

Marion F. Baumgardner – Career Synopsis

Dr. Baumgardner is Professor Emeritus of Agronomy and Director Emeritus of the Laboratory for Applications of Remote Sensing (LARS) at Purdue University. He received his Bachelor of Science Degree from Texas Technology College (1950), Master of Science Degree in Soil Fertility and Plant Nutrition from Purdue University (1955), A year of Special Study in History, Philosophy, and Theology at Yale University (1957), Doctor of Philosophy Degree in Soil Chemistry and Mineralogy at Purdue (1964) and an Honorary Doctor of Science Degree from DePauw University (1980).

Dr. Baumgardner began his career as a Lecturer in Soils and Crop Production at Allahabad Agricultural Institute at Allahabad, India (1950-53). He served as Director of the Southwest Soils Lab, Lubbock, Texas (1959); Instructor for making fertilizer recommendations in the State Soil Testing Lab, Purdue University, (1959-60); Instructor of Agronomy for teaching and research, Purdue University, (1961-64); Program Specialist in Agriculture, Ford Foundation in Argentina on special contract (August, 1964-August, 1966); Assistant Professor of Agronomy, teaching and research, Department of Agronomy, Purdue University (1964-67); Associate Professor of Agronomy, teaching and research, Department of Agronomy, Purdue University (1967-73); Professor of Agronomy, Purdue University (1973-93) Program Leader, Earth Sciences Research Programs, Laboratory of Applications of Remote Sensing (LARS), 1977-80); Associate Director, LARS (1977-80), Acting Director, LARS (1981-82); and Director, LARS, (1980-1985).

He has served on many National and International committees and activities including:

- Chair, Planning Committee, International Symposia on (a) Machine Processing of Remotely Sensed Data, (b) Soil Information Systems, and (c) Remote Sensing and Soil Survey, Purdue University, 3-6 June 1980. Cosponsored by International Society of Soil Science and Purdue University.
- Chair, International Working Group on Remote Sensing and Soil Survey, Commission V, International Society of Soil Science, 1978-82, Member 1974 to present.
- Chair, National Study Panel on Remote Sensing, Agricultural Research Institute, 1977-82.
- Member, United Methodist Committee on Relief, Board of Global Ministries, United Methodist Church, 1976-84.
- International Editorial Board, International Journal of Remote Sensing, Taylor & Francis, London, 1980-93.
- Member, Editorial Board, Book Series on Remote Sensing of Earth Resources, Martinus Nijhoff Publishers, The Hague.
- Member, Program Committee, Annual Meeting of Soil Conservation Society of America, New Orleans, LA, August 1982.
- Chair, Program Committee, Annual Meeting of Soil Conservation Society of America, Hartford, Connecticut, August 1983.
- Chair, Soils Panel, American Association for the Advancement of Science, Study funded by USAID to assess resource inventory methods for developing countries, 1981-82.
- Editor, Proceeding of International Workshop on the Structure of a Digital International Soil Resources Map Annex Database, Wageningen, the Netherlands, 1986.
- Chair, Working Group on World Soils & Terrain Digital Database, Commission V, International Society of Soil Science, 1986-94.
- Secretary-Treasurer, World Association of Soil and Water Conservation, 1984-90.

- Member, (representing International Society of Soil Science), CODATA (Committee on Data for Science and Technology), ICSU (International Council of Scientific Unions), Paris, 1986-94.
- Convener and Organizer of a Special Symposium on "A 1:1 M World Soils and Terrain Digital Database," International Soils Congress, Kyoto, Japan, August 1990.
- Member, U.S. Committee for IGBP (International Geosphere Biosphere Program) Study on Database Interfaces, 1989-93.
- Chair, Science Advisory Committee on Terrestrial Ecosystem Monitoring and Assessment (SACTEMA)
- Participant and Chair of Sub-Working Group, 1992 Data Forum: Review and Critique of the U.S. Interagency Plan for Global Change Data and Information Management, Washington, D.C., January 1992.
- Professional Consultant during period 1966 to 1993 to a variety of agencies and organizations including: The Ford Foundation, U.S. State Department, U.S. Agency for International Development, Food and Agricultural Organization of the United Nations, United Nations Environment Programme, United Nations Development Programme, Canada International Development Agency, Lilly Endowment, Interamerican Development Bank National Academy of Sciences and Africare in various countries of Asia, Africa, Latin America, Middle East and Europe.

Collaborative International Research

Co-Principal Investigator (with Dr. George Varallyay, Budapest, Hungary) of joint research project under U.S.-Hungarian Cooperative Research Programme Title: "Use of Reflectance Measurements to Identify, Monitor and Model Salinization and Alkalinization Processes. Duration May 1988-October 1991

Other National and International Professional Activities

Member, Panel on Agriculture, Forestry and Rangelands, Space Applications Board, National Research Council, 1974-76.

Member, Committee on Remote Sensing for International Development, National Academy of Sciences, 1975-76.

Member, Committee on Desertification, American Association for the Advancement of Science, 1976-78.

Member, Imaging Spectrometer Science Advisory Group, National Aeronautics and Space Administration, 1985-86.

Invited Participant, International Symposium on "Remote Sensing Is A Tool for Soil Scientists," sponsored by International Society of Soil Science, Budapest, Hungary, April, 1988.

Invited Participant, Workshop on Global Database Planning Project, sponsored by Research Committee of International Geographical Union, Tylney Hall, England, May 1988.

Invited Participant, 1988 forum on Data Management for Global Chang, sponsored by the Interagency Working Group on Data Management for Global Change, Baltimore, Maryland. November 1988.

AWARD, HONORS, CITATIONS, SPECIAL APPOINTMENTS.

International Travel Grant (European Lecture Tour), Purdue Research Foundation, 1969.

Danforth Associate, elected 1971.

Klinck Memorial Lecturer, Agricultural Institute of Canada, 1972.

Recognition Award, Agricultural Institute of Canada, 1972

Fellow, American Society of Agronomy, elected 1973.

Fellow, Indiana Academy of Sciences, elected 1974.

International Exchange Fellow (Poland and Czechoslovakia), National Academy of Sciences (USA), 1975.

Invitational Lecture, Congressional Science Seminar, Sponsored by American Association for the Advancement of Science and the Brookings Institution, Washington, D.C., 1975.

Fellow, Soil Science Society of America, elected 1978.

International Travel Grant (Invited participant in International Symposium, Bombay, India), National Science Foundation, 1979.

Research Fellow, Resource Systems Institute, East-West Center, Honolulu, Hawaii, 1979.

International Travel Grant (Invited participant in International Congress of Soil Science, New Delhi, India), Purdue Research Foundation, 1982.

Fellow, Soil & Water Conservation Society, 1983.

President's Citation, Soil & Water Conservation Society, 1983

Distinguished Agriculture Alumnus Award, Texas Tech University, 1983.

Visiting Scholar, National Council of Scientific Research, Madrid, Spain, 1985

International Exchange Fellow, (Hungarian Academy of Sciences, Budapest), National Academy of Sciences (USA), 1986.

International Travel Grant for International Congress of Soil Science, Kyoto, Japan, August 1990, Purdue Research Foundation.

Annual Counseling Award, Purdue School of Agriculture, 1992.

Fellow, American Society of Photogrammetry and Remote Sensing, 1992.

PUBLICATIONS

Author and/or Co-Author of approximately 120 technical journal papers and research reports published since 1965. Only selected manuscripts since 1985 are listed:

1. Baumgardner, M.F., E.R. Stoner, L.F. Silva, and L.L. Biehl, 1985. Reflectance properties of soils. In Brady, n. (ed.). *Advances in Agronomy* 38: 1-44. Academic Press, Inc. Orlando, Florida.
2. Baumgardner, M.S. and L.R. Oldeman, eds. 1986. *Proceedings of an International Workshop on the structure of a Digital International Soil Resources Map Annex Database*. International Soil Reference and Information Centre. Wageningen, The Netherlands. 138 Pages.
3. Valenzuela, C.R. and M.F. Baumgardner. 1986. Information Extraction from a Soils and Terrain Digital Database. In Baumgardner, M.F., and L.R. Olderman (eds.) *Proceedings of an International Workshop on the Structure of a Digital International Workshop on the Structure of a Digital International Soil Resources Map Annex Database*.
4. Valenzuela, C.R., M.F. Baumgardner, and T.L. Phillips. 1986. Soils as an Important Component in a Digital Geographic Information System. *Proceedings of 7th Intl. Symposium on Remote Sensing for Resources Development and Environmental Management*. Enschede, The Netherlands.
5. Valdes, J.A., M.F. Baumgardner, and C.R. Valenzuela. 1986. Assessment of TM thermal infrared band contributions in land cover/land use multispectral classification. *Proceedings of 7th Intl. Symposium on Remote Sensing for Resources Development and Environmental Management*. Enschede, The Netherlands.
6. Baumgardner, M.F. 1988. TheSOTER Project: Phase 1. In Peters, W. (ed.) *Proceedings of the First Regional Workshop on a Global Soils Terrain Digital Database*, Montevideo, Uruguay. Intl. Society of Soil Science.
7. Baumgardner, M.R. 1988. A Global Scale Soils and Terrain Digital Database. In Mounsey, H. (ed.) *Building Databases for Global Science*. Taylor and Francis, London.
8. Baumgardner, M.F. and R. Van de WEG. 1989. Space and Time Dimensions of a World Soils and Terrain Digital Database. In Bauma, J. (ed.). *Proc. Intl Sym. On Land Qualities in Space and Time*. Wageningen, The Netherlands.
9. Henderson, T.L., A. Szilagyi, M.F. Baumgardner, C.t. Chen and D. A. Landgrebe. 1989. Spectral Band Selection for Classification of Soil Organic Matter Content. *Soil Sci. Soc. Am. J.* 53; 1778-1784.
10. Baumgardner, M.F. 1990. Spatial Databases and Modeling. In Arnold, R.W., I. Szaboles and V.O. Targulian (eds.). *Global Soil Change*, Intl. Inst. For Applied Systems Analysis, Luxenburg, Austria.
11. Baumgardner, M.F. 1990. A Global Soils and Terrain Database: A Tool to Quantify Global Change. In Bouwman, A.F. (ed.). *Soils and the Greenhous Effect*. John Wiley and Sons Ltd. W. Sussex, England.
12. Baumgardner, M.F. 1990. 1:1 million World Soils and Terrain Digital Database; Implementing a Concept. *Trans. 14th Intl. Congress of Soil Sci.* V: 114-119.
13. Zhuang, X. B.A. Engel, M.F. Baumgardner and P.H. Swain. 1991. Improving Classification of Crop Residues using Digital Land Ownership Data and Landsat TM Imagery. *Photogram. Eng. and Remote Sensing* 57: 1487-1492.
14. Henderson, T.L., M.F. Baumgardner, D.P. Franzmeier, D.E. Stott, and D.C. Coster. 1992. High Dimensional Reference Analysis of Soil Organic Matter. *Soil Sci. Soc. Amer. J.* 55: 865-872.
15. Baumgardner, M.F. 1993. The Role of Remote Sensing in Crop Modeling. *Proceedings of Intl. Workshop on Crop Modeling*. Chambery, France, 02-05 Mar 92., National Academy Press.