

DAVID M. SYLVIA

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PROFESSIONAL EXPERIENCE:

Professor and Head, Department of Crop and Soil Sciences, Pennsylvania State University, University Park, 2002 to present.
Professor, Soil and Water Science Department, University of Florida, 1993 to present
Administrative Intern, Academic Programs, College of Agricultural and Life Sciences, Univ. Florida, 1996-1997
Visiting Research Fellow, Biological Lab, University of Kent at Canterbury, UK, 1993
Associate Professor, Soil Science Department, University of Florida, 1989 to 1993
Assistant Professor, Soil Science Department, University of Florida, 1984 to 1989
Research Associate, Plant Pathology Department, University of Florida, 1981 to 1984

EDUCATION:

Ph.D., Plant Pathology, Cornell University, 1981; minor: Plant Physiology
M.S., Plant Pathology, University of Massachusetts, 1977
B.S., Forestry, University of Massachusetts, 1975

LEADERSHIP DEVELOPMENT ACTIVITIES:

The American Council on Education (ACE) workshop on Chairing the Academic Department. Washington, DC, June 15-18, 2005. The workshop goal is to support the development of the chair as an academic leader within the department and within the institution as a whole.

Committee on Institutional Cooperation (CIC) Department Executive Officer Seminar. Chicago, IL, Mar 31-Apr 2, 2005. Selected to represent Penn State at this seminar that focuses on topics involving departmental leadership skills, and emphasizes in-depth analysis of case studies, focusing on the challenges facing Department Executive Officers.

Council for Agricultural Science and Technology (CAST) Workshop on Cultivating Leadership for a Changing Agriculture. Harpers Ferry, West Virginia, Nov. 15-18, 2003

Penn State Academic Leadership Forum – 2004

- Representing the University to the Public
- Ethical Leadership
- Fund-Raising

Penn State Academic Leadership Forum – 2003

- Legal Issues in Higher Education
- Survival Skills for Administrators
- Homeland Security Issues
- The Age of Technology and New Issues

Penn State Leadership Academy: Strategic Leadership, Sept 25-26, 2002; Performance Improvement, Jan 22-23, 2003; 360 Evaluation, Oct 2003.

Penn State Academic Leadership Forum – 2002

- University Budgeting
- Recruitment Issues, Support, and Strategies

LEAD IFAS, a series of four 2-day workshops designed to foster leadership and managerial skills within the land grant college (2000-2001).

ESCOPE/ACOP Leadership Development Program, Class 6 (1996-1997)

- *Phase I* - Attended 7-day leadership training program in Indianapolis, IN
- *Phase II* - Internship in the College of Agricultural and Life Sciences
 - (i) surveyed faculty on use of computing technology in the classroom
 - (ii) chaired task force on Technology-Assisted Graduate Education
 - (iii) organized Teaching Technology Workshops
 - (iv) implemented web pages to support teaching technology
(<http://dmsylvia.ifas.ufl.edu/Workshop/index.htm>)
- *Phase III* - Participated in 3-day "Washington experience" to increase understanding of land-grant universities and the political process

Awarded Supervisory Challenge Certificate from University Personnel Services, University of Florida (1996).

RESEARCH INTEREST:

Microbial ecology of the rhizosphere with an emphasis on mycorrhizal fungi. I conduct basic studies on plant-fungus interactions and the functional diversity of symbiotic associations. The goal of my applied projects is the incorporation of mycorrhizal technology into sustainable agriculture practice.

COURSES TAUGHT:

- Soil Microbiology and Soil Microbial Ecology. The latter course makes extensive use of multimedia and web pages, and one section is offered for distance education students.
- Advanced Topics in Mycorrhiza and Soil Microbiology
- First Year Seminar with Environmental Emphasis (Be a Master Student)

ADVISEMENT:

Supervisor of Graduate Committees - Ph.D., 6; M.S., 5; M.Ag. 1

Additional Graduate Committees – 31

University Undergraduate Scholar –1

High School Summer Training Program - 5

Postdoctoral Associates – 4

Visiting Scientists – 13

HONORS:

Elected Fellow of the American Association for the Advancement of Science (2003)
Honorary member of Alpha Zeta (2002)
Elected Fellow of the American Society of Agronomy (2001)
Elected Fellow of the Soil Science Society of America (2000)
Graduate Teacher/Advisor of the Year, College of Agricultural and Life Sciences (1998/1999)
Course Webpage selected to receive a Links2Go Key Resource Award (1998)
Fulbright Distinguished Scholar Award (1997)
Outstanding Faculty Achievement and Performance Award (1990)
National Academy of Science Exchange Scholar to Czechoslovakia (1988)
Cited in Marquis Who'sWho in Science and Engineering and Sterling's Who'sWho Directory
Member of Xi Sigma Pi and Sigma Xi
Summa Cum Laude, University of Massachusetts

PROFESSIONAL MEMBERSHIPS:

American Association for the Advancement of Science
American Society of Agronomy
American Society of Microbiology
Crop Science Society of America
International Society of Root Research
Soil Ecology Society
Soil Science Society of America

PROFESSIONAL SERVICE:

Soil and Water Science Department

Distance Education Coordinator (2000 to present)

- Headed up new off-campus graduate track in Environmental Science

Supervisor of SWSD McCarty Office Staff (2001 to present)
Chair of Peer Mentoring Committee for Andy Ogram (1999-present)
Chair of Peer Evaluation Committee for SOS 6323, 1999
Member of Ad-hoc Committee to develop USPS Excellence Award, 1999
Chair of Peer Evaluation Committee for SOS 5050, 1998
Search and Screen Committee, Environ. Microbiol. Faculty Position, Chair (1990, 1995)
Computer Use Committee, (1991, 1993, 1995 to present), Chair - 1995 to present
Graduate Studies Committee (1988 to 1995), Chair - 1989 to 1995. Activities included

- revising policy on assigning state-funded assistantship
- developing comprehensive Graduate Student Guide
- implementing nonthesis MS degree option

Chair's Advisory Committee (1987-1992)
Graduate Award Committee (1989)
Greenhouse Liaison (1985-1986)
Proceedings of the Florida Soil and Crop Science Society, Associate Editor, 1985

David M. Sylvia

Visiting Scientist Committee (1984)

Editor of "Mycorrhizal Notes", statewide newsletter on mycorrhiza research (1984 to 1986)

Agronomy-Soils Club, Co-Advisor (1987-1988)

College/University

Penn State University

Advisory Committee for Environmental and Natural Resources Institute (ENRI) in the College of Agricultural Sciences (2004 to present).

Selection Committee for Black Research Award (2004)

Coordinating Council of the Penn State Institutes of the Environment (2003 – present)

Sustainable Agriculture Strategic Planning Coordinating Committee (2003-present)

Search Committee Co-Chair, Director of Cooperative Extension and Associate Vice President for Outreach (2003-2004)

Extension Plan-of-Work Needs Assessment Committee (2003)

Search Committee, Unit Leader for CAS Horticulture Department (2003-2004)

Ad Hoc Committee Considering CAS Environmental Institute (2003)

University of Florida

Webmaster for Plant Science Unit (2000 – present)

Confidential Committees to Investigate Personnel Grievance, College of Agricultural and Life Sciences, 1999, 2001

Doctor of Plant Medicine, Coordinating Committee (1999 to present)

Teaching Award Committee, College of Agricultural and Life Sciences (1999-2000)

University Faculty Senate (1985-1986, 1999-2000)

Graduate Curriculum Committee, College of Agricultural and Life Sciences, (1996 to present), Chairman 1998-1999

Administrative Intern, College of Agricultural and Life Sciences, Academic Programs Office (1996-1997)

IFAS Distance Education Committee, Web-based Extension and Instruction Subcommittee (1997-1998)

Task Force on Applications of Multimedia to Graduate Education, Chair (1996-1997)

University Plant and Agricultural Products Patent Committee (1994 to 1996)

Scientific Committee and Nutrient and Water Uptake Working Group for the Pine Productivity Research Partnership (1989 to 1995)

Selection Committee for IFAS Award of Excellence in Graduate Research (1988)

Affiliate Faculty in the College of Natural Resources and Environment

Regional/National

CSREES/Graduate Programs Review Panel for Department of Soil, Water and Climate, University of Minnesota, Feb 1-5, 2004.

Multistate Project NCA-1, 2004 to present

Soil Science Society of America, Chair, Div S-3, 2000-2001

Review Panel for USDA NRICGP, Soils and Soil Biology Program, 2000

Soil Science Society of America Journal, Associate Editor for Div. S-3, 1988 – 1990

David M. Sylvia

Multistate Project S-297, "Soil Microbial Taxonomic and Functional Diversity as Affected by Land Use Management." 2000 to present. Project Webmaster.

Regional Project S-262, "Diversity and Interactions of Beneficial Bacteria and Fungi in the Rhizosphere". 1995 to 2000

Regional Project S-226, "Enhancing Beneficial Microorganisms in the Rhizosphere." 1988 to 1995. Chair-elect, 1992; Chairman, 1993

International

Editorial Board for Biology and Fertility of Soils. 1993 to 2002

Editorial Board for Mycorrhiza. 2000 to present

Advisory Board, International Culture Collection of VAM Fungi, 1993 to 1999.

Consultant for Lincoln International Ltd. on the Türkiye Agricultural Research Project (TARP) in the area of Mycorrhizal Technology. 17 April to 1 May 1999.

Consultant to the Institute of Plant Nutrition and Resources, Beijing Academy of Agricultural and Forestry Sciences, Beijing China. 10-21 March 1998

Consultant on Mycorrhizal Culture Techniques. Laboratorio de Micrología, Universidad Autónoma de Tlaxcala, Mexico. 16 - 20 March 1997

Organizer and Chair of a symposium on "Advances in the Assessment of Plant Symbioses" at the International Union of Microbiological Societies. Prague, Czech Republic. July, 1994.

Consultant on Mycorrhizal Colonization in the Bikini Atoll. Lawrence Livermore National Laboratory. Sept. 1991

Consultant on Mycorrhizal Evaluation of Field Trials, Bean/Cowpea Cooperative Research Support Program funded by USDA, Quito, Ecuador. 29 May to 3 June 1991

Cooperating Scientist for USDA, OID project (IN-AES-746) in Trivandrum, India entitled "Improvement of production technology of sweet potato (*Ipomoea batatas*) through vesicular-arbuscular mycorrhizal fungi." 1990 to 1993

Training Course on Biofertilizers Technology sponsored by the United Nations Development Program, Cairo, Egypt. 17 Nov 90

Planning Committee for the 7th North American Conference on Mycorrhizae (1986-1987). In charge of Local Arrangements and Editor of Proceedings. The meeting had 310 participants from 31 countries.

Provided laboratory training to the following international scientists:

Dr. Heggo and El-Kherbawy, Cairo University, Cairo, Egypt. 11-20 Jan 88

Dr. S.N. Singh, BAIF Development Research Foundation, Pune, India. 6-10 Apr 90

Dr. Y.Z. Ishac, Ain Shams University, Cairo, Egypt. 23-28 Jan 90

Dr. Sawaeng Ruaysoongnern, Khon Kaen University, Thailand. 14-16 Sep 90

Dr. Miroslav Vosatka, Institute of Botany, Pruhonice, Czechoslovakia. 8-19 Oct 90

Dr. Silvio Viteri, EAP, Honduras. 9-15 Dec 90

Adolfredo Delgado, Maracibo, Venezuela, Nov-Dec, 91

Dr. Amadou Ba, IRBET, Ouagadougou, Burkina Faso, Mar-Apr 94

Dr. Sigurdur Greipsson, Soil Conservation Service, Hella, Iceland Apr 95

Dr. M.D. Mehrotra, Forest Resource Institute, Dehradun, India, Sep-Dec 95

Dr. Y.P. Singh, Forest Resource Institute, Dehradun, India, Sep-Dec 95

Dr. R.K. Tivari, Forest Resource Institute, Dehradun, India, Sep-Dec 95

Dr. N.S.K. Harsh, Tropical Forest Res. Institute, Jabalpur, India, Sep-Dec 95

Dr. S.N. Khan, Forest Resource Institute, Dehradun, India, Jan-Mar 96

David M. Sylvia

Dr. R.K. Verma, Tropical Forest Res. Institute, Jabalpur, India, Jan-Mar 97

Dr. I. Ortas, Çukurova University, Adana, Turkey. Nov 98 - Feb 99

Dr. V. Mohan, Inst. For. Genetics and Tree Breeding, Coimbatore, India. Mar-Jun 01

LECTURES OR SPEECHES AT PROFESSIONAL CONFERENCES/MEETINGS:

INTERNATIONAL

A. Invited Papers at Scientific Meetings – Total of 10

Fundamentals and applications of arbuscular mycorrhizae: A "biofertilizer" perspective.

FertBio98, Caxambu Brazil. 15 Oct. 98.

Case studies of arbuscular mycorrhiza fungal (AMF) inoculation in Florida. Colloque sur la Symbiose Mycorrhizienne 98. Université Laval, Quebec, Canada. 12 May 98.

Production of arbuscular mycorrhiza fungal inoculum. II Congresso Brasileiro de Micologia, Rio de Janeiro, Brazil. 19 April 98.

Case studies of arbuscular mycorrhiza fungal (AMF) inoculation in Florida. II Congresso Brasileiro de Micologia, Rio de Janeiro, Brazil. 19 April 98.

The impact of AM fungi in ecosystem restoration. European COST Action 8.21. Working Group Meeting. Reykjavik, Iceland. 17 Jul 97.

Case studies of mycorrhizae in Florida. Proceedings of 1 Symposium Nacional de la Simbiosis Micorrizica. Universidad Veracruzana, Xalapa, Ver, Mexico. 11 Oct. 96.

Assessment of the external phase of arbuscular-mycorrhiza. International Union of Microbiological Societies. Prague, Czech Republic, 7 Jul 94.

Applications for introduction of exogenous fungal species. Proceedings of the Ninth North American Conference on Mycorrhizae. Guelph, Ontario, Canada, 8 Aug 93.

The production and introduction of inoculum of arbuscular mycorrhizal fungi. The International Symposium on Management of Mycorrhizas in Agriculture, Horticulture and Forestry. Perth, Australia, 1 Oct. 92.

EcologPa de micorrizas arbusculares. Latin American Society of Microbiology, Quito, Ecuador. 1 Dec 90.

B. Invited Seminars – Total of 18

Microrganismos y su hábitat. Curso de Agricultura Integrada Organica. Universidad EARTH. Costa Rica. 11 March 02.

Uses of mycorrhizal inoculum, Department of Soil Science, Çukurova University, Adana, Turkey. 3 May 99.

Cases studies of mycorrhizal applications from Florida. Soil and Fertilizer Research Institute, Ankara, Turkey. 27 Apr 99.

Fundamentals and applications of arbuscular mycorrhizae. Institute of Plant Nutrition & Resources, Beijing Academy of Agricultural & Forestry Sciences, Beijing China. 11 Mar 98

The application of mycorrhizal technology to agriculture. Hebei Agricultural University, Hebei, China. 13 Mar 98 and the Chinese Agricultural University. Beijing, China. 17 Mar 98.

Soil microbial ecology, Special seminar for faculty, Universidad Autónoma de Tlaxcala, Mexico. 18 Mar 97.

Seminars presented during Faculty Development Leave from 1/93-7/93:

David M. Sylvia

RISO National Laboratory, Plant Biology Section, Roskilde, Denmark
Centre de Recherches Forestieres, Champenoux - Nancy, France
Institut für Botanik, Technische Universität München (Weihenstephan), Germany
Institut für Pflanzenkrankheiten, Universität Hannover, Hannover, Germany
Institut für Pflanzenernährung, Universität Hohenheim, Stuttgart, Germany
Dipartimento Biologia Vegetale, Dell'Università Di Torino, Torino, Italy
Swiss Federal Research Station, Wädenswil Zurich, Switzerland
Biology of mycorrhizae. Special seminar at the Universidad Central, Quito, Ecuador. 31 May 91.
Mechanisms of plant growth promotion by vesicular-arbuscular mycorrhiza. St. Catalina
Experiment Station, Quito, Ecuador. 29 Nov 90.
Research strategies for vesicular-arbuscular mycorrhizal fungi. Institute of Landscape Ecology,
České Budějovice, Czechoslovakia. 14 Apr 89.
Application of vesicular-arbuscular mycorrhizal fungi to Florida agriculture. Institute of
Microbiology, Prague, Czechoslovakia. 20 Apr 89.
Inoculum production and external hyphae of VAM fungi. Institute of Microbiology, Prague,
Czechoslovakia. 25 Apr 89.

C. Volunteered Papers at Scientific Meetings – Total of 10

Sylvia, D.M. and A.K. Al Agely. 2004. Mycorrhizae increase arsenic uptake by a
hyperaccumulating fern. Rhizosphere, 2004. Munich, Germany. Sept 13-17, 2004.
Zhang, M.Q., Y.S. Wang, L.J. Xing, and D.M. Sylvia. The ecology of AM fungi from the south
and east coast of China. Second International Conference on Mycorrhizae, Uppsala,
Sweden, 6-10 July 98.
Sylvia, D.M. and D.J. Farmer. 1996. Morphotype diversity and phosphatase activities of
ectomycorrhizae in a southern pine plantation. First International Conference on
Mycorrhizae, Berkeley, CA. 4-9 Aug 96.
Chellemi, D.O., F.M. Rhoads, J.R. Rich, S.M. Olson, and D.M. Sylvia. 1996. Development of a
low input, sustainable production system for fresh market vegetables. Annual International
Conference on Methyl Bromide Alternatives and Emissions Reductions. Orlando, FL, 4 Nov
96.
Farmer, D.J. and D.M. Sylvia. Identification of ectomycorrhizal fungi on southern pine using
molecular methods. Fourth European Symposium on Mycorrhiza. Granada, Spain 11 Jul
94.
Pedersen, C.T. and D.M. Sylvia. Role of ectomycorrhizas and arbuscular mycorrhiza in
interplant competition for phosphorus. Fourth European Symposium on Mycorrhiza.
Granada, Spain 11 Jul 94.
Rousseau J.V.D., D.M. Sylvia, and A.J. Fox. Contribution of ectomycorrhizae to the nutrient
absorbing surface area of pine. Proceedings of the Ninth North American Conference on
Mycorrhizae. Guelph, Ontario, Canada, 8 Aug 93.
Thingstrup, I., D.M. Sylvia, M. Rozycka, J.C. Dodd, P. Jeffries, and S. Rosendahl.
Immunological detection of the extraradical mycelium of arbuscular mycorrhizal fungi.
Beyond the Biomass, Wye College, University of London, Wye, UK. 22 May 93.
Sylvia, D.M. Role of *Laccaria laccata* in protecting primary roots of Douglas-fir from root rot.
IUFRO, Root Physiology and Symbiosis Working Party. Tree Roots and Their
Mycorrhizas. Edinburgh, UK., 15 Sep 82.

Sylvia, D. M. and W.A. Sinclair. The role of *Laccaria laccata* in protecting premycorrhizal Douglas-fir seedlings from root rot by *Fusarium oxysporum* and *Pythium irregular*. 5th North American Conference on Mycorrhizae. Quebec City, Canada. 16 Aug 81.

NATIONAL

A. Invited Papers at Scientific Meetings – Total of 15

- Sylvia, D.M. Teaching a distance-education section of soil microbiology. American Society of Agronomy Annual Meeting. Charlotte, NC. 25 Oct 01.
- Wollum, A.G., D.M. Sylvia, and W.J. Hickey. Web home pages for soil microbiology and biochemistry instruction. American Society of Agronomy Annual Meeting. Anaheim, CA. 28 Oct 97.
- Sylvia, D.M. and S.E. Williams. VA mycorrhizae and environmental stress, Symposium on VA mycorrhizae and Sustainable Agriculture. American Society of Agronomy Annual Meeting, Denver, CO. 27 Oct 91.
- Sylvia, D.M. Role of mycorrhizal fungi in the establishment of *Uniola paniculata* on replenishment Florida beaches, Symposium on Plant-environment relationships near the tideline. Botanical Society of America, San Antonio, TX. 4 Aug 91.
- Sylvia, D.M. Grower-produced VAM inocula: Aeroponic culture adapted for the nursery. Eighth North American Conference on Mycorrhizae. Jackson, WY, 7 Sept 90.
- Sylvia, D.M. Beneficial root-associated fungi improve establishment of sea oats on beach nourishment sand. National Conference on Beach Preservation Technologies, St. Petersburg, FL. 15 Feb 90.
- Sylvia, D.M. Distribution and mechanism of improved P uptake by mycorrhizal fungi. Phosphorus Research Workshop. Agricultural Research Department and National Fertilizer and Environment Research Center, Tennessee Valley Authority, Muscle Shoals, AL. 18 Jul 90.
- Sylvia, D.M. Grower-produced VAM inocula: Aeroponic culture adapted for the nursery. 8th North American Conference on Mycorrhizae, Jackson, WY. 6 Sep 90.
- Sylvia, D.M. Management of vesicular-arbuscular mycorrhizae following beach nourishment. 7th North American Conference on Mycorrhizae. Gainesville, FL. 4 May 87.
- Hung, L.L. and D.M. Sylvia. VAM inoculum production in aeroponic culture. 7th North American Conference on Mycorrhizae. Gainesville, FL. 8 May 87.
- Sylvia, D.M. Distribution and function of mycorrhizal hyphae on roots and in soil. American Association for the Advancement of Science. Chicago, IL. 15 Feb 87.
- Sylvia, D.M. Inoculum production of VA mycorrhizal fungi. American Society of Agronomy. New Orleans, LA. 2 Dec 86.
- Sylvia, D.M. Technologies for inoculum production, storage, and utilization of VA mycorrhizal fungi. 6th North American Conference on Mycorrhizae. Bend, Oregon. 26 Jun 84.
- Sylvia, D.M. Root protection by mycorrhizal fungi. Northeastern Forest Pest Council. Portland, Maine. 17 Mar 81.

B. Volunteered Papers at Scientific Meetings – Total of 48

- Ipsilantis, I. and D.M. Sylvania. 2003. Seasonal mycorrhizal colonization and ergosterol patterns of a Florida wetland with nutrient impact. International Congress on Mycorrhizae. Montréal, Canada. Aug 10-15.
- Kaonongbua, W. and D.M. Sylvania. 2002. Genetic diversity and taxon-specific primers of arbuscular mycorrhizal fungi associated with four Florida sea oats. American Society of Agronomy Annual Meeting Abstracts.
- Ipsilantis, I. and D.M. Sylvania. 2002. Seasonal patterns and mycorrhizal status of a Florida wetland. American Society of Agronomy Annual Meeting Abstracts.
- Sylvania, D.M. A. Alagely, and D.O. Chellemi. Impact of AM fungi on tomato competition with bahiagrass over a range of soil P. Soil Ecology Society Meeting. Pine Mountain, GA, 21 May 2001.
- Bray, S.R., K. Kitajima, and D.M. Sylvania. 2001. Effect of native fungi on growth, physiology and morphology of an invasive shrub, *Ardisia crenata*. The Ecological Society of America 86th Annual Meeting. Madison, Wisconsin.
- Kaonongbua, W. and D.M. Sylvania. Genetic diversity of AM fungi associated with four populations of Florida sea oats. American Society of Agronomy Annual Meeting. Charlotte, NC. 23 Oct 2001.
- Ipsilantis, I. and D.M. Sylvania. Mycorrhizal status and fungal activity from P impacted and unimpacted sites of a Florida wetland. American Society of Agronomy Annual Meeting. Charlotte, NC. 23 Oct 2001.
- Nyambati, E.M., L.E. Sollenberger, C.K. Hiebsch, and D.M. Sylvania. Nitrogen contribution from relay-cropped *Mucuna* and *Lablab* to *Maize* in northwestern Kenya. American Society of Agronomy Annual Meeting. Charlotte, NC. 23 Oct 2001.
- Sylvania, D.M. A. Alagely, and D.O. Chellemi. Impact of AM fungi on tomato competition with bahiagrass. American Society of Agronomy, Annual Meeting. Minneapolis, 9 Nov. 2000.
- Lalande, T.L., H.D. Skipper, W.C. Bridges, J.J. Fuhrmann, C.M. Reynolds, D.C. Wolf, P.G. Hartel, and D.M. Sylvania. Effects of annual rye grass (*Lolium multiflorum*) and pyrene on the microbial community of a Cecil soil. American Society of Agronomy, Annual Meeting. Minneapolis, 9 Nov. 2000.
- Bray, S.R., K. Kitajima, and D.M. Sylvania. Effect of native mycorrhizal fungi on ecophysiology of an invasive shrub, *Ardisia crenata*. The Ecological Society of America 85th Annual Meeting, Snowbird Utah, 6 Aug 2000.
- Sylvania, D.M. and C.M. Reynolds. Mycorrhizal interactions in petroleum-contaminated soils. American Society of Agronomy, Annual Meeting. Salt Lake City, 3 Nov 99.
- Gentry, T.J., T. Olexa, P.G. Hartel, J.J. Fuhrmann, D.M. Sylvania, C.M. Reynolds, and D.C. Wolf. Impact of pyrene contamination on soil microorganisms. American Society of Agronomy, Annual Meeting. Salt Lake City, 3 Nov 99.
- Lalande, T.L., H.D. Skipper, B.W. Pinkerton, C.M. Reynolds, J.J. Fuhrmann, D.M. Sylvania, P.G. Hartel, and L.W. Grimes. Phytoremediation of a pyrene-contaminated soil with annual ryegrass. American Society of Agronomy, Annual Meeting. Salt Lake City, 3 Nov 99.
- Reynolds C.M., D.M. Sylvania, T. Olexa, P.G. Hartel, T.J. Gentry, and D.C. Wolf. Mycorrhizal colonization of ryegrass in contaminated soils. The Ninth Annual West Coast Conference on Contaminated Soils and Groundwater, Oxnard, CA, 8-11 Mar 99.
- Buhr, K.L., R.N. Gallaher, R. McSorley, W.G. Harris, D.M. Sylvania. Problem-solving through hands-on, multi-disciplinary learning experiences in the "real-world" laboratory. American Society of Agronomy, Annual Meeting. Indianapolis, IN, 4 Nov 1996.

- Sylvia, D.M., J.V. Rousseau, A.J. Fox and D.J. Farmer. Diversity and function of ectomycorrhizal fungi in southern pine plantations. American Society of Agronomy, Annual Meeting. St Louis, MO, 3 Nov 1995.
- Pedersen, C.T. and D.M. Sylvia. Competition for phosphorus between slash pine and a *Panicum* sp. as influenced by ectomycorrhizal fungi. American Society of Agronomy, Annual Meeting. St Louis, MO, 3 Nov 1995.
- Farmer, D.J. and D.M. Sylvia. Identification of ectomycorrhizal fungi on southern pine using molecular methods. American Society of Agronomy, Annual Meeting. Seattle, WA, 1 Nov 1994.
- Pedersen, C.T. and D.M. Sylvia. Plant competition for phosphorus in pine flatwoods as affected by ectomycorrhizas and arbuscular mycorrhizas. American Society of Agronomy, Annual Meeting. Seattle, WA, 1 Nov 1994.
- Sylvia, D.M. Role of mycorrhiza in sustainable agriculture. Second environmentally sound agriculture conference, American Soc. of Agricultural Engineers, Orlando. FL, 22 Apr 94.
- Pedersen, C., A. Jarstfer and D. Sylvia. Time course study of the influence of Benlate on soil hyphae and root colonization of vesicular-arbuscular (VA) mycorrhizae. American Society of Microbiology. Atlanta, GA 20 May 93.
- Aziz T. and D.M. Sylvia. Population dynamics of VAM fungi in the Everglades National Park. American Society of Agronomy, Annual Meeting. Minneapolis, MN, 1 Nov 1992.
- Aziz, T. and D.M. Sylvia. Changes in mycorrhizal status in mitigated plots at Everglades National Park. American Society of Agronomy, Annual Meeting, Denver, CO, 27 Oct 91
- Sylvia, D.M. Sheared root inocula of VA mycorrhiza. Soil Ecology Society, Corvallis, OR, 1 Apr 91.
- Sylvia, D.M., L.C. Hammond, J.M. Bennett, and J.H. Haas. Field response of corn to water management and inoculation with *Glomus etunicatum*. Eighth North American Conference on Mycorrhizae. Jackson, WY, 4 Sep 90.
- Sylvia, D.M. and A.G. Jarstfer. Slurried-root inoculum of a vesicular-arbuscular mycorrhizal (VAM) fungus produced in aeroponic culture. Eighth North American Conference on Mycorrhizae. Jackson, WY, 4 Sep 90.
- Sylvia, D.M. and L. Neal. Nitrogen affects the phosphorus response of VA mycorrhiza. American Society of Microbiology. Annual Meeting, Anaheim, CA, 14 May 90.
- Hung, L.L. and D.M. Sylvia. Selection of efficient strains of vesicular-arbuscular mycorrhizal fungi for industrial sweet potato. American Society of Agronomy, Anaheim, CA, 27 Nov 88.
- O'Keefe, D.M. and D.M. Sylvia. Soil phosphorus chemistry and P-uptake by sweet potatoes colonized with vesicular-arbuscular mycorrhizal fungi. American Society of Agronomy, Anaheim, CA, 27 Nov 88.
- Hung, L.L. and D.M. Sylvia. Selection of efficient strains of vesicular-arbuscular mycorrhizal fungi for industrial sweet potato. Soil Sci. Soc. Am., Anaheim, CA. 27 Nov 88.
- Will, M.E. and D.M. Sylvia. Influence of rhizobacteria and VAM fungi on establishment of *Uniola paniculata* L. Soil Sci. Soc. Am., Atlanta, GA. 29 Nov 87.
- Medina, O.A., D.M. Sylvia and A.E. Kretschmer. Growth stimulation of Sirato by effective mycorrhizal fungi at different P levels. Soil Sci. Soc. Am., Atlanta, GA. 29 Nov 87.
- Hung, L.L. and D.M. Sylvia. 1987. Vesicular-arbuscular mycorrhizae of biomass sweet potato. Soil Sci. Soc. Am., Atlanta, GA. 29 Nov 87.

David M. Sylvania

- Hung, L.L., D.M. O'Keefe and D.M. Sylvania. Vesicular-arbuscular (VA) mycorrhizal inoculation of biomass crops. 7th North American Conference on Mycorrhizae, Gainesville, FL. 4 May 87.
- Medina, O., D.M. Sylvania and A. Kretschmer. Selection of effective vesicular-arbuscular mycorrhizal fungi for Siratro. 7th North American Conference on Mycorrhizae, Gainesville, FL. 4 May 87.
- Poole, B. and D.M. Sylvania. VA mycorrhizal status of *Myrica cerifera*. 7th North American Conference on Mycorrhizae, Gainesville, FL. 4 May 87.
- Sylvania, D.M. Survival and growth of flowering dogwood improved by VAM fungi. Soil Sci. Soc. Am., Chicago, IL, 1 Dec 85.
- Sylvania, D.M. Mycorrhizal fungi associated with sea oats in north Florida sand dunes. 6th North American Conference on Mycorrhizae. Bend, OR. 25 Jun 84.
- Sylvania, D.M. and N.C. Schenck. Effect of post-colonization treatments on sporulation of vesicular-arbuscular mycorrhizal fungi. American Phytopathological Society. Salt Lake City, UT. 8 Aug 82.
- Sylvania, D.M. and W.A. Sinclair. Phenolics induced by *Laccaria laccata* are associated with resistance to *Fusarium oxysporum* and *Pythium irregular* in primary roots of Douglas-fir seedlings. American Phytopathological Society. New Orleans, LA. 2 Aug 81.
- Sylvania, D.M. and W.A. Sinclair. A proposed role for low level antibiotic activity of an ectomycorrhizal fungus. American Phytopathological Society. Minneapolis, MN. 24 Aug 80.
- Sylvania, D.M. and W.A. Sinclair. Primary root elongation of Douglas-fir suppressed and tannin deposition stimulated by *Laccaria laccata*. 4th North American Conference on Mycorrhizae. Fort Collins, CO. 24 Jun 79.
- Sylvania, D.M. and T.A. Tattar. Electrical resistance studies of tree cankers. American Phytopathological Society. New York. 3 Nov 76.

STATE AND LOCAL

A. Invited Papers at Scientific Meetings – Total of 9

- Sylvania, D.M. Roles of mycorrhizae in the restoration of native plant species: General guidelines and a case study. Florida Native Plants Society Conference, Palm Harbor, FL, 11 May, 2001.
- Sylvania, D.M. Soil Microbiology. Brevard County Master Gardener Class, Cocoa, FL, 31 Jan 2001.
- Sylvania, D.M. Mycorrhizal technology for reclamation. Florida Institute of Phosphate Research. Bartow, FL. 16 July, 2001.
- Sylvania, D.M. Update on mycorrhiza research. Florida Workshop on Mycorrhiza, Florida International University, 14 June 2000.
- Sylvania, D.M. Mycorrhizae: Unseen contributors to native plant establishment and growth. Florida Native Plants Society (N. Brevard Chapter), Cocoa, FL, 18 May 99.
- Sylvania, D.M. Using multi-media to enhance graduate education. The Southern Deans and Directors of Academic Programs Spring Conference. Gainesville, FL, 12 Apr 99.
- Sylvania, D.M. Role of mycorrhizal fungi in dune reclamation. Ecological Management Meeting sponsored by EcoGroup, International, Ellenton, FL, 11 Mar 99.

David M. Sylvania

Sylvania, D.M. Current directions in mycorrhizal research. Fourth Biennial Meeting of the Florida Phytopathological Society. Gainesville, FL, 10 May 95.

Sylvania, D.M. Factors affecting spore production, viability and storage. Conference on the Application of VA Mycorrhizal Fungi in Crop Production. Gainesville, Florida. 22 Feb 84.

B. Invited Seminars – Total of 10

Colloquium to the Department of Botany, University of Florida, 1989, 2000.

Seminar to the Plant Pathology Department, University of Florida, 1996, 1999.

Seminar to the Soil Science Department, University of Florida, 1991, 1993, 1999.

Lecture to Kiwanis Club of Gator City, 1989.

Research summary for the Southern Regional Advisory Committee, 1988.

Forest Soils Seminar, 1986.

Mycorrhiza Seminar Series, 1984 - 1988.

C. Volunteered Papers at Scientific Meetings – Total of 8

Bray, S., Kitajima, K, and Sylvania, D. Utilization of native mycorrhizal fungi by *Ardisia crenata* in North-Central Florida hardwood forests. UF/IFAS Center for Aquatic and Invasive Plants Research and Extension Review. 7 March, 2000.

Sylvania, D.M. Role of mycorrhizae in ecosystem management and restoration. Natural Resources Forum '98, Gainesville, FL, 10 June 98.

Jarstfer, A.G. and D.M. Sylvania. Susceptibility of tomato, pepper and onion seedlings to a VA mycorrhizal fungus in a variety of commercial potting mixtures. Soil and Crop Science Society of Florida. Daytona Beach, FL. 21 Sep 94.

Jarstfer, A.G. and D.M. Sylvania. Susceptibility of various vegetable seedlings to a VA mycorrhizal fungus in a soilless potting mixture. Soil and Crop Science Society of Florida. Daytona Beach, FL. 21 Sep 94.

Jarstfer, A.G., P. Koppenol, and D.M. Sylvania. Effects of magnesium sulfate application on the *Glomus-Allium cepa* symbiosis. Soil and Crop Science Society of Florida. Daytona Beach, FL. 21 Sep 94.

Aziz, T. and D.M. Sylvania. Vesicular-arbuscular mycorrhizae ameliorate the detrimental effect of BIODUNE on plant growth. Soil and Crop Science Society of Florida. Orlando, FL. 25 Sep 91.

O'Donnell, J.J., D.M. Sylvania. Mycorrhizal status of *Vigna parkeri*. Soil and Crop Science Society of Florida. Daytona Beach, FL. 26 Sep 90.

Sylvania, D.M. VA mycorrhizal native plants for phosphate mine revegetation. Soil and Crop Sci. Soc. Fla., Sarasota, FL. 20 Oct 87.

CONTRACTS AND GRANTS: Total funding to date - \$2,415,733

Principal Investigator: \$1,404,172

USDA-ARS. Pasture Research and Technology Transfer fro Northeast Livestock Producers. 15 Sep 2004 to Sep 14 2005. \$30,000.

David M. Sylvia

USDA-CSREES, On-Farm Research for Supporting Sustainable, Organic and Specialty Agriculture. Co-Pi: W. Curran, R. Hoover, J. Watson. 5/2003 to 8/2005. \$263,744.

Indian Council of Forestry Research and Education. Training Program for V. Mohan. 18 Mar to 18 Jun 2001. \$9,638.

Mycorrhizal Applications, Inc. Mycorrhizal Infection Percentage (MIP) Assay of Commercial AM Inoculum. Sep-Oct 2001. \$ 900.

St. John River Water Management District. Quantification of microbial and fungal differences between nutrient impacted and unimpacted sites in various vegetative communities of the upper St. Johns River basin. 1 Sep 2000 to 31 Aug 2002. \$50,000.

Department of Commerce, Sea Grant Program. Compatible plant/mycorrhizal fungus ecotype combinations for micropropagated sea oats planted on Florida beaches. Co-Pi: Mike Kane, Environmental Horticulture, Feb 2000 to Jan 2002, \$91,468.

Plant Health Care, Inc. Mycorrhizal Infection Percentage (MIP) Assay of Commercial AM Inoculum. Mar-Dec 2000. \$3,700

University of Florida, Minigrant for the improvement of teaching. 1998, \$3,000.

U.S. Army Cold Regions Research and Engineering Laboratory. Evaluation of mycorrhizae on a remediation site. 9/1/97 to 8/31/98. \$11,600

Pine Productivity Research Partnership. Diversity and activity of mycorrhizae in stands of slash and loblolly pine. 7/1/95 to 6/30/96. \$ 44,714

Walt Disney Imagineering. Mycorrhizae of landscape trees at Walt Disney World. 4/96 to 7/96. \$11,848

University of Florida, Minigrant Award for the Improvement of Instruction, 1995. \$2,950.

Pine Productivity Research Partnership. Resource acquisition by ectomycorrhizae in southeastern forest soils. 1/94 to 12/94, \$52,301

National Science Foundation, Biotic Systems and Resources. Mycorrhizal root competition for nutrients in infertile forest soils. 1/91 to 12/93, \$320,994.

National Science Foundation, Cooperative Science Program with Western Europe. Serological markers of VA mycorrhizal fungi for *in situ* monitoring of fungal competence. 9/92 to 8/93, \$10,000.

Pine Productivity Research Partnership. Mycorrhizal contribution to nutrient absorptive surface area and subsequent growth of pine. 1/92 to 12/93, \$88,390.

David M. Sylvia

Program Support Grant, Office of International Programs. Assessment of the aeroponic/sheared-root method for economical production and utilization of vesicular-arbuscular mycorrhizal (VAM) fungi in Honduras. 9/91 to 8/92, \$4,900.

Pine Productivity Research Partnership. Pine genotype interactions with mycorrhizae. 6/90 to 12/91, \$54,452.

U.S. Department of Interior. National Park Service. Monitoring VAM fungi on the hole-in-the-donut mitigation site, Everglades National Park. 4/90 to 3/92, \$73,796.

Department of Commerce, Sea Grant Program. Fungi-improved sea oats: Field tests, 1/90 to 12/90, \$5,838.

Department of Commerce, Sea Grant Program. Development of a practical inoculum of VAM fungi for sea oats. 9/88 to 8/89, \$19,939.

Gas Research Institute. Impact of vesicular-arbuscular mycorrhizal fungi on the survivability of plantlets of biomass species derived from tissue culture. 7/88 to 6/89, \$20,000.

Gas Research Institute. Economical propagation systems for improved survivability and growth of tissue cultured plantlets B. Vesicular-arbuscular mycorrhizae for tissue-cultured plantlets. 1/86 to 6/88, \$120,000.

Department of Commerce, Sea Grant Program. Improved establishment of dune grasses on beach restoration sites through utilization of beneficial root associated microorganisms. 4/85 to 4/88, \$105,000.

Department of Commerce, Sea Grant. Mycorrhizal associations of sea oats. 1983 to 1984, \$5,000.

Co-Principal Investigator: \$1,011,561

NSF/BES - Environmental Technology. Collaborative research: Understanding and enhancement of arsenic hyperaccumulation by a fern plant. Pi: Lena Ma. 9/2001 to 8/2004. \$376,672.

USDA/NRI, Plant Responses to the Environment. Mycorrhizal soils and plant drought tolerance. Pi: Robert Augé (Univ. Tennessee). Jan 2000 to Dec 2002. \$100,000.

Organisation de Cooperation et de Developpement Economiques (OCDE). Travel funding for Dr. Ibrahim Ortas, 1998, \$7,503.

UF/IFAS Invasive Plants Working Group. Ecophysiological basis for high invasive potential of *Ardisia crenata* in Florida. Co-Pi: Kaoru Kitajima Department of Botany. 1/99 to 12/02, \$13,500.

International Programs Training Unit. FAO Fellowships for training in *Applications of Mycorrhizal Technology to Forestry*. 9/95 to 4/97, \$56,043.

David M. Sylvia

UF Division of Sponsored Research. Gatorade Allocation for Development of Patent Number 5,096,481. 7/93 to 6/94. \$32,000.

Technological Research and Development Authority of Florida. Space Research Grants Program. Lunar soil simulant plant growth studies: an assessment of mineralogical, chemical, and biological properties. 7/90 to 6/91. \$50,000.

Florida Institute of Phosphate Research. Propagation and establishment of indigenous Florida plants for revegetation and restoration of phosphate mining sites. 8/84 to 9/87, \$367,993.

National Science Foundation, Travel Grant for the 7th North American Conference on Mycorrhizae, Gainesville, FL May 4-8, 1987, \$20,000.