societies:

Sigma Xi	American Society of Range Management
Phi Sigma	American Society of Animal Science
Xi Sigma Pi	American Soil Conservation Society
Alpha Zeta	British Ecological Society

Major Interests:

General range management studies including rangeland inventory, evaluation and improvement
Rehabilitation of disturbed rangeland
Herbage dynamics
Plant and animal interactions
Range animal nutrition and secondary productivity

Current Professional Activities:

Teaching: General range management
Range animal nutrition and secondary productivity

Research: Colorado Agricultural Research Station and IBP Grassland Biome
Nutritive value of important Colorado range forage species and
and vegetation types.
Influence of livestock use on range condition and trend.
Dynamics of herbage biomass as related to grazing intensity and
other environmental stresses.
Rehabilitation of important vegetation types disturbed by mining
activities.
Adaptability and productivity characteristics of improved varieties of grasses.

Publications, Technical Reports:

- Dwyer, D. D., P. L. Sims, and L. S. Pope. 1964. Preference of steers for certain native and introduced forage plants. *J. Range Manage.* 17:83-85.
- Sims, P. L. and D. D. Dwyer. 1965. Pattern of retrogression of native vegetation in north central Oklahoma. *J. Range Manage.* 18:20-25.
- Sims, P. L. and J. E. Butcher. 1966. Water source effect on rumen temperature of sheep. *J. Animal Sci.* 25:590. (Abstr.)
- Sims, P. L. and C. W. Cook. 1967. Digestibility as influenced by density of forage stand. *J. Animal Sci.* 26:939. (Abstr.)
- Cook, C. W., L. A. Stoddart, and P. L. Sims. 1967. Effects of season spacing and intensity of seeding on the development of foothill range grass stands. *Utah Agr. Exp. Sta. Bull.* 467. 73 p.
- Sims, P. L. and A. H. Denham. 1969. Eastern Colorado Range Station climatic data. *CSU Exp. Sta. Progress Rep.* 69-46.
- Denham, A. H., P. L. Sims and J. D. Wallace. 1969. The effect of rotational grazing of sandhill range on cow-calf production. *CSU Exp. Sta. Progress Rep.* 69-49.
- Free, J. C., R. M. Hansen, P. L. Sims and A. H. Denham. 1969. Diet estimates from fecal examination of herbivores. *CSU Exp. Sta. Progress Rep.* 69-50.
- Free, J. C., P. L. Sims and R. M. Hansen. 1969. Methods of estimating dry weight composition in diets of large herbivores. *CSU Exp. Sta. Progress Rep.* 69-51.
- Denham, A. H. and P. L. Sims. 1969. Protein and energy supplementation on shortgrass summer range. *CSU Exp. Sta. Progress Rep.* 69-55.
- Sims, P. L. and A. H. Denham. 1969. Grazing systems on sandhill rangeland. *CSU Exp. Sta. Progress Rep.* 69-56.
- Sims, P. L. 1969. Control of undesirable range plants. *CSU Exp. Sta. Progress Rep.* 69-58.
- Bartos, D., J. Hughes and P. L. Sims. 1969. Preliminary methodology and results for root biomass sampling on the Pawnee Site. *U.S. IBP Grassland Biome Tech. Rep. No. 2.* Colorado State Univ., Fort Collins. 20 p.
- Uresk, D. W. and P. L. Sims. 1969. Preliminary methodology and results for aboveground herbage biomass sampling on the Pawnee Site. *U.S. IBP Grassland Biome Tech. Rep. No. 33.* Colorado State Univ., Fort Collins. 14 p.
- Free, J. C., R. M. Hansen and P. L. Sims. 1970. Estimating dry weights of food plants in feces of herbivores. *J. Range Manage.* 23:300-302.
- Sims, P. L. and C. W. Cook. 1970. Herbage digestibility as influenced by community density. *J. Animal Sci.* 31:1228-1231.
- Sims, P. L. 1970. Grazing management systems. *Range Science Review. Audio-Cassette Tape Program. Vol. 1, No. 2.* 15 p.

- Sims, P. L. 1970. Range Science Views: Control of undesirable range plants. Cattle Guard, Vol. 15, No. 2, p. 18.
- Sims, P. L. 1970. Rotational grazing of sandhill rangeland. Cattle Guard, Vol. 15, No. 3, p 20.
- Sims, P. L., G. R. Lovell and D. F. Hervey. 1970. Seasonal trends in herbage and nutrient production of important sandhills grasses. U.S. IBP Grassland Biome Tech. Rep. No. 12. Colorado State Univ., Fort Collins. 20 p.
- Sims, P. L., G. R. Lovell and D. F. Hervey. 1971. Seasonal trends in herbage and nutrient production of important sandhill grasses. J. Range Manage. 24: 55-59.
- Free, J. C., P. L. Sims and R. M. Hansen. 1971. Methods of estimating dry weight composition in diets of steers. J. Animal Sci. 32:1003-1007.
- Sims, P. L., L. J. Ayuko and D. N. Hyder. 1971. The developmental morphology of sideoats grama and switchgrass. J. Range Manage. 24:357-360.
- *Sims, P. L. and J. S. Singh. 1971. Herbage dynamics and net primary production in certain ungrazed and grazed grasslands in North America. In N. R. French [ed.] Preliminary analysis of structure and function in grasslands. Range Sci. Dep. Sci. Ser. No. 10. Colorado State Univ., Fort Collins.
- Sims, P. L. 1971. Intensity of grazing. Range Sci. Review. Audio-Cassette Tape Program. Vol. 2, No. 4. 15 p.
- Sims, P. L., D. W. Uresk, D. L. Bartos and W. K. Lauenroth. 1971. Herbage dynamics on the Pawnee Site: aboveground and belowground herbage dynamics on the grazing intensity treatments; and preliminary sampling on the ecosystem stress site. U.S. IBP Grassland Biome Tech. Rep. No. 99. Colorado State Univ., Fort Collins. 92 p.
- Quinton, D. A. and P. L. Sims. 1972. Nylon bag standardization. CSU Exp. Sta. PR72-38. 3 p.
- Quinton, D. A. and P. L. Sims. 1972. Nutritive value of loamy plains range forage. CSU Exp. Sta. PR72-39. 2 p.
- Quinton, D. A. and P. L. Sims. 1972. Sandy meadow range site-nutritive values of cattle diets. CSU Exp. Sta. PR72-40. 2 p.
- Quinton, D. A. and P. L. Sims. 1972. Diets and nutrition of cattle grazing salt meadow range sites. CSU Exp. Sta. PR72-41. 2 p.
- Sims, P. L., R. K. Lang'at and D. N. Hyder. 1973. Developmental morphology of blue grama and sand bluestem. J. Range Manage. 26: (in Press).

Name: J. S. Singh

Born: 1941

Academic Training:

Degree	Year	Institution	Subjects
B.S.	1957	University of Allahabad	Botany, Zoology, Chemistry
M.S.	1959	University of Allahabad	Botany
Ph.D.	1967	Banaras Hindu University	Botany (Ecology)

Special Training:

Attended the following courses at Colorado State University, Fort Collins, Colorado, USA: Mathematical Methods in the Biological Sciences; Ecological Simulation; Natural Resource Models; Statistical Methods; Correlation and Regression; Sampling Techniques; Introduction to Operations Research; Special Studies in Range Ecosystem Analysis.

Professional Experience:

Date	Position	Institution
1960-1963	Technical Assistant	Botanical Survey of India
1963-1964	Government of India	Banaras Hindu University
	Research Scholar	
1964-1968	Research Assistant	Banaras Hindu University, PL480 Project
1968-	Lecturer	Kurukshetra University
1971-	Visiting Scientist	NREL, Colorado State University

Professional and Honorary Societies:

International Society for Tropical Ecology, Indian Botanical Society, Association of Indian Ecologists, Indian Science Congress Association, Sigma Xi.

Major Interests:

Grassland ecology and systems analysis.
Co-investigator for the project "Carbon-14 Cycling in Vegetation-Soil Components of a Shortgrass Prairie Ecosystem," U.S. IBP Grassland Biome.

Current Professional Activities:

Grassland Biome Working Group for IBP, PT section of India.
Board of Referees for the journals "Tropical Ecology" and "Annals of Arid Zone".
Indian National Executive Committee for the International Society for Tropical Ecology.
Co-editor of a series of review volumes on Ecology in India; being published by Today and Tomorrow, New Delhi.

Publications, Technical Reports:

- Singh, J. S. 1962. Preliminary studies on the humus status of some forest communities of Bashahr Himalayas. Proc. Nat. Acad. Sci., India 32B:403-407.
- Singh, J. S. 1962. The effect of planting teak of different seed origins on Gangetic alluvium. Trop. Ecol. 3:119-132.
- Singh, J. S. and M. K. Wali. 1962. The problem of soil erosion in some parts of Kashmir Himalayas. Proc. Nat. Acad. Sci., India. 32B: 118-124.
- Gupta, R. K. and J. S. Singh. 1962. Succession of vegetation types in the Tons Valley of Garhwal Himalayas. Indian For. 88:289-296.
- Singh, J. S. and D. M. Verma. 1963. A contribution to the forest botany of Angul division in Orissa state. J. Sci. Res. 14:223-232.
- Singh, J. S. and M. K. Wali. 1963. Ecological problems in the Western Himilayas. Proc. Nat. Acad. Sci., India. 33B:55-57.
- Patil, R. P. and J. S. Singh. 1963. On the ecology and anatomy of *Phylla nodiflora* Greene at Allahabad, U. P. Trop. Ecol. 4:83-88.
- Singh, J. S. and K. Mitra. 1964. Ecological observations along the river banks at Allahabad, U. P. Bull. Bot. Surv. India 6:137-140.
- Singh, J. S. 1965. Influence of scarification on germination of *Cassia tora* L. seeds. In P. L. 480, Annual Report, BHU, Sept. 1, 1964 to June 30, 1965, pp. 4-12.
- Singh, J. S. 1965. Effect of daily exposures to low and high temperatures and scarification on seed germination of *Eleusine indica* L. Gaertn. In P. L. 480, Annual Report, BHU, p. 13-21.
- Singh, J. S. 1965. Effect of chilling on the survival and subsequent growth of seedlings of *Eleusine indica* L. Gaertn. In P. L. 480, Annual Report, BHU, p. 22-26.
- Singh, J. S. 1965. Observation on growth behavior and phenology of *Eleusine indica* L. Gaertn. as influenced by irrigation practices. In P. L. 480, Annual Report, BHU, p. 27-31.
- Singh, J. S. 1966. Germination behavior of *Cassia tora* seeds in relation to seed maturity, storage temperature, and place of origin. In P. L. 480, Annual Report, p. 4-12.
- Singh, J. S. 1966. Growth performance of *Eleusine indica* L. Gaertn. grown at two different temperatures. In P. L. 480, Annual Report, BHU, p. 63-66.
- Singh, J. S. 1966. Effect of different photoperiods on the growth performance of *Eleusine indica* L. Gaertn. In P. L. 480, Annual Report, BHU, p. 57-62.

- Singh, J. S. 1966. Growth performance of *Cassia tora* L. plants raised from seeds of different localities. In P. L. 480, Annual Report, BHU, p. 13-24.
- Singh, J. S. 1966. Distribution and uniform culture of *Eleusine indica* L. Gaertn. In P. L. 480, Annual Report, BHU, p. 49-56.
- Singh, J. S. 1966. Further observations on the germination behavior of seeds of *Eleusine indica*. In P. L. 480, Annual Report, BHU, p. 41-82.
- Singh, J. S. 1967. Growth performance of *Cassia tora* L. plants of different seed origins raised at different temperatures. In P. L. 480, Annual Report, BHU, p. 12-23.
- Singh, J. S. 1967. Establishment and growth of *Cassia tora* L. under reduced light intensities. In P. L. 480, Annual Report, BHU, p. 31-36.
- Singh, J. S. 1967. Growth performance of *Eleusine indica* in relation to slope and its direction. In P. L. 480, Annual Report, BHU, p. 41-49.
- Singh, J. S. 1967. Relationship between stem diameter and shoot dry weight in *Cassia tora* L. In P. L. 480, Annual Report, BHU, p. 37-40.
- Singh, J. S. 1967. Effect of temperature on dry matter, area, and optical density of chlorophyll extract of leaves of *Cassia tora*. In P. L. 480, Annual Report, BHU, p. 4-11.
- Singh, J. S. and K. P. Singh. 1967. A decade of plant ecological research at the Banaras Hindu University. Misra Comm. Volume, BHU, 5-17.
- Singh, J. S. and K. P. Singh. 1967. Contribution to the ecology of ten noxious weeds. J. Indian Bot. Soc. 46:440-451.
- Misra, R., J. S. Singh and K. P. Singh. 1967. Preliminary observations on the production of dry matter by Sal (*Shorea robusta* Gaertn. F.) Trop. Ecol. 8:94-104.
- Singh, J. S. 1968. Net aboveground community productivity in the grasslands at Varanasi. Proc. ISTE Symp. "Recent Advances in Tropical Ecology" [ed.] R. Misra and B. Gopal. Pt. 11:631-654.
- Singh, J. S. 1968. In support of the separation of *Cassia tora* L. and *C. obtusifolia* L. as two distinct taxa. Curr. Sci. 37:381-382.
- Singh, J. S. 1968. Comparison of growth performance and germination behavior of seeds of *Cassia tora* L. and *C. obtusifolia* L. Trop. Ecol. 9:64-71.
- Singh, J. S. 1968. Influence of period and temperature of storage on the seed germination of *Cassia tora* L. In P. L. 480, Annual Report, BHU, p. 22-25.
- Singh, J. S. 1968. Effect of different photoperiods on the growth performance of *Cassia tora* L. In P. L. 480, Annual Report, BHU, p. 26-33.
- Singh, J. S. 1968. Phosphate (p 32) uptake by seedlings and mature plants of *Cassia tora*. In P. L. 480, Annual Report, BHU, p. 34-37.

- Singh, J. S. 1968. Growth of *Eleusine indica* in different months. In P. L. 480, Annual Report, BHU, p. 38-42.
- Singh, J. S. 1968. Growth and dry matter yield of *Eleusine indica* as influenced by population density. In P. L. 480, Annual Report, BHU, p. 43-48.
- Misra, R., J. S. Singh, and K. P. Singh. 1968. A new hypothesis to account for opposite trophic biomass structure on land and in water. Curr. Sci. 37:382-383.
- Misra, R., J. S. Singh, and K. P. Singh. 1968. Dry matter production in sun and shade leaves and a simple method for the measurement of primary productivity. Curr. Sci. 37:306-307.
- Pandeya, S. C., G. S. Puri and J. S. Singh. 1968. Research Methods in Plant Ecology, Asia Publishing House Pvt. Ltd., Bombay.
- Singh, J. S. 1969. Influence of biotic disturbance on the preponderance and interspecific association of two common forbs in the grasslands at Varanasi. Trop. Ecol. 10:59-71.
- Singh, J. S. 1969. Growth performance and dry matter yield of *Cassia tora* L. as influenced by population density. J. Indian Bot. Soc. 48:144-148.
- Singh, J. S. 1969. Growth of *Eleusine indica* L. Gaertn. under reduced light intensities. Proc. Natl. Inst. Sci., India, 35B:153-160.
- Singh, J. S. 1969. Growth of goosegrass in relation to certain environmental factors. Trop. Ecol. 9:78-87.
- Singh, J. S., and R. Misra. 1969. Diversity, dominance, stability, and net production in the grasslands at Varanasi. Canad. J. Bot. 47: 425-427.
- Singh, J. S., and R. Misra. 1969. Influence of direction of slope and reduced light intensities on the growth of *Eleusine indica*. Trop. Ecol. 10:27-33.
- Singh, J. S., and R. Misra. 1969. Interrelationships among certain leaf characteristics in *Cassia tora*. J. Indian Bot. Soc. 48:232-238.
- Misra, R., K. P. Singh, and J. S. Singh. 1969. Role of the provenance trial technique in the study of population differentiation. In Dr. H. Santapau commemoration volume. Bull. Bot. Surv. India 10:312-318.
- Singh, J. S. 1970. Effect of exposures to sub-freezing temperature on the survival and subsequent growth of *Eleusine indica* L. Gaertn. Sci. and Cult. 35:576-578.
- Singh, J. S. 1970. Influence of the period of exposures to alternating low and high temperatures on germination in *Eleusine indica*. Sci. and Cult. 36:472-473.

- Singh, J. S. 1970. Primary productivity in the grassland ecosystem at Kurukshetra. CSIR Progress Report No. 38(73) 169-GAU II, Kurukshetra University.
- Singh, J. S. 1971. Primary productivity in the grassland ecosystem at Kurukshetra. CSIR Technical Report No. 38(73) 169-GAU II, Kurukshetra University. 36 pp.
- Singh, J. S. and C. L. Mandahar. 1971. Primary productivity of three vegetable crops as influenced by Viral infection. *Trop. Ecol.* 12:223-227.
- Sims, P. L. and J. S. Singh. 1971. Herbage dynamics and net primary production in certain ungrazed and grazed grasslands in North America. In N. R. French [ed.] Preliminary analysis of structure and function in grasslands. Range Sci. Dep. Sci. Ser. No. 10, Colorado State Univ., Fort Collins. p. 59-124.
- Singh, J. S. 1972. US/IBP Grassland Biome literature: A KWIC index and abstracts. US/IBP Grassland Biome Technical Report No. 155, Colorado State Univ., Fort Collins. p. 176.
- Singh, J. S. 1972. Workbook for Modelling and Synthesis Workshop, International Grasslands and Tundra Workshop, Fort Collins, August 14-26. [Coordinator].
- Singh, J. S. and P. S. Yadava. 1972. Biomass structure and net primary productivity in the grassland ecosystem at Kurukshetra. In P. M. Golley and F. B. Golley [ed.] Proceedings of the symposium on Tropical Ecology with emphasis on organic production, University of Georgia, Athens, p. 59-74.
- Coupland, R. T., J. S. Singh, et al. 1972. Intercomparability of biomass data. In Report on the Modelling and Synthesis Workshop NREL, CSU. p. 18-50.
- Pandeya, S. C. and J. S. Singh. 1972. A brief resumé of environmental education in India. For International Workshop on environmental studies in higher education and teacher training, September 5-7, London, Ontario, Canada.
- Singh, J. S. 1973. Root respiration and decomposition. In D. A. Jameson and M. I. Dyer [ed.] Producer subsystem: Basic plant model. Chapter 4 of Process Studies Workshop. Colorado State Univ., Fort Collins. p. 26-38.
- Singh, J. S. 1973. A preliminary compartment model of herbage dynamics for Indian Tropical grasslands. *Oikos* (in press).
- Singh, J. S. and D. C. Coleman. 1973. A technique for evaluating functional root biomass in grassland ecosystems. (Submitted, *Canad. J. Botany*).
- Singh, J. S. and D. C. Coleman. 1973. Carbon-14 transfers and evaluation of functional root biomass in a shortgrass prairie ecosystem. *Bull. Ecol. Soc. Amer. Abstr.*

- Singh, J. S. and D. C. Coleman. 1973. Distribution of photoassimilated carbon-14 in the root system of a shortgrass prairie. (To be communicated).
- Singh, J. S. and D. C. Coleman. 1973. Evaluation of functional root biomass and translocation of photoassimilated carbon-14 in a shortgrass prairie ecosystem. In preparation for the Symposium on The Belowground Ecosystem: A Synthesis of Plant Associated Processes.
- Singh, J. S. and M. J. Trlica. 1973. Creation, translocation, and utilization of reserves. In preparation for IBP Arid Lands Synthesis Volume.
- Singh, J. S. and P. S. Yadav. 1973. Caloric values of important plant and insect species of a tropical grassland at Kurukshetra, India. Oikos. (In press).
- Swartzman, G. L. and J. S. Singh. 1973. A dynamic programming approach to optimal grazing strategies using a successional model for a tropical grassland. J. Appl. Ecol. (In press).
- Yadava, P. S. and J. S. Singh. 1973. Grasses and sedges of Kurukshetra, Haryana. Ann. Arid Zone. (In press).

Name: Freeman M. Smith

Born: 1939

Academic Training:

Degree	Year	Institution	Major
B.S.	1961	Univ. Arizona	Botany
M.S.	1969	Univ. Arizona	Watershed Management
Ph.D.	1971	Colorado State Univ.	Systems Ecol./Watershed Hydro.

Special Training:

Mathematical Methods in Hydrol. - Dec. 1968

Professional Experience:

Date	Position	Institution
1961-1962	Teaching Assistant	Univ. Arizona
1962-1963	Range Conservationist	USDA - ARS - SWC
1963-1965	Botanist	USDA - ARS - SWC
1965-1968	Research Botanist	USDA - ARS - SWC
1968-1971	Research Instructor	Colorado State Univ.
1971-	Assistant Professor	Colorado State University
	Dir. Synthesis & Integration	Colorado State University
	Abiotic Integrator	Colorado State University

Professional and Honorary Societies:

Sigma Xi	
American Society of Range Management	
Ecological Society of America	
AAAS	
American Geophysics Union	
	Xi Sigma Pi

Major Interests:

Biological Influences on Hydrologic Response.
Stochastic Processes in Hydrology.

Current Professional Activities:

Teaching: Systems Ecology
Ecological Simulation
Natural Resource Models
Critical Path Analysis

Publications, Technical Reports:

Hamon, W. R., C. W. Johnson, G. R. Stephenson, and F. M. Smith. 1965.
Development of coordinated hydrologic networks for a semi-arid watershed. Int. Ass. Sci. Hydrol., Symp., Design, of Hydrol. Networks, Extr. Pub. 68: 663-674.

Cooper, C. L. and F. M. Smith. 1966. Color aerial photography: toy or tool? J. Forest. 64:373-378.

- Smith, F. M., C. L. Cooper and E. G. Chapman. 1967. Measuring snow depth by aerial photo-grammetry: evaluation and recommendations. Western Snow Conference, Proc. Boise, Idaho.
- Smith, F. M. 1969. The relations of sagebrush leaf area to bush size. Master's thesis, University of Arizona, 54 p.
- Smith, F. M. and W. D. Striffler. 1969. Pawnee site microwatersheds: selection, description and instrumentation. U.S. IBP Grassland Biome Tech. Rep. No. 5. Colorado State Univ., Fort Collins. 29 p.
- Wright, R. G. and F. M. Smith. 1970. Grassland Biome graduate student symposium--a review. U.S. IBP Grassland Biome Tech. Rep. No. 59. Colorado State Univ., Fort Collins. 40 p.
- Van Dyne, G. M., F. M. Smith and L. J. Bledsoe. 1970. Techniques in measuring biomass of producers, p. 62-64. In R. T. Coupland and G. M. Van Dyne [ed.] Grassland Ecosystems: Reviews of Research. Range Sci. Dep. Sci. Ser. No. 7. Colorado State Univ., Fort Collins.
- Smith, F. M. 1971. Growing season precipitation records; Central Plains Experimental Range, Nunn, Colorado. U.S. IBP Grassland Biome Tech. Rep. No. 74. Colorado State Univ., Fort Collins. 73 p.
- Smith, F. M. 1971. Central basin hydrologic process studies. U.S. IBP Grassland Biome Tech. Rep. No. 91. Colorado State Univ., Fort Collins. 26 p.
- Smith, F. M. 1971. A volumetric threshold infiltration model, Ph.D. Diss. Colorado State University, Fort Collins. 234 p.
- Smith, F. M. 1972. Growth response of blue grama to thunderstorm rainfall. U.S. IBP Grassland Biome Tech. Rep. No. 157. Colorado State Univ., Fort Collins. 31 p.
- Rauzi, F. and F. M. Smith. 1973. Influence of soils and grazing intensity on water intake. Jour. Rang. Manage. 26(2):126-129.

Name: James D. Smolik

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B.S.	1965	South Dakota State University	Plant Pathology
M.S.	1969	South Dakota State University	Plant Pathology
Ph.D.	1973	South Dakota State University	Plant Science

Professional Experience:

Date	Position	Institution
1969-	Assistant in Plant Science	South Dakota State University

Professional and Honorary Societies:

Gamma Sigma Delta
Sigma Xi
Society of Nematologists
South Dakota Academy of Science

Major Interests:

Nematology

Current Professional Activities:

Ecology of nematodes in a grassland ecosystem.
Role of nematodes in shelterbelt decline in South Dakota.
Relationship of root rot and nematode resistance in corn.

Publications, Technical Reports:

- Thorne, G. and J. D. Smolik. 1971. The identity of *Paratylenchus nanus*.
Cobb, 1923. Proc. Helminth. Soc. Wash. 38(1):90-92.
- Smolik, J. D. and R. B. Malek. 1972. *Tylenchorhynchus nudus* and other nematodes associated with Kentucky bluegrass turf in South Dakota. Plant Disease Reprtr. 56:898-890.
- Smolik, J. D. and R. B. Malek. 1972. Influence of temperature and host range on reproduction of *Tylenchorhynchus nudus*. Proc. S.D. Acad. Sci., Vol 51.
- Smolik, J. D. 1972. Reproduction of *Helicotylenchus leiocephalus* and *Tylenchorhynchus nudus* on spring wheat and effect of *T. nudus* on growth of spring wheat. Proc. S.D. Acad. Sci., Vol. 51.

Name: Eugene E. Staffeldt

Born: 1926

Academic Training:

Degree

B.S.	1949	Northern Illinois State Univ.	Botany and Zoology
M.S.	1951	Iowa State University	Plant Pathology
Ph.D.	1953	Iowa State University	Plant Pathology & Soil

Professional Experience:

Date

1950-1953	Graduate Assistant	Iowa State
1953-1955	Assistant Professor	New Mexico State Univ.
1955-1957	Consultant, New Mexico State Univ.	Contract with Univ. Sind, West Pakistan
1957-1964	Associate Professor of Biology	New Mexico State Univ.
1964-1965	Visiting Professor	American Univ. Beirut, Beirut, Lebanon
1965-	Professor of Biology	New Mexico State Univ.

Professional and Honorary Societies:

Sigma Xi
AAAS
Society of Industrial Microbiology

Major Interests:

Soil microbiology, carbon and nitrogen

Publications, Technical Reports:

- Staffeldt, E. E. 1951. *Pythium* and other fungi colonizing sterilized straw in the soil. *Phytopathology* 42:22.
- Staffeldt, E. E. 1953. Effects of four crop rotations on soil fungi and corn root necrosis. *Iowa State J. Sci.*
- Staffeldt, E. E. and E. L. Sharp. 1954. Modified Lypohil Method for preservation of *Pythium* species. *Phytopathology* 44:213-215.
- Staffeldt, E. E. and P. J. Leyendecker, Jr. 1955. *Verticillium* wilt on two vegetable hosts in southern New Mexico. *Plant Dis. Reporter* 39:589-590.
- Staffeldt, E. E. and P. A. Fryxell. 1955. A measurement of disease reaction of cotton to *Verticillium* wilt. *Plant Dis. Reporter* 39:690-692.
- Qazi, A. Q., S. A. Khan, and E. E. Staffeldt. 1957. Identification of *Rhizoctonia bataticola*. *Pakistan J. Sci.* 13:136-137.

- Burns, J., E. E. Staffeldt, and O. H. Calderon. 1967. Corrosion caused by organic acids reacting with three metals, with special emphasis on Krebs Cycle acids. Develop. Ind. Microbiol. 8:327-334.
- Calderon, O. H., E. E. Staffeldt, and M. R. Sandoval. 1967. Effects of temperature on amounts of copper salts formed when pure copper is exposed to organic acids. Develop. Ind. Microbiol. 8:335-338.
- McCowen, K. D., O. H. Calderon, and E. E. Staffeldt. 1967. Effects of acid dilutions on amount of copper salts formed when pure copper is exposed to organic acids. Develop. Ind. Microbiol. 8:339-344.
- Mueller, E., K. Schell, O. H. Calderon, and E. E. Staffeldt. 1967. Effects of corrosion products of metals on microorganism and bean products. Develop. Ind. Microbiol. 8:345-352.
- Staffeldt, E. E. and O. H. Calderon. 1967. Metal-organic acid corrosion and the effect of corrosion products on microorganisms. The Rocky Mountain Sect. Amer. Astronautical Soc. Proc.
- Staffeldt, E. E., O. H. Calderon, and R. S. Hutton. 1968. Microbial inhabitants of a tropical deciduous forest soil in the Canal Zone. Develop. Ind. Microbiol. 9:312-317.
- Hutton, R. S., E. E. Staffeldt, and O. H. Calderon. 1968. Aerial spora and surface deposition of microorganisms in a deciduous forest in the Canal Zone. Develop. Ind. Microbiol. 9:318-324.
- Calderon, O. H., R. S. Hutton, and E. E. Staffeldt. 1968. Deposition of microorganisms on missiles and related equipment exposed to tropical environments. Develop. Ind. Microbiol. 9:325-330.

Name: R. Kirk Steinhorst

Born: 1944

Academic Training:

Degree	Year	Institution	Major
B.S.	1966	University of Southwestern Louisiana	Mathematics
M.S.	1969	Colorado State University	Statistics
Ph.D.	1971	Colorado State University	Statistics

Professional Experience:

Date	Position	Institution
1964-1966	Mathematical Lab Assistant	University of Southwestern Louisiana
1966	Programmer	TRW, Houston
1966-1970	NIH Trainee	Colorado State University
1970-1972	Assistant Professor	San Diego State College
1972-	Director, Statistical Ser.	Natural Resource Ecology Lab Colorado State University

Professional and Honorary Societies:

American Statistical Association	AAAS
Institute of Mathematical Statistics	Sigma Xi
Mu Sigma Rho	Blue Key
Kappa Mu Epsilon	Sigma Iota Epsilon
Who's Who in American Colleges and Universities	

Major Interests:

Simultaneous statistical inference, linear models, applications of statistics in ecology.

Publications, Technical Reports:

- Steinhorst, R. K. and C. Dean Miller. 1969. Disproportionality of cell frequencies in psychological and educational experiments involving multiple classification. Educational and Psychological Measurement 29:799-811.
- Steinhorst, R. K. 1971. What the Union-Tribune doesn't tell us. San Diego Magazine 23:71.
- Steinhorst, R. K. and David C. Bowden. 1971. Discrimination and confidence bands on perceptiles. J. Amer. Stat. Assoc 66:851-854.
- Steinhorst, R. K. and David C. Bowden. 1973. Tolerance bands for growth curves. Biometrics 29:361-371.

Name: William D. Striffler

Born: 1929

Academic Training:

Degree	Year	Institution	Major
B.S., B.S.F.	1952	Michigan State University	Forestry
M.F.	1957	University of Michigan	Watershed Management
Ph.D.	1963	University of Michigan	Forest Hydrology

Special Training:

Electronics for Scientists, NSF Institute, Corvallis, Oregon, 1969.
IHD/NSF International Seminar for Hydrology Professor, Purdue Univ. 1971

Professional Experience:

Date	Position	Institution
1957-1963	Res. Forester & Proj. Leader	Lake States For. Exp. Sta.
1964-1966	Hydrologist	N. E. For. Exp. Sta.
1966-1969	Assistant Professor	Colorado State Univ.
1969-	Associate Professor	Colorado State Univ.

Professional and Honorary Societies:

American Geophysical Union	American Water Resources Association
Soil Conservation Society of America	Sigma Xi
Society of American Foresters	Xi Sigma Pi
	AAAS

Major Interests:

Forest & Range Hydrology, Micro-climatology, Instrumentation

Current Professional Activities:

Teaching: Evapotranspiration, watershed instrumentation, watershed manage.

Research: Grassland Hydrology Project

Publications, Technical Reports:

- Striffler, W. D. 1959. Effects of forest cover on soil freezing in northern lower Michigan. Lake States Forest Exp. Sta. Paper 76. 16 p.
- Striffler, W. D. 1960. Forests help water supply. Michigan Farmer 233:52-53.
- Striffler, W. D. 1960. Streambank stabilization in Michigan - a survey. Lake States Forest Exp. Sta. Paper 84. 14 p.
- Striffler, W. D. 1961. Intensity of soil moisture sampling as affected by depth and vegetative cover. Lake States Forest Exp. Sta. Tech. Note 603. 2 p.
- Striffler, W. D. 1963. Suspended sediment concentration in a Michigan trout stream as related to watershed characteristics. Fed. Interagency Sedimentation Conf. Proc. USDA Misc. Pub. No. 970. p. 144-150.

- Striffler, W. D. 1964. Sediment, streamflow, and land use relationships in northern lower Michigan. Lake States Forest Exp. Sta. Res. Paper LS-16. 12 p.
- Striffler, W. D. 1965. The selection of experimental watersheds and methods in disturbed forest areas. Symp. Budapest, Representative and Exp. Areas, Vol. 2. IASH Pub. No. 66. p. 464-473.
- Striffler, W. D. and R. F. May. 1965. The forest restoration of strip-mined areas. Annu. SAF Meeting, Detroit, Michigan, Proc. p. 105-108.
- May, R. F. and W. D. Striffler. 1965. Watershed aspects of stabilization and restoration of strip-mined areas. Int. Symp. on Forest Hydrol., Pennsylvania State Univ., Proc. p. 663-671.
- Striffler, W. D. 1967. Restoration of open-cast coal sites in Great Britain. J. Soil and Water Conserv. 22:101-103.
- Striffler, W. D. 1969. A Review: "Principles of hydrology." R. C. Ward. J. Soil and Water Conserv. 24:28-29.
- Striffler, W. D. 1969. The grassland hydrologic cycle, p. 101-116. In R. L. Dix and R. G. Beidleman [ed.] The grassland ecosystem. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 2. 437 p.
- Striffler, W. D. 1969. Surface mining disturbance and water quality in eastern Kentucky. Paper presented at Int. Symp. on Ecol. and Revegetation of Drastically Disturbed Areas. Pennsylvania State Univ. (in press).
- Hubbard, J. E. and W. D. Striffler. 1969. Distribution of cesium - 137 in a small Alpine watershed. Presented at Western Nat. Meeting of Amer. Geophys. Union. San Francisco.
- Striffler, W. D. and F. M. Smith. 1969. Pawnee Site microwatersheds: selection, description and instrumentation. U.S. IBP Grassland Biome Tech. Rep. No. 5. Colorado State Univ., Fort Collins. 29 p.
- Striffler, W. D. 1970. Hydrologic research in the IBP Grassland Biome Program. J. Range Manage. 23rd Annu. Meeting Amer. Soc. Range Manage., p. 23. Abstr.
- Striffler, W. D. 1970. Hydrologic cycle of grasslands, p. 174. In R. T. Coupland and G. M. Van Dyne [ed.] Grassland ecosystems: review of research. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 7.
- Striffler, W. D. and P. Edwards. 1970. A hydrologic data collection system. Paper presented at IBP Seminar, Boulder, Colorado.
- Striffler, W. D. 1971. Hydrologic data, 1970, Pawnee Grasslands. U.S. IBP Tech. Rep. No. 76. Colorado State Univ., Fort Collins. 23 p.
- *Galbraeth, A. F. and W. D. Striffler. 1971. The water balance of a shortgrass prairie ecosystem. Presented at Western Annual National Meeting of American Geophysical Union. Dec. 8-9, 1971.
- *Striffler, W. D. 1972. Hydrologic data, 1971, Pawnee Grasslands. U.S. IBP Grassland Biome Tech. Rep. No. 196. Colorado State Univ., Fort Collins. 67 p.

Striffler, W. D. 1972. Stripmining and watershed management. *In* Age of changing priorities for land and water. ASCE Specialties Conference. Irrigation and Drainage Division. Spokane, Washington. Sept. 26-28, 1972. p. 79-85.

Name: Gordon Swartzman

Born: 1943

Academic Training:

Degree	Year	Institution	Major
B.S.	1964	Cooper Union	Electrical Engr.
M.S.	1965	University of Michigan	Electrical Engr.
Ph.D.	1969	University of Michigan	Industrial Engr.

Professional Experience:

Date	Position	Institution
1969-1971	Assistant Professor, Range Science	Colorado State University
1971-1972	Research Associate	Natural Resource Ecology Laboratory
1972-	Independent Scientific Research	Independent

Professional and Honorary Societies:

Operations Research Society of America (ORSA)
Tau Beta Pi)
Eta Kappa Nu) National Engineering Honor Society

Major Interests:

Ornithology, ethnology, travel, community and political action, and environmental quality.

Current Professional Activities:

Book Chairman for coming ORSA meeting

Research: Modelling; philosophy of modelling; special problem session: the effects of urbanization upon the environment.

Publications, Technical Reports:

Swartzman, Gordon. 1969. Scheduling in a hospital system. Paper presented at National ORSA meeting.

Swartzman, Gordon. 1969. Some results on hospital scheduling. Paper presented at National ORSA meeting.

Swartzman, Gordon and R. L. Disney. 1970. The effect of scheduling outpatients -- Health Services Research.

Swartzman, Gordon. 1970. A first pass bird model. IBP Technical Report #3.

Swartzman, Gordon, et al. 1970. Some concepts of modelling. IBP Technical Report #32 (coordinator).

Swartzman, Gordon. 1970. Eco tactics. Paper presented at the conference on environmental quality, Boulder, Colorado.

Name: David M. Swift

Born: 1941

Academic Training:

Degree	Year	Institution	Major
B.S.	1963	New York State College of Forestry	Forest Botany
M.S.	1970	Colorado State University	Watershed Resources

Professional Experience:

Date	Position	Institution
1970-	Programming Coordinator	Natural Resource Ecology Laboratory

Professional and Honorary Societies:

Phi Kappa Phi

Major Interests:

Data processing; population estimators

Publications, Technical Reports:

Swift, D. M. [Coordinator]. 1970. Current generalized computer programs used in Grassland Biome analyses. U.S. IBP Grassland Biome Tech. Rep. No. 34. Colorado State Univ., Fort Collins. 286 p.

Swift, D. M. and N. R. French [Coordinators]. 1972. Basic field data collection procedures for the Grassland Biome 1972 season. U.S. IBP Grassland Biome Tech. Rep. No. 145. Colorado State Univ., Fort Collins. 86 p.

Swift, D. M. and U. G. Bokhari. 1972. Basic sample collection and handling procedures for the Grassland Biome 1972 season. U.S. IBP Grassland Biome Tech. Rep. No. 146. Colorado State Univ., Fort Collins. 17 p.

Name: Theodore O. Thatcher

Born: 1910

Academic Training:

Degree	Year	Institution	Major
B.S.	1933	Utah State University	Entomology & Botany
M.S.	1935	Utah State University	Entomology
Ph.D.	1948	University of California (Berkeley)	Entomology

Professional Experience:

Date	Position	Institution
1935-1936	Field Aide	USDA, Bur. Ent.
1937-1941	Naturalist & Act. Custodian	Lehman Caves Nat'l. Mon. USNAS Baker, Nevada
1941-1946	Officer in U. S. Army	
1946-1948	Graduate Research & Teaching Asst.	University of California
1948-	Assistant to Professor	Colorado State University

Professional and Honorary Societies:

Entomological Society of America	Coleopterists Society
Entomological Society of Canada	Sigma Xi
Entomological Society of Pakistan	Alpha Gamma Rho
Society of Systematic Zoology	

Major Interests:

Systematics (particularly of immatures) of forest insects (specialty Scolytidae); Ecology of insects; Ecology of human; Scientific illustration

Current Professional Activities:

Teaching: Systematic Entomology, Immature Insects, Science illustration, Forest Entomology, Insect Ecology

Research: IBP - Insect ecology of grassland biome, Ecology of forest seed destroying insects, Taxonomy of immature insects

Publications, Technical Reports:

Knowlton, G. F. and T. O. Thatcher. 1934. Utah houseflies. Utah Acad. Sci., Arts, & Letters Proc. 11:291-294.

Thatcher, T. O. 1935. Scolytidae of the Logan Canyon Area (Utah). Utah Acad. Sci., Arts, & Letters Proc. 12:261-262.

Knowlton, G. F. and T. O. Thatcher. 1936. Notes on wood-boring insects. Utah Acad. Sci., Arts, & Letters Proc. 13:277-281.

- Thatcher, T. O. 1940. A new genus of Scolytidae (Coleoptera) from Utah & Nevada. Utah Acad. Sci., Arts, & Letters Proc. 17:89-91.
- Thatcher, T. O. 1948. A new locality record of *Xenorhipis osborni* Knull, with notes on host and work. (Coleoptera:Buprestidae). Pan-Pacific Entomol. 24:32-33.
- Thatcher, T. O. 1954. A new species of *Dendroctinus* from Guatemala (Coleoptera:Scolytidae). Coleopterists Bull. 8:3-6.
- Thatcher, T. O. 1954. Manual in forest entomology. Colorado State Univ. Printing Serv. mimeo. 30 p.
- Thatcher, T. O. 1955. Principles of forest entomology. Text for forest entomology. Colorado State Univ. Printing Serv. mimeo 115 p.
- Thatcher, T. O. 1961. Forest entomology. Burgess Pub. Co.
- Thatcher, T. O. 1961. Laboratory manual in forest entomology. Burgess Pub. Co.
- Thatcher, T. O. 1965. Barkbeetle. In Encyclopedia Britannica.
- Thatcher, T. O. 1965. A new species of *ips* from Utah, Montana, and British Columbia. Canadian Entomol. 97:493-496.

Name: G. W. Tomanek

Born: 1921

Academic Training:

Degree	Year	Institution	Major
A.B.	1942	Fort Hays State	Botany
M.S.	1947	Fort Hays State	Botany
Ph.D.	1951	University of Nebraska	Botany

Professional Experience:

Date	Position	Institution
1947 - Present	Instructor to Division Chairman	Fort Hays Kansas State
1960 - 1961	Consultant for AID to Argentina	Department of State
1972-	Vice President Academic Affairs	Fort Hays Kansas State

Professional and Honorary Societies:

Phi Kappa Phi	AIBS
Sigma Xi	Soil Conservation Society of Amer.
American Society of Range Management	Kansas Academy of Science
Ecological Society of America	

Major Interests: Classification and functioning of grassland ecosystems;
Long-term changes in grassland production and composition

Current Professional Activities:

Vice President for Academic Affairs

Teaching: Course in Range Management

Research: Long-term studies on composition and production of several mixed prairie communities; primary productivity in a grassland ecosystem

Publications, Technical Reports:

Tomanek, G. W. 1948. Pasture Types of Western Kansas in relation to the intensity of utilization in past years. Kansas Acad. Sci. 51:171-196.

Weaver, J. E. and G. W. Tomanek. 1951. Ecological studies in a midwestern range: the vegetation and effects of cattle on its composition and distribution. Univ. Nebraska Conserv. Bull. 31. 82 p.

Tomanek, G. W. and F. W. Albertson. 1953. Some effects of different intensities of grazing on mixed prairies near Hays, Kansas. J. Range Manage. 6:299-306.

Tomanek, G. W., F. W. Albertson, and A. Riegel. 1955. Natural revegetation on a field abandoned for thirty-three years in central Kansas. Ecology 36:407-412.

- Martin, E. P., G. W. Tomanek, and F. W. Albertson. 1955. Use of regression line to estimate basal cover of sod-farming grasses. *Kansas Acad. Sci.* 58:526-527.
- Tomanek, G. W. and F. W. Albertson. 1957. Variations in cover, composition, production and roots of vegetation on two prairies in western Kansas. *Ecol. Monogr.* 27:267-281.
- Hopkins, H. H. and G. W. Tomanek. 1957. A study of woody vegetation at Cedar Bluff Reservoir. *Kansas Acad. Sci.* 60:351-359.
- Albertson, F. W., G. W. Tomanek, and A. Riegel. 1957. Ecology of drought cycles and grazing intensity on grasslands of Central Great Plains. *Ecol. Monogr.* 27:27-44.
- Tomanek, G. W. 1958. California range land (Burcham) book review. *Ecology* 30.
- Tomanek, G. W., E. P. Martin, and F. W. Albertson. 1958. Grazing preference comparisons of six native grasses in the mixed prairie. *J. Range Manage.* 11:191-193.
- Tomanek, G. W. 1959. Effects of climate and grazing on mixed prairie. *In* Grasslands. AAAS Pub. 53.
- Tomanek, G. W. and R. L. Ziegler. 1961. Ecological studies of salt cedar. *Bur. Reclam.* 128 p.
- Hulett, G. K. and G. W. Tomanek. 1961. Effects of some environmental factors of germination of salt cedar *Tamarix pentanara* Poll. *Kansas Acad. Sci.* 64:96-101.
- Tomanek, G. W. 1963. Field and laboratory guide for ecology (Lemon) book review. *J. Range Manage.* 16:211.
- Rahimian, H. and G. W. Tomanek. 1963. Wilting coefficients and infiltration rates of soils on four common plant communities near Hays, Kansas. *Kansas Acad. Sci.* 66:496-500.
- Riegel, D. A., F. W. Albertson, G. E. Tomanek, and F. E. Kinsinger. 1963. Effects of grazing and protection on a twenty year-old seeding. *J. Range Manage.* 16:60-63.
- Tomanek, G. W. 1964. Some soil-vegetation relationships in western Kansas. *Asa Spec. Pub.* 5:158-164.
- Patel, K. R., F. W. Albertson, and G. W. Tomanek. 1964. Microclimate and vegetation responses on three big bluestem *Andropogon gerardii* Vitman habitats near Hays, Kansas. *Kans. Acad. Sci.* 67:41-49.
- Albertson, F. W. and G. W. Tomanek. 1965. Vegetation changes during a 30-year period on grassland communities near Hays, Kansas. *Ecology* 46:714-720.

- Tomanek, G. W. 1966. How the society can help individual advisors and country workers. *J. Range Manage.* 19:333-335.
- Tomanek, G. W. and G. K. Hulett. 1966. A survey of Phreatophytes in the Cedar Bluff Reservoir Area, Kansas. *Bur. Reclam.*
- Albertson, F. W., D. A. Riegel, and G. W. Tomanek. 1966. Ecological studies of blue grama grass *Bouteloua gracilis*. *Fort Hays Stud. Sci.* 5.
- Goodman, Clyde L., G. W. Tomanek, and G. K. Hulett. 1967. A survey of Phreatophytes at Cedar Bluff Reservoir, Kansas. *Kansas Acad. Sci.* 70:451-463.
- Glover, Robert K., G. W. Tomanek, and D. L. Wolters. 1968. Soil and vegetation relationships on four slopes of the Ogallala Formation in Trego County, Kansas. *Kansas Acad. Sci.* 71:69-84.
- Hulett, G. K., C. D. Sloan, and G. W. Tomanek. 1968. The vegetation of remnant grasslands in the Loessial Region of northwestern Kansas and southwestern Nebraska. *Southwest Natur.* 13:377-391.
- Gesink, R. W., G. W. Tomanek, and G. K. Hulett. 1968. A descriptive survey of the woody Phreatophytes on the Arkansas River in Kansas. *Bur. Reclam.*
- Hulett, G. K. and G. W. Tomanek. 1969. Forage production on a clay upland range site in western Kansas. *J. Range Manage.* 22:270-276.
- Hulett, G. K. and G. W. Tomanek. 1969. Remnant prairies on the shallow limy range in north central Kansas. *J. Range Manage.* 22:20-23.
- Hulett, G. K., G. L. Van Amburg, and G. W. Tomanek. 1969. Soil depth-vegetation relationships on a shallow limy range site in western Kansas. *J. Range Manage.* 22:196-199.
- Tomanek, G. W. 1969. Phreatophyte investigations and related future water developments. *Proceed. 19th Annual Four States Irrigation Council*, Bur. of Reclam., Denver, Colorado.
- Tomanek, G. W. 1969. Grasslands of Kansas. Fort Hays Kansas State College, Inauguration 1969.
- Heitschmidt, R. K., G. K. Hulett and G. W. Tomanek. 1970. Vegetational map and community structure of a west Central Kansas Prairie. *The Southwestern Naturalist*, 14(3):337-350.
- Tomanek, G. W. and G. K. Hulett. 1970. Effects of historical droughts on grassland vegetation in the Central Great Plains. Department of Geology, Univ. of Kansas. Special Publication 3. Reprinted from: *Pleistocene and Recent Environments of the Central Great Plains*, pp. 203-210.

- Gesink, R. W., G. W. Tomanek and G. K. Hulett. 1970. A descriptive survey of woody phreatophytes along the Arkansas River in Kansas. Transactions of the Kansas Academy of Sci., 73(1):55-69.
- Struble, P. and G. W. Tomanek. 1971. Survey of the plant population on an ungrazed meadow in north Central Kansas. Trans. of the Kansas Acad. of Sci., 74(2).
- Hladek, K. L., G. K. Hulett and G. W. Tomanek. 1972. The vegetation of remnant shale-limestone prairies in western Kansas. The Southwestern Naturalist 17(10):1-10.
- Tomanek, G. W. and G. K. Hulett. 1972. A survey of some remnant prairies of the Central Great Plains. The Second Midwest Prairie Conf., Madison, Wisconsin, Sept. 18-20, 1970. pp. 34-39.
- Hulett, G. K. and G. W. Tomanek. 1972. Herbage dynamics on a mixed prairie grassland, 1968-1970. U.S. IBP Grassland Biome Tech. Rep. No. 108. Colorado State Univ., Fort Collins. 38 p.

Name: M. J. (Joe) Trlica, Jr.

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B. S.	1964	Southwest Texas State University	Biology
M. S.	1967	Texas Tech University	Range Science
Ph.D.	1971	Utah State University	Ecology

Professional Experience:

Date	Position	Institution
1963-64	Lab Instructor, Biology Department	Southwest Texas State University
1965-67	Research Assistant	Texas Tech University
1967-70	Research Assistant	Utah State University
1970-	Assistant Professor	Colorado State University

Professional and Honorary Societies:

American Society of Range Management
Crop Science Society of America
The Ecological Society of America
American Institute of Biological Sciences
Sigma Xi
Alpha Zeta

Major Interests:

Plant Ecophysiology
Primary Productivity
Range Plant Ecology

Publications, Technical Reports:

- Trlica, M. J., Jr. et al. 1966-67. Seven articles on range research at Texas Tech Research Farm. *In* Research Farm Reports.
- Trlica, M. J., Jr. and J. L. Schuster. 1969. Effects of fire on grasses of the Texas High Plains. *J. Range Manage.* 22:329-333.
- Trlica, M. J., Jr. and C. Wayne Cook. 1971. Defoliated effects on carbohydrate reserves of desert species. *J. Range Management* 24:418-425.
- Trlica, M. J., Jr. and C. Wayne Cook. 1972. Carbohydrate reserves of crested wheatgrass and Russian wildrye as influenced by development and defoliation. *J. Range Manage.* 25:430-435.
- Trlica, M. J., Jr. 1973. Effects of frequency and intensity of defoliation on primary producers of arid and semi-arid rangelands. ANU Press (In press).

- Dye, A. J., L. F. Brown and M. J. Trlica, Jr. 1972. Carbon dioxide exchange of blue grama as influenced by several ecological parameters, 1971. U.S. IBP Grassland Biome Tech. Rep. No. 181, Colorado State Univ., Fort Collins. 44 p.
- Trlica, M. J., A. J. Dye, W. H. Moir, L. F. Brown, D. A. Jameson, and W. A. Rice. 1973. A field laboratory for gas exchange measurements of grassland swards. (Submitted to *Photosynthetica*).
- Connor, D. J., L. F. Brown, and M. J. Trlica. 1973. Plant cover, light interception, and photosynthesis of short grass prairie. (Submitted to *Photosynthetica*).

Name: George Mason Van Dyne

Born: 1932

Academic Training:

Degree	Year	Institution	Major
Assoc.	1952	Pueblo College	Arts and Sciences
B.S.	1954	Colorado A & M	Agriculture (Animal Husbandry)
M.S.	1956	South Dakota State Univ.	Animal Husbandry (Nutrition)
Ph.D.	1963	Univ. California	Nutrition (Biometrics, Biochemistry)

Special Training:

Certificate 1964. Analog computation. Instrument Soc. Amer., Oak Ridge Sect.
 Certificate 1964. Foundations & tools for operations research & the management sciences. Univ. Michigan Summer Eng. Conf.
 Certificate 1968. Mathematical & Computer analysis of biological system models. Washington Engineering Services Co., Inc.

Professional Experience:

Date	Position	Institution
1954-1956	Research Assistant	South Dakota Agr. Exp. Sta.
1956-1957	Instructor	CSU, Coll. Forest. & Range Manage.
1957-1961	Assistant Professor	Mont. St. Coll., Anim. & Range Sci.
1961-1964	Assistant Res. Nutritionist	U. Calif. Davis, Anim. Husbandry
1964-1966	Joint Ecologist & Assoc. Prof.	Oak Ridge Nat. Lab
		Univ. Tennessee, Botany
1966-1968	Joint Assoc. Prof. Biology	CSU, Fish & Wildl. & Range Sci.
1968-	Joint Professor Biology	CSU, Range Sci., Fish & Wildl.
1970-	Dir. Natural Resource Ecology Laboratory	Colorado State University
1972-1973	Sabbatical Leave	Grassland Research Institute, Hurley, England

Professional and Honorary Societies:

American Society of Animal Science	The Wildlife Society
Ecological Society of America	AAAS
American Society of Range Management	Sigma Xi
American Institute of Biological Science	Phi Theta Kappa
International Association for Ecology	

Major Interests:

Nutrition of range plants and animals, forage evaluation; modelling, analysis, and computer applications to biological problems; soil-plant-animal relationships; and systems ecology.

Current Professional Activities:

National Academy of Sciences, Committee on Terrestrial Productivity, International Biological Program
 International Working Group on Productivity of Large Mammals, IBP

Director, Grassland Biome Study, US/IBP
Associate Botanical Editor, *Ecology* Manuscript Reviewer: *J. Animal Science*,
J. Range Management, *Science*
Member of Editorial Board for *Environmental Management*, a journal published
by Academic Press
Organized Symposia at annual meetings of American Societies of Animal Science
and Range Management; organized interdisciplinary workshops on ecological
modelling under Ford Foundation program

Teaching: Organizer of, and participant in, a five-man team (from Depart-
ments of Range Science, Fishery and Wildlife Biology, Forest and
Wood Sciences, Mathematics and Statistics, and Electrical Engi-
neering) teaching an integrated, three-quarter graduate sequence--
Systems Ecology, Ecological Simulation and Natural Resource Models

Publications, Technical Reports:

- Lewis, J. K., G. M. Van Dyne, L. R. Albee, and F. W. Whetzel. 1956. Intensity of grazing--its effects on livestock and forage production. South Dakota Agr. Exp. Sta. Bull. 459. 44 p.
- Van Dyne, G. M. 1957. Range measurements: condition, grazing capacity, trend, and utilization. Montana State Coll. Mimeo. 231 p.
- Van Dyne, G. M. 1957. Handling range for better beef production. Ann. Beef Production School, Proc., 3:9-15. Montana St. Coll.
- Van Dyne, G. M. 1958. Ranges and range plants. Montana St. Coll. Multilith. 300 p. (revised 1961).
- Van Dyne, G. M. 1958. Report of progress of existing projects: Range management studies. Ann. Sheep and Wool Production School, Proc., 6:111-114. Montana St. Coll.
- Van Dyne, G. M. 1958. Bibliography on evaluation of the diet of grazing animals. (67 references). Anim. Ind. and Range Manage. Dep., Montana St. Coll. 5 p.
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Academic Training:

Degree	Year	Institution	Major
B.S.	1955	Potchefstroom University	Botany
M.S.	1958	Potchefstroom University	Botany
Ph.D.	1963	Duke University	Ecology

Professional Experience:

Date	Position	Institution
1958	Lecturer in Botany	Potchefstroom University
1970	Professor of Biology	Potchefstroom University
1970-71	Professor of Biology (Visiting foreign professor)	Eastern Montana College, Billings
1971	Professor in Botany	Potchefstroom University

Professional and Honorary Societies:

South African Botanical Society
South African Society of Arts and Sciences

Major Interests:

Ecology and Wildlife Management

Publications, Technical Reports:

- Van Wyk, J. J. P. 1959. The crowncover meter - a new ecological sampling device. South African Acad. Sci. Proc. Annu. General Meeting. 1966.
- Van Wyk, J. J. P. 1969. Drought destruction in South African Sweet Bushveld-South African Med. J. Des. 1967: 1247-1254.
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- Van Wyk, J. J. P. 1973. Die vraagstuk van Besoedeling. Almanak van die Geref. Kerk. Suid-Afrika. 185-188.

Name: C. Gerald Warren

Born: 1924

Academic Training:

Degree	Year	Institution	Major
B.A.	1949	Park College	Chemistry and Math
Ph.D.	1958	University of New Mexico	Geology and Chemistry

Special Training:

University of Chicago, Math correspondence courses
Colorado State University, 30 hours of graduate math courses

Professional Experience:

Date		
1949-1955	Analytical Chemist	University of California's Los Alamos Scientific Laboratory
1955-1957	Graduate Student	University of New Mexico
1957-1961	Assistant Professor	Western State College
1961-	Associate Professor	Colorado State University
1964-1965	Consultant	Los Alamos Scientific Laboratory
1966-	Geochemist	U.S. Geological Survey, Denver

Professional and Honorary Societies:

American Chemical Society	AAAS
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Major Interests:

Geochemical cycles for nitrogen sulfur and selenium; isotope geology for nitrogen, sulfur, and selenium; economic geochemistry of uranium and copper

Current Professional Activities:

Personal research includes the chemical aspects governing formation of uranium and copper depots. Performed for the U.S. Geological Survey.

Publications, Technical Reports:

Warren, C. G. 1968. The synthesis of ferroselite from an aqueous solution at low temperature. Econ. Geology 63:418.

Al-Zagoam, M. N. and C. G. Warren. 1969. The acid reaction and ionization constants of oxine-n-oxide. J. of Inorganic and Nuclear Chem. 31:3465-3470.

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- Warren, C. G. 1972. Sulfur isotopes as a clue to the genetic geochemistry of a roll-type uranium deposit. Econ. Geology 67(6):759-767.
- Warren, C. G. and H. C. Granger. 1973. The concept of growth and maturity of ore stage pyrite in roll-type uranium deposits. J. of Research of the U.S. Geological Survey 1(2):151-155.
- Granger, H. C. and C. G. Warren. 1973. Dissolved oxygen and genesis of roll-type uranium deposits. (Manuscript under review).

Name: Kenneth E. F. Watt

Born:

Academic Training:

Degree	Year	Institution	Major
B.A.	1951	University of Toronto	Biology
Ph.D.	1954	University of Chicago	Zoology
L.L.D.	1970	Simon Fraser University	

Professional Experience:

Year	Position	Institution
1960-1963	Chairman	Statistical Research Service Canadian Department of Forestry
1963-1964	Associate Professor	University of California
1965-	Professor	University of California

Professional and Honorary Societies:

Entomological Society of Canada
Wildlife Society Fisheries Award

Major Interests:

Human ecology; systems analysis of biological systems.

Current Professional Activities:

Research on mathematical model of human society for use in computer simulation studies - Ford Foundation and U.S. National Science Foundation
Contributing editor - Saturday Review of the Sciences

Publications, Technical Reports:

Watt, Kenneth E. F. 1967. Systems analysis in ecology. Academic Press, New York.

Watt, Kenneth E. F. 1968. Ecology and resource management. McGraw-Hill, Inc., New York.

Watt, Kenneth E. F. 1973. Principles of environmental science. McGraw-Hill, Inc., New York.

(The author has also published some 100 papers).

Name: J. G. Watts

Born: 1910

Academic Training:

Degree	Year	Institution	Major
B.S.	1931	Clemson University	Entomology
M.S.	1933	Ohio State University	Entomology
Ph.D.	1956	Ohio State University	Entomology

Professional Experience:

Date	Position	Institution
1931-1955	Assistant Entomologist Associate Entomologist Professor of Entomology	Clemson University South Carolina Agr. Exp. Sta.
1955-	Professor of Entomology	New Mexico State University New Mexico Agr. Exp. Sta.

Professional and Honorary Societies:

Entomological Society of America
American Society of Range Management
Sigma Xi

Major Interests:

Rangeland Entomology - biology, ecology and behavior
Forage Insects - host resistance

Current Professional Activities:

Department Head

Research: Grass seed insects; Alfalfa resistance to Lygus; IBP Collaborator-Insect biomass

Publications, Technical Reports:

- Watts, J. G. 1934. *Chirothripoides dendropogonus*. A new species of thrips of a family new to North America (Chirothripidae:Thysanoptera). Ann. Entomol. Soc. Amer. 27:542-544.
- Watts, J. G. 1934. A new species and variety of *Plesiothrips* (Thripidae: Thysanoptera). The Florida Entomol. 17:24-27.
- Watts, J. G. 1934. A comparison of the life cycles of *Frankliniella tritici* (Fitch), *F. fusca* (Hinds), and *Thrips tabaci* Lind. (Thysanoptera:Thripidae) in South Carolina. J. Econ. Entomol. 27:1158-1159.
- Watts, J. G. 1935. Two new species of *Stephanothrips* from South Carolina and key to the known species (Urothripidae:Thysanoptera). Ann. Entomol. Soc. Amer. 28:126-130.

- Watts, J. G. 1936. A study of the biology of the flower thrips, *Frankliniella tritici* (Fitch), with special reference to cotton. South Carolina Agr. Exp. Sta. Bull. 306, 46 p.
- Watts, J. G. 1938. Species of thrips found on cotton in South Carolina. J. Econ. Entomol. 30:857-860.
- Watts, J. G. 1938. Reduction of cotton yield by thrips. J. Econ. Entomol. 30:860-863.
- Watts, J. G. 1941. A progress report on tomato fruit worm studies. J. Econ. Entomol. 34:400-405.
- Watts, J. G. 1948. Cotton insect control with organic insecticides. J. Econ. Entomol. 41:543-547.
- Watts, J. G. 1951. Soil insect control in southeast by mixtures of pesticides and fertilizers. Agr. Chem. 6, 4 p.
- Watts, J. G. 1951. Cotton insect calandra for South Carolina. South Carolina Agri. Exp. Sta. Misc. Circ. 400.
- Watts, J. G. 1951. Control of sand wireworm with chlorinated insecticides. J. Econ. Entomol. 44:619-620.
- Watts, J. G. 1954. Response of nut grass to soil applications of organic insecticides. J. Econ. Entomol. 47:435-438.
- Watts, J. G. and J. B. Hatcher. 1954. White grub damage to young pine plantations. J. Econ. Entomol. 47:710-711.
- Watts, J. G. 1955. Effects of insecticides on phytotoxicity and off-flavor. Farm Chem., May, 5 p.
- Watts, J. G. 1955. Granulate cutworm damage to watermelons. South Carolina Agri. Res. 2:7.
- Dobson, R. C. and J. G. Watts. 1956. Adult buprestid causes crop damage. J. Econ. Entomol. 49:391.
- Dobson, R. C. and J. G. Watts. 1957. Spotted alfalfa aphid occurrence on seedling alfalfa as influenced by systemic insecticides and varieties. J. Econ. Entomol. 50:132-135.
- Watts, J. G. 1959. Tubulifera thrips damage lettuce. J. Econ. Entomol. 52:786.
- Watts, J. G. 1964. Insects associated with black grama grass (*Bouteloua eriopoda*). Ann. Entomol. Soc. Amer. 56:374-379.
- Watts, J. G. 1965. *Chirothrips falsus* on black grama grass. New Mexico Agr. Exp. Sta. Bull. 499.
- Watts, J. G., C. B. Coleman, and C. R. Glover. 1967. Colormetric detection of chalcid-infested alfalfa seed. J. Econ. Entomol. 60:59-60.

- Watts, J. G. and A. C. Bellotti. 1967. Some new and little-known insects of economic importance on range grasses. J. Econ. Entomol. 60:961-963.
- Watts, J. G. 1970. Occurrence and distribution of *Chirothrips* Haliday spp. in New Mexico. Ann. Entomol. Soc. Amer. 63(5):1243-1245.
- Kinzer, H. G., B. J. Ridgill and J. G. Watts. 1970. Biology and cone attack behavior of *Conophthorus ponderosae* in Southern New Mexico (Coleoptera: Scolytidae). Ann. Entomol. Soc. Amer. 63(3):795-798.
- Melton, B., J. G. Watts, B. Verling, W. Knipe and R. Ditterline. 1971. Breeding for lygus resistance in Alfalfa. New Mexico Agric. Exp. Sta., Res. Rep. 197. 9 p.
- Watts, J. G. 1972. Description and new distribution records of *Chirothrips* (Thysanoptera: Thripidae). Ann. Entomol. Soc. Amer. 65(3):589-594.

Name: Theodore W. Weaver

Born: 1940

Academic Training:

Degree	Year	Institution	Major
B.A.	1963	Carleton College	Biology
M.A.	1965	University of Montana	Botany
Ph.D.	1969	Duke University	Botany

Professional Experience:

Date	Position	Institution
1969-	Assistant Professor	Montana State University
1972-1973	Sabbatical Winter Quarter	Colorado State University Natural Resource Ecology Lab

Professional and Honorary Societies:

Ecological Society of America	Sigma Xi
British Ecological Society	Phi Sigma
Montana Academy of Science	

Major Interests:

Ecosystem function; ecological effects of weather modification; other human impact problems.

Current Professional Activities:

Bridger Site - IBP Grassland Biome - NSF Grant
Ecological effects of added snowfall - NSF Grant
Ecological effects of added silver - Bureau of Reclamation grant
Effects of trampling on forest understories - NSF Grant

Publications, Technical Reports:

- Weaver, T. W. 1963. Variation in the spruce complex of the northern Rocky Mountains. M.S. Thesis, Montana State Univ., Missoula.
- Weaver, T. W. 1969. Factors causing segregation of fall-line sandhills oaks, North Carolina. Ph.D. Thesis, Duke Univ., Durham, North Carolina.
- Habeck, J. and T. W. Weaver. 1969. A chemosystematic analysis of some hybrid spruce (*Picea*) populations in Montana. Can. J. Bot. 47:1565-1570.
- Weaver, T. W. 1970. Weather modification: does Montana need it? Now 7: 8-9.
- Weaver, T. W. 1971. Ecological effects of weather modification: silver holding capacity of Montana soils. Mont. Academy of Science 31:40-46.

- Weaver, T. W. and M. Klages. 1971. Soil fertility in Montana: a map based on analysis of farmer's samples. Mont. Academy of Science 31: 47-50.
- Weaver, T. W. 1972. Effects of seeding agents on microorganisms and vascular plants. In Burris 1972 impacts of induced rainfall on the great plains of Montana: an interim report. Mont. Ag. Expt. Sta. Res. Rep. 26, Bozeman.
- Weaver, T. W. 1972. Decomposition of *Quercus laevis* leaves in the Carolina fall-line sandhills. Mont. Academy of Science 32:24-26.
- Weaver, T. W. and D. Brock. 1972. Ecological effects of weather modification: effects of silver nitrate on plant growth. Mont. Academy of Science Proc. 32:27-30.
- Collins, D. and T. W. Weaver. 1972. Grassland Biome studies at the Bridger site 1971. U.S. IBP Grassland Biome Tech. Rep. No. 198. Colorado State Univ., Fort Collins. 20 p.
- Weaver, T. W. and S. Super. 1973. Some ecological consequences of cloud seeding with silver iodide in the Bridger Range, Montana. Proc. of the Amer. Soc. of Civil Engineers, Sept. 1972. Spokane, Washington.
- Klarich, D. A. and T. W. Weaver. 1973. Effects of volatile substances *Artemisia tridentata* on seed germination. Mont. Academy of Science Proc. 33. (In press).

Name: F. Ward Whicker

Born: 1937

Academic Training:

Degree	Year	Institution	Major
B.S.	1962	Colorado State Univ.	Chemistry
Ph.D.	1965	Colorado State Univ.	Radiation Biology
Post-Doctoral	1965	Univ. Hannover, Germany	Forestry Techniques

Professional Experience:

Date	Position	Institution
1962	Research Associate	Hanford Atomic Products
1969	Visiting Assoc. Professor	University of Alaska
1966-Present	Associate Professor	Colorado State University

Professional and Honorary Societies:

Sigma Xi	Phi Kappa Phi
AAAS (Fellow)	Kappa Mu Epsilon
Health Physics	Xi Sigma Pi
Ecological Society of America	Beta Beta Beta
Wildlife Society	

Major Interests:

Pollution Ecology, Radionuclide Techniques, Radiation Ecology, Hunting, Fishing, Wilderness Hiking

Current Professional Activities:

Teaching: Radioecology

Research: Radioecological Studies, AEC Funded; IBP - Soil Movement

Publications, Technical Reports:

Hanson, W. C., F. W. Whicker, and A. H. Dahl. 1963. Iodine-131 in the thyroids of North American deer caribou: comparison after nuclear tests. Science 140:801-802.

Hanson, W. C., A. H. Dahl, F. W. Whicker, W. M. Longhurst, V. Flyger, S. P. Davey, and K. R. Greer. 1963. Thyroidal radioiodine concentrations in North American deer following 1961-1963 nuclear weapons tests. Health Physics 9:1235-1239.

Whicker, F. W. 1964. Density studies of mule deer body fat. J. Mammal. 45: 252-259.

Whicker, F. W., E. E. Remmenga, and A. H. Dahl. 1965. Factors influencing the accumulation of I-131 in Colorado deer thyroids following 1961-1962 nuclear weapons tests. Health Physics 11:293-296.

- Whicker, F. W., G. C. Farris, A. H. Dahl, and E. E. Remmenga: 1965. Factors influencing the accumulation of fallout Cs-137 in Colorado mule deer. *Health Physics* 11:1407-1414.
- Whicker, F. W., G. C. Farris, and A. H. Dahl. 1967. Concentration patterns of Sr-90, Cs-137, and I-131 in a wild deer population and environment, p. 621 to 633. In B. Aberg and F. P. Hungate [ed.] *Radioecological concentration processes*. Pergamon Press, New York.
- Whicker, F. W., R. A. Walters, and A. H. Dahl. 1967. Fallout radionuclides in Colorado deer liver. *Nature* 214:511-513.
- Whicker, F. W., G. C. Farris, and A. H. Dahl. 1966. Radioiodine concentrations in Colorado deer and elk thyroids during 1964-65. *J. Wildl. Manage.* 30:781-785.
- Farris, G. C., F. W. Whicker, and A. H. Dahl. 1967. Effect of age on radioactive and stable strontium accumulation in mule deer bone, p. 93 to 102. In J. M. A. Lenihan, J. F. Loutit, and J. H. Martin [ed.] *Strontium metabolism*. Academic Press, London.
- Whicker, F. W., G. C. Farris, and A. H. Dahl. 1967. Wild deer as a source of radionuclide intake by humans and as indicators of fallout hazards, p. 1105 to 1110. In W. S. Snyder [ed.] *Radiation protection*. Pergamon Press, New York.
- Remmenga, E. E. and F. W. Whicker. 1967. Sampling variability in radionuclide concentrations in plants native to the Colorado front range. *Health Physics* 13:977-983.
- Whicker, F. W. and C. M. Loveless. 1968. Relationships of physiography and microclimate to fallout deposition. *Ecology* 49:363-366.
- Nelson, W. C. and F. W. Whicker. 1969. Cesium-137 concentrations in some Colorado game fish, 1965-66, p. 258 to 265. In D. J. Nelson and F. C. Evans [ed.] *Symposium on radioecology, CONF-670503*. U. S. Atomic Energy Comm., Div. Tech. Information Ext., Oak Ridge, Tennessee.
- Farris, G. C., F. W. Whicker, and A. H. Dahl. 1969. Strontium-90 levels in mule deer and forage plants, p. 602 to 608. In D. J. Nelson and F. C. Evans [ed.] *Symposium on radioecology, CONF-670503*. U. S. Atomic Energy Comm., Div. Tech. Information Ext., Oak Ridge, Tennessee.
- Hakonson, T. E. and F. W. Whicker. 1969. Uptake and elimination of Cesium-134 by mule deer, p. 616 to 622. In D. J. Nelson and F. C. Evans [ed.] *Symposium on radioecology, CONF-670503*. U. S. Atomic Energy Comm., Div. Tech. Information Ext., Oak Ridge, Tennessee.

Name: Warren C. Whitman

Born: 1911

Academic Training:

Degree	Year	Institution	Major
B.S.	1935	North Dakota State University	Botany
M.S.	1936	North Dakota State University	Botany (Range)
Ph.D.	1939	University of Wisconsin	Botany (Plant Physiology)

Professional Experience:

Date	Position	Institution
1938-1942	Assistant Botanist	North Dakota Agr. Exp. Station
1946-1947	Associate Ecologist	U. S. Forest Serv., Miles City
1947-1951	Associate Botanist	North Dakota State University
1951-	Professor of Botany	North Dakota State University

Professional and Honorary Societies:

Ecological Society of America	Soil Conservation Society of America
American Society of Range Management	Sigma Xi
AAAS	Phi Kappa Phi
AIBS	

Major Interests:

Range and grassland ecology
Microclimatic influences in the grassland

Current Professional Activities:

North Dakota Agricultural Experiment Station

Teaching: Range Management

Research: Exp. Station projects at Dickinson Station
IBP - Seasonal herbage dynamics of mixed grass prairie in western
North Dakota

Publications, Technical Reports:

- Whitman, W. C. 1941. Seasonal changes in bound water content of some prairie grasses. Bot. Gaz. 103:38-63.
- Whitman, W. C., H. C. Hanson, and R. Peterson. 1943. Relation of drought and grazing to North Dakota range lands. North Dakota Agr. Exp. Sta. Bull. 320. 29 p.
- Whitman, W. C. 1951. Carotene, protein and phosphorus in grasses of western North Dakota. North Dakota Agr. Exp. Sta. Bull. 370. 55 p.
- Whitman, W. C. and E. S. Siggeirsson. 1954. Comparison of line interception and point contact methods in the analysis of mixed grass range vegetation. Ecology 35:431-436.

- Whitman, W. C. 1963. Crested wheatgrass and crested wheatgrass-alfalfa pastures for early season grazing. North Dakota Agr. Exp. Sta. Bull. 442. 24 p.
- Whitman, W. C. and G. Wolters. 1967. Microclimatic gradients in mixed grass prairie. In Groundlevel climatology. AAAS Pub. 86. Washinton, D. C. p. 165-185.
- Whitman, W. C. and H. C. Hanson. 1969. Grassland resources. In G. H. Smith [ed.] Conservation of natural resources. John Wiley & Sons, New York. (Revised for 4th Edition, 1970.)
- Whitman, W. C. 1969. Microclimate and its importance in grassland ecosystems, p. 40 to 64. In R. L. Dix and R. G. Beidleman [eds.] The grassland ecosystem: a preliminary synthesis. Range Sci. Dep. Sci. Series No. 2, Colorado State Univ., Fort Collins, Colorado. 437 p.
- Bjugstad, A. J. and W. C. Whitman. 1970. Significance of reduced plant vigor in relation to range condition. J. Range Manage. 23:181-184.
- Whitman, W. C. and H. C. Hanson. 1971. Grassland resources, p. 145-168. In Guy-Harold Smith [ed.] Conservation of Natural Resources (3rd ed.). John Wiley and Sons.

Name: Richard G. Wiegert

Born: 1932

Academic Training:

Degree	Year	Institution
B.S.	1954	Adrian College
M.S.	1958	Michigan State University
Ph.D.	1962	University of Michigan

Special Training:

Oak Ridge Institute of Nuclear Studies, Radiation Ecology Summer Course
Ohio State Institute of Acarology

Professional Experience:

Date	Position	Institution
1956-1958	Teaching Assistant	Michigan State University
1958-1959	Research Assistant	University of Michigan
1959-1960	Teaching Fellow	University of Michigan
1961-1962	Instructor	University of Michigan
1962-1966	Assistant Professor	University of Georgia
1965-1966	Visiting Professor	Michigan State University
1966-1971	Associate Professor	University of Georgia
1971-	Professor	University of Georgia

Professional and Honorary Societies:

American Society of Mammalogists	AIBS
Ecological Society of America	Phi Kappa Phi
American Society of Naturalists	Sigma Xi
British Ecological Society	AAAS
American Society of Limnology and Oceanography	

Current Professional Activities:

Research: Systems analysis of energy and material fluxes in the producer and consumer populations of thermal spring communities.
Energy flow in terrestrial-consumer populations, particularly the microarthropods inhabiting the soil and litter.
Intra- and interspecies competition for resources and the effect on the regulation of density.
Radioecological investigations employing tracers to solve basic ecological problems, such as the delineation of food webs in nature.
Species diversity and problems in spatial distribution of soil and litter microarthropods.

Publications, Technical Reports:

Wiegert, R. G. 1959. Rufous hummingbird feeding on sap of English Walnut at Sapsucker holes. Auk 76:526-527.

- Wiegert, R. G. 1961. Respiratory energy loss and activity patterns in the meadow vole, *Microtus pennsylvanicus pennsylvanicus*. Ecology 42(2): 245-253.
- Wiegert, R. G. 1961. A simple apparatus for measuring density of insect population. Ann. Ent. Soc. Am. 54(6):926-927.
- Wiegert, R. G. 1961. Nest construction and oxygen consumption of *Condylura*. J. Mamm. 42(4):528-529.
- Wiegert, R. G. 1962. The selection of an optimum quadrat size for sampling the standing crop of grasses and forbs. Ecology 43(1):125-129.
- Wiegert, R. G. and D. F. Owen. 1962. Balanced polymorphism in the meadow spittlebug, *Philaenus spumarius*. Am. Nat. 100(891):353-359.
- Wiegert, R. G. 1964. The ingestion of xylem sap by meadow spittlebugs, *Philaenus spumarius* (L.). Am. Mid. Nat. 71(2):422-428.
- Wiegert, R. G. 1964. Population energetics of meadow spittlebugs (*Philaenus spumarius* L.) as affected by migration and habitat. Ecol. Mono. 34:217-241.
- Wiegert, R. G. and F. C. Evans. 1964. Primary production and the disappearance of dead vegetation on an old field in southeastern Michigan. Ecology 45(1):49-63.
- Wiegert, R. G. and R. G. Lindeborg. 1964. A "stem well" method of introducing radioisotopes into plants to study food chains. Ecology 45(2): 406-410.
- Wiegert, R. G. 1965. Energy dynamics of the grasshopper populations in old field and alfalfa field ecosystems. Oikos 16:1-16.
- Wiegert, R. G. 1965. Intraspecific variation in calories/g of meadow spittlebug (*Philaenus spumarius* L.). BioScience 15:543-545.
- Wiegert, R. G., F. B. Golley and R. W. Walter. 1965. Excretion of orally administered zinc-65 by wild small mammals. Health Physics 11:719-722.
- Wiegert, R. G. 1966. Distribution and trap response of a small wild population of cotton rats (*Sigmodon h. hispidus*). J. Mamm. 47:118-120.
- Wiegert, R. G. and D. C. Coleman. 1967. A simple, inexpensive temperature integrator. BioScience 17:481-482.
- Wiegert, R. G. and A. de la Cruz. 1967. 32-Phosphorous tracer studies of a horseweed-aphid-ant food chain. Am. Midland Nat. 77:501-509.
- Wiegert, R. G., E. P. Odum and J. H. Schnell. 1967. A radionuclide tracer study of forb-arthropod food chains in a one-year experimental field. Ecology 48:76-83.
- Wiegert, R. G. 1968. Radioecology. In McGraw-Hill Yearbook of Science and Technology, 1968. p. 328-332.

- Wiegert, R. G. 1968. Thermodynamic considerations in animal nutrition. *Am. Zoologist* 8:71-81.
- Wiegert, R. G. 1968. Agricultural ecology. Book Review. *Ecology* 49(6).
- Wiegert, R. G. and F. C. Evans. 1968. Investigations of secondary productivity in grasslands. Proc. of Warsaw IBP meeting on Methods of Measuring Secondary Productivity in Grasslands. p. 499-518.
- Wiegert, R. G. and E. P. Odum. 1968. Radionuclide measurement of food web diversity in nature. Proc. of Second National Symposium of Radioecology. p. 709-710.
- Wiegert, R. G., G. B. Rose and C. D. Monk. 1968. Accumulation and transfer of ⁴⁵-Calcium by the biota of a tagged cornfield. Proc. Second National Symposium of Radioecology. p. 672-677.
- Wiegert, R. G., M. L. Brock and T. D. Brock. 1969. Feeding by *Paracoenia* and *Ephydra* (Diptera: Ephydriidae) on the microorganisms of hot springs. *Ecology* 50(2):192-199.
- Wiegert, R. G. 1970. Ecological significance of low oxygen consumption and high fat accumulation by *Nasutitermes castalis* (Isoptera: Termitidae). *BioScience* 20:663-665.
- Wiegert, R. G. 1970. Energy transfer in ecological systems. A.I.B.S. BSCS Pamphlet Series. Rand McNally. p. 1-34.
- Wiegert, R. G. 1970. Energetics of the nest-building termite, *Nasutitermes costalis* (Holmgren), in a Puerto Rican rain forest. In H. T. Odum [ed.] A tropical rain forest. Div. of Tech. Info. USAEC TID24270(PRNC-138).
- Wiegert, R. G. 1970. Effects of ionizing radiation of leaf fall, decomposition and the litter microarthropods of a Puerto Rican montane rain forest. In H. T. Odum [ed.] A tropical rain forest. Div. of Tech. Info. USAEC TID24270(PRNC-138).
- Wiegert, R. G., D. C. Coleman and E. P. Odum. 1970. Energetics of the litter soil subsystem. In J. Phillipson [ed.] Proceedings of the symposium: Methods for the study of soil ecology. IBP UNESCO, p. 93-98.
- Wiegert, R. G. and P. Murphy. 1970. Effect of season, species and location on the disappearance rate of leaf litter in a Puerto Rican rain forest. In H. T. Odum [ed.] A tropical rain forest. Div. of Tech. Info. USAEC TID24270(PRNC-138).
- Wiegert, R. G. 1970. Grassland programs (Ecosystems). In Proceedings of the Second Meeting of the PT Grassland Working Group International Biological Program. Saskatchewan, Canada, Sept. 1969., p. 200-203.
- Wiegert, R. G. 1971. Radioecology. Encyclopedia of Science and Technology, Third Revised Edition. Vol. 2:310-314. McGraw-Hill.
- Wiegert, R. G. 1971. Letter to the editor. *Bull. British Ecol. Soc.* 2:4.

- Wiegert, R. G. and D. F. Owen. 1971. Trophic structure, available resources and population density in terrestrial vs. aquatic ecosystems. *J. of Theor. Bio.* 30:69:81.
- Wiegert, R. G. and J. E. Williams. 1971. Effects of naphthalene application on a coastal plain broomsedge (*Andropogon*) community. *Pedobiologia* 11:58-65.
- Wiegert, R. G. 1972. Animal populations in relation to their food resources. Book Review. *The Jour. of Wildlife Management* 36(2):676-677.
- Wiegert, R. G. 1972. Population dynamics of cotton rats (*Sigmodon hispidus*) and meadow voles (*Microtus pennsylvanicus*) in field enclosures in South Carolina. *Bull. of the Georgia Acad. of Sci.* 30:103-110.
- Wiegert, R. G. and P. C. Fraleigh. 1972. Ecology of Yellowstone thermal effluent systems: net primary production and species diversity of a successional blue-green algal mat. *Limnology and Oceanography* 17(2): 215-228.
- Wiegert, R. G. and C. D. Monk. 1972. Litter production and energy accumulation in three plantations of longleaf pine (*Pinus palustris mill*). *Ecology* 53(5):949-953.

Name: Franz E. Wielgolaski

Born: 1931

Academic Training:

Degree	Year	Institution	Major
	1957	Horticultural School	
		Norwegian Agricultural College	
M.S.	1964	University of Oslo	Ecology
Ph.D.	1966	University of Oslo	

Special Training:

Gardening training, 3 years.

Professional Experience:

Date	Position	Institution
	Assistant	Norwegian Meteorological Institute
	Editor (4 years)	Norwegian Horticultural Dictionary
	Instructor (1½ yrs.)	State Horticultural School
	Research Assistant	Botanical Laboratory,
	(2½ yrs.)	University of Oslo
	Research Fellow	Botanical Laboratory
	(1 year)	
	Assistant Professor	Botanical Museum
	(1 year)	University of Bergen
	Associate Professor	Botanical Museum
	(1 year)	University of Bergen
1967	Assistant Professor	University of Oslo
1969	Associate Professor	University of Oslo
1965-1968	Leader of Biological	Norway
	Research	

Professional and Honorary Societies:

Norwegian Gardening Association - Secretary
 Norwegian National IBP Committee- Scientific Secretary
 IBP International Tundra Steering Committee
 International Commission on Ecology
 Norwegian Ecological Association

Major Interests:

Current Professional Activities:

Publications, Technical Reports:

Wielgolaski, F. E. 1965. Temperaturvergleich zwischen der "Linkehütte" und einer selbstkonstruierten Hütte in 25 cm Höhe über dem Boden mit Hilfe von Thermograph und Termoelement. Wetter und Leben 17 (10 sider).

Wielgolaski, F. E. 1965. Knopphvile og tidlig driving, spesielt av liljekonvall. Blyttia 23 (8 sider).

- Wielgolaski, F. E. 1965. Planternes morfologiske og fysiologiske tilpasninger til tørke. *Blyttia* 23 (10 sider).
- Wielgolaski, F. E. 1966. The influence of air temperature on plant growth and development during the period of maximal stem elongation. *Oikos* 17, 2 (21 sider).
- Wielgolaski, F. E. 1966. Pedicel length and floret number in *Chrysanthemum x hortorum* as influenced by temperature, day length, and light intensity. *Nytt. Mag. Bot.* 13 (12 sider).
- Wielgolaski, F. E. 1966. Blomstring hos *Krysantemum* under varierende temperatur- og lysforhold. *Blyttia* 24 (16 sider).
- Wielgolaski, F. E. 1966. Vekst av krysantemum under varierende temperatur- og lysforhold. *G. Y.* 15/16 (6 sider).
- Wielgolaski, F. E. 1967. Studies on growth and development under controlled conditions. *Oikos* 18, 1, (13 sider).
- Wielgolaski, F. E. 1967. Enkle forsøk med gibberellinsyre. Virkning på streknings-vekst og tørrstoffinnhold. *Blyttia* 25 (6 sider).
- Wielgolaski, F. E. 1967. Respiration of some herbaceous plants at different temperatures and the relation to growth. *Oikos* 18, 2, (8 sider).
- Wielgolaski, F. E. 1967. Plantevekst- og utvikling i relasjon til økologiske faktorer.
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 - b. Fenologiske undersøkelser i Sogn. Foreløpig rapport (21 sider + ref.).
 - c. Potteforsøk med *Calendula officinalis* 'Dania'. Virkning av jordart og klima på vekst og utvikling. Foreløpig rapport (7 sider).
 - d. Overvintring, vekst og utvikling av noen staudeslag i forhold til klimatiske faktorer. Foreløpig rapport (11 sider).
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- a. Arsrapport 1970. Beiteprosjektet, Hardangervidda. Netto primaerproduksjon (13 sider) 1971. (S. Kjelvik er ansvarlig for delen om treproduksjon, dvs. 2 sider).
 - b. Arsrapport 1971. Beiteprosjektet, Hardangervidda. Netto primaerproduksjon (16 sider) 1972.
 - c. Arsrapport 1972. Primaerproduksjon (28 sider) 1973.
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- a. Site descriptions and discussions on soil analyses and the interrelationships between soil and climate (i rāmanus ca 100 sider pluss ca 45 sider tab. og fig.).
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- Wielgolaski, F. E. Sheep grazing in a mountain area in Southern Norway (Hardangervidda).
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 - II. The effects of herbage intake by sheep on primary production. Ratios top-root and dead-live aboveground parts. (I manus 15 sider).
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I. Classification (I manus ca 20 sider)

II. Ordination (I forberedelse)

Wielgolaski, F. E. Generalizability of desert simulation model by use of tundra data. (I manus ca 35 sider).

Wielgolaski, F. E. Primary production of tundra. Invitert hovedforedrag til symposiet "Functioning of photosynthetic systems in different environments", Wales, April 1973. (I forberedelse, ca 30 sider).

Wielgolaski, F. E. The phenology of alpine plants at Hardangervidda, Norway. Foredrag til internasjonalt symposium i Dublin, April 1973. (I forberedelse ca 10 sider.).

Name: John A. Wiens

Born: 1939

Academic Training:

Degree	Year	Institution	Major
B.S.	1961	University of Oklahoma	Zoology
M.S.	1963	University of Wisconsin	Zoology
Ph.D.	1966	University of Wisconsin	Zoology

Special Training: 1960, 1961, 1963 NSF Summer Research Fellowships

Professional Experience:

Date	Position	Institution
1959-1961	Research Assistant	University of Oklahoma
1961-1966	Teaching Assistant and Museum Curator	University of Wisconsin
1966-1969	Assistant Professor	Oregon State University
1969-	Associate Professor	Oregon State University
1972 (Summer)	Visiting Associate Prof.	University of Oklahoma

Professional and Honorary Societies:

AAAS	Ecological Society of America
American Society of Naturalists	Phi Sigma
American Ornithologists' Union	Sigma Xi
American Society of Zoologists	Wilson Ornithological Society
Cooper Ornithological Society	

Major Interests: Behavioral Ecology: specifically, the effects of habitat structure on the behavior and ecology of grassland and shrubsteppe birds; the ontogeny of habitat responses in vertebrates; the dynamics of seabird populations and trophic relationships

Current Professional Activities:

Chairman, Oregon State University Faculty of Ecology
Oregon State University Representative, The Institute of Ecology (TIE)
Member, Advisory Committee on Scientific Resources, TIE
Member, Platform Committee, TIE

Teaching: Ecology, General Biology, Ecological Methods, Population Biology, Avian Biology

Research: The ecology and behavior of grassland birds with reference to coexistence and community organization
Avian populations and trophic relationships in North American grasslands
Avian community structure in western shrubsteppe
Development of habitat selection in frogs
Ecology of species relationships in Pacific Northwest Gulls

Publications, Technical Reports:

- Wiens, J. A. 1963. Aspects of cowbird parasitism in southern Oklahoma. *Wilson Bull.* 75:130-139.
- Wiens, J. A. 1965. Nest parasitism of the dickcissel by the yellow-billed cuckoo in Marshall County, Oklahoma. *Southwest Natur.* 10:142.
- Wiens, J. A. 1965. Behavioral interactions of red-winged blackbirds and common grackles on a common breeding ground. *Auk* 82:356-374.
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- Wiens, J. A. 1966. On group selection and Wynne-Edwards' hypothesis. *Amer. Sci.* 54:273-287.
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- Wiens, J. A. 1967. An instrument for measuring light intensities in dense vegetation. *Ecology* 48:1006-1008.
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- Wiens, J. A. 1968. "African birds" (Review of Moreau, "The bird faunas of Africa and its islands"). *BioScience* 18:449.
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- Wiens, J. A. 1968. "Evolution" (Review of Dunbar, "Ecological development in polar regions: A study in evolution"). *Bioscience* 18:903-904.
- Wiens, J. A. 1969. An approach to the study of ecological relationships among grassland birds. *Ornithological Monogr.* No. 8. 93 p.

- Wiens, J. A. 1969. "Review feature" (Review of Lack, "Ecological adaptations for breeding in birds"). *BioScience* 19:1123.
- Wiens, J. A. 1970. Habitat heterogeneity and the structure of avian communities in grasslands (Abstract). *Bull. Ecol. Soc. Amer.*, 51(2):29.
- Wiens, J. A. 1970. Early experience and substrate pattern selection in *Rana aurora* and *R. cascadae* tadpoles. (Abstract). *Amer. Zool.*, 10:290.
- Wiens, J. A. 1970. Effects of early experience on substrate pattern selection in *Rana aurora* tadpoles. *Copeia* 1970:543-548.
- *Wiens, J. A. 1970. Habitat heterogeneity and avian consumer populations in grasslands. In R. T. Coupland and G. M. Van Dyne [eds.] *Grassland Ecosystems: Reviews of Research* (Proc. September 1969 Meeting PT Grasslands Working Group, International Biological Program, Saskatoon and Matador. Saskatchewan, Canada). Range Sci. Dep. Sci. Ser. No. 7, Colorado State Univ., Fort Collins. p. 77-83.
- Wiens, J. A. 1970. Avian populations and patterns of habitat occupancy at the Pawnee site, 1968-1969. U.S. IBP Grassland Biome Tech. Rep. No. 63. Colorado State Univ., Fort Collins. 47 p.
- Wiens, J. A., S. G. Martin, W. R. Holthaus and F. A. Iwen. 1970. Metronome timing in behavioral ecology studies. *Ecology* 51:350-352.
- Moldenhauer, R. R. and J. A. Wiens. 1970. The water economy of the Sage Sparrow, *Amphispiza belli nevadensis*. *Condor* 72:265-275.
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- *Wiens, J. A. 1971. Pattern and process in grassland bird communities. In N. R. French [ed.] *Preliminary analysis of structure and function in grasslands*. Range Sci. Dep. Sci. Ser. No. 10, Colorado State Univ., Fort Collins, p. 147-211.
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- *Wiens, J. A. 1971. Pattern and process in grassland bird communities (Abstract). *Bull. Ecol. Soc. Amer.*, 52. (Invited Symposium Paper).
- Wiens, J. A. 1971. Patterns of inter-territorial habitat variation in grassland birds. (Abstract). *Bull. Ecol. Soc. Amer.*, 52.
- Wiens, J. A. 1971. Avian ecology and distribution in the Comprehensive Network, 1970. U.S. IBP Grassland Biome Tech. Rep. 77. Colorado State Univ., Fort Collins. 49 p.
- Wiens, J. A. 1972. Predictability of patterns and variability of precipitation in grasslands. U.S. IBP Grassland Biome Tech. Rep. No. 168. Colorado State Univ., Fort Collins. 23 p.

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- Wiens, J. A. 1972. Anuran habitat selection: Early experience and substrate selection in *Rana cascadae* tadpoles. Anim. Behav. 20:218-220.
- *Wiens, J. A. 1972. An avian population energetics model. Southwestern Rocky Mtn. Div. AAAS.
- Wiens, J. A., J. T. Rotenberry and J. F. Ward. 1972. Avian populations at IBP Grassland Biome sites, 1971. U.S. IBP Grassland Biome Tech. Rep. No. 205. Colorado State Univ., Fort Collins. 126 p.
- *Wiens, J. A. 1973. Habitat heterogeneity and the structure of avian communities in North American grasslands. Submitted to Amer. Midl. Nat.
- Wiens, J. A. 1973. Five articles on Ethology in the World Book.
- Wiens, J. A. and G. S. Innis. 1973. Estimation of energy flow in bird communities. I. A population bioenergetics model. Submitted to Ecology.
- Wiens, J. A. 1973. Patterns of inter-territorial habitat variation in Grasshopper and Savannah Sparrows. Submitted to Ecology.
- *Wiens, J. A. 1973. Pattern and process in grassland bird communities. Submitted to Ecol. Monogr.
- Wiens, J. A. and G. S. Innis. 1973. Estimation of energy flow in bird communities. II. A simulation model of activity budgets and population bioenergetics. Proc. 1973 Summer Computer Simulation Conf., Montreal.
- Wiens, J. A., J. F. Ward and J. T. Rotenberry. 1973. Dietary composition and relationships among breeding bird populations at IBP Grassland Biome Sites, 1971. In preparation.

Name: George J. Williams, III

Born: 1938

Academic Training:

Degree	Year	Institution	Major
B.S.	1961	Texas A & I University	Biology
M.A.	1966	George Peabody College	Biology
Ph.D.	1969	University of Texas at Austin	Botany

Professional Experience:

Date	Position	Institution
1961-1966	Public School Teacher	Refugio, Texas
1966-1969	Research Associate	University of Texas
1969-1972	Assistant Professor	University of Denver
1972-	Assistant Professor	Washington State University

Professional and Honorary Societies:

American Association for the Advancement of Sciences
American Society of Plant Physiologists
Botanical Society of America
Ecological Society of America
Sigma Xi

Major Interests:

Plant Ecology

Publications, Technical Reports:

- Williams, G. J., III and C. McMillan. 1967. Respiration and respiratory enzyme activity in latitudinal ecotypes of *Liquidambar styraciflua* L. Ecol. Soc. Bull. (Abstr.)
- Williams, G. J., III and C. McMillan. 1969. Phenology, physiology and biochemistry of six *Liquidambar styraciflua* L. provenances under controlled conditions. Eleventh Int. Bot. Congr. (Abstr.)
- Williams, G. J., III. 1971. Population differentiation in the hill reaction of U.S., Mexico and Central America *Liquidambar styraciflua* L. Photosynthetica 5:139-145.
- Williams, G. J., III. 1971. Levels of soluble sugars and ATP in ecotypes of *Liquidambar styraciflua* L. Photosynthetica 5:399-405.
- Williams, G. J., III. 1971. Producer function on the intensive and comprehensive sites. In N. R. French [ed.] Preliminary analysis of structure and function in grasslands. Range Sci. Dep. Sci. Ser. No. 10:125-131. Colorado State Univ., Fort Collins.

- Williams, G. J., III and C. McMillan. 1971. Phenology of six United States provenances of *Liquidambar styraciflua* under controlled conditions. Amer. J. Bot. 58:24-31.
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- Williams, G. J., III. and B. Horwitz. 1972. Ecological implications of bioelectric response action spectra of high and low elevation populations of *Verbascum thapsus*. Photosynthetica 6:394-400.
- Williams, G. J., III. and J. L. Markley. 1972. A technique for rapid identification of initial photosynthetic products. U.S. IBP Grassland Biome Tech. Rep. Colorado State Univ., Fort Collins. (In preparation).
- Williams, G. J., III. and J. L. Markley. 1972. The photosynthetic pathway type of North American shortgrass prairie species and some ecological implications. U.S. IBP Grassland Biome Tech. Rep. Colorado State Univ., Fort Collins. (In preparation).
- Demos, E. K., P. Peterson and G. J. Williams, III. 1973. Frost tolerance among populations of *Acer negundo* L. Amer. Mid. Natur. 89:223-228.
- Demos, E. K. and G. J. Williams, III. 1973. Further evidence of photoperiod ecotypes in *Acer negundo* L. (Aceraceae). Southwestern Natur. (In press).

Name: Robert G. Woodmansee

Born: 1941

Academic Training:

Degree	Year	Institution	Major
B.S.	1967	University of New Mexico	Biology
M.S.	1969	University of New Mexico	Botany and Plant Ecology
Ph.D.	1972	Colorado State University	Systems Ecology and Soils

Professional Experience:

Date	Position	Institution
1966-1969	Assistant Curator of the Herbarium	University of New Mexico
1969-1972	Grad. Research Assistant	Colorado State University
1972-	Postdoctoral Fellow	Colorado State University
	Liaison Staff Member	Natural Resource Ecology Lab

Professional and Honorary Societies:

Phi Kappa Phi	AAAS
Sigma Xi	AIBS
Phi Sigma	Soil Science Society of America
Ecological Society of America	Society for Range Management
American Society of Agronomy	

Current Professional Activities:

Research: Adapting a total grassland system ecological simulation model (ELM) to the annual grassland type.
Developing and testing nutrient cycling models in forest and grassland systems.

Publications, Technical Reports:

- Woodmansee, R. G. 1969. Natural reproduction of *Eurotia lanata*, *Atriplex canescens*, *Cercocarpus montanus*, and *Cowania mexicana* in New Mexico. M.S. Thesis. Univ. New Mexico, Albuquerque. 77 p.
- Woodmansee, R. G. and L. D. Potter. 1969. Factors influencing the natural reproduction of *Eurotia lanata*, *Atriplex canescens*, *Cercocarpus montanus*, and *Cowania mexicana*. J. Colorado-Wyoming Acad. Sci. 6:12-13. (Presented to the Forty-Fifth Annual Meeting of the Southwestern and Rocky Mountain Division AAAS).
- Woodmansee, R. G. and L. D. Potter. 1970. Vegetative reproduction of fourwing saltbush in New Mexico. J. Range Manage. 23:371.
- Martin, W. C., C. R. Hutchins and R. G. Woodmansee. 1970. Flora of the Sandia Mountains, New Mexico. Second Edition, Biology Dep. Univ. New Mexico, Albuquerque. 319 p.

- Woodmansee, R. G. and L. D. Potter. 1971. Natural reproduction of winter-fat (*Eurotia lanata*) in New Mexico. J. Range Manage. 24:24-30.
- Woodmansee, R. G. 1972. Soil descriptions and simulation model of potassium cycling in Colorado forests. Ph.D. Thesis. Colorado State Univ., Fort Collins. 152 p.
- Woodmansee, R. G. 1972. Variability in Colorado mountain soils. J. Colorado-Wyoming Acad. Sci. 8:24. (Presented to the Forty-Eight Annual Meeting of the Southwestern and Rocky Mountain Division AAAS).
- Woodmansee, R. G. and G. S. Innis. 1972. Lodgepole pine model. Second Annual North American Forest Biology Workshop. Corvallis, Oregon.
- Woodmansee, R. G. and G. S. Innis. 1973. A simulation model of forest growth and nutrient cycling. To be presented at the 1973 Summer Computer Simulation Conference. July 17-19, Montreal, Canada.
- Woodmansee, R. G. 1973. Influence of small animals on the establishment of *Pinus flexilis*. (In preparation).
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- Woodmansee, R. G. and G. S. Innis. 1973. Effects of fire and clearcutting on potassium cycling and forest growth -- a simulation hypothesis. (In preparation).
- Woodmansee, R. G. and W. H. Moir. 1973. Forest soils of the Colorado front range. (In preparation).
- Duncan, Don A. and R. G. Woodmansee. 1974. Vegetation responses to climatic variables on California annual-plan rangeland. Proc. XII International Grassland Congress. (In preparation).