

**JOAN M. GAIDOS, Ph.D.**

EDUCATION:

2001. Ph.D., Crop and Soil Environmental Science, Virginia Tech, Blacksburg, Virginia.

1991. M.S., Animal Science/Reproductive Physiology, University of Kentucky, Lexington, Kentucky.

1988. B.S., Animal Science/Biology, Virginia Tech, Blacksburg, Virginia.

SPECIALITY/TECHNICAL COURSES:

2005. Field Volatilization of Pesticides: Computer Modeling Workshop, Environmental Fate and Effects Division, OPP, EPA. Crystal City, Virginia.

2002. Terrestrial Field Dissipation Workshop, Environmental Fate and Effects Division, OPP, EPA. Crystal City, Virginia.

2001. Society of Environmental Toxicology and Chemistry, National Meetings, Baltimore, Maryland.

2001. Mass Media Science Writing Workshop, American Association for the Advancement of Science (AAAS), Washington, DC.

2000. Nitrate Leaching and Economic Analysis Package (NLEAP) Computer Model Development, Assessment, and Validation. Fort Collins, Colorado.

1996. Public Policy Institute on Sustainable Agriculture. Lexington, Kentucky.

1995. Nutrient Management Training, Roanoke, Virginia.

1995. Teaching Environmental Economics, Intensive study course. Virginia Tech, Blacksburg, Virginia.

PROFESSIONAL EXPERIENCE:

2007-Present. Senior Scientist, Cambridge Environmental Inc., Frederick, Maryland.

2004-2007. Associate Scientist, Cambridge Environmental Inc., Germantown, Maryland.

2001-2004. Staff Scientist, Dynamac Corporation, Germantown, Maryland.

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2001. Mass Media Science & Engineering Fellow, American Academy for the Advancement of Science, Richmond Times Dispatch, Richmond, Virginia.

1998-2001. Research Assistant, Virginia Tech, Crop and Soil Environmental Science Department, Blacksburg, Virginia. As a Ph.D. candidate, designed and conducted large farm field experiments measuring yield and nitrate leaching, using over 300 ceramic suction lysimeters, under various nitrogen rates and timings in no-till winter wheat at over 16 sites in the Virginia Coastal plain. Integrated data from moisture probes, weather stations, crop coefficients, and lysimeters to estimate nitrate concentrations in soil water over time. Determined economically optimum yields and corresponding nitrate leaching rates to compare economic and environmental impacts of various N management strategies. Wrote and edited articles about complex scientific principles for peer groups and non-scientists through proposals, research reports, Extension publications, peer-reviewed journal articles, field days, and state and national professional and industry meetings. Analyzed data, and developed graphics and supporting material utilized for policy development by state government agency (Department of Conservation and Recreation). Worked cooperatively with state and national agencies (USDA-NRCS) to finalize the development and validation of a computer nitrate-leaching model (NLEAP). Led and coordinated personnel teams of 5 or more people to perform field and laboratory work. Collected and analyzed hundreds of plant tissue, soil and water samples. Extensively utilized computer software; Excel, Sigma Plot, Word, SAS, JMP, PowerPoint and others. Taught undergraduate Soil Fertility.

1993-1998. Extension Agent, Virginia Cooperative Extension, Pulaski, Virginia.

1992-1993. Extension Agent, Kentucky Cooperative Extension Service, Breckenridge, Kentucky. Worked collaboratively with representatives from county and state agencies and officials to coordinate county, regional and state policies, programs and events for state Extension programs. Developed curriculum and teaching materials to deliver agricultural and natural resource education programs to over 600 youth and 100 adults on a monthly basis. Supervised 2 paid staff and over 100 adult volunteers annually. Managed over 800 youth and adults annually for a wide range of programs and events including; livestock shows, fairs, interstate exchange programs, public speaking contests, day and week-long camps, leadership programs, and more. Served on county, state and regional committees as a participating member or chair. Reported and edited weekly news articles, newsletters and reports for public and administrative audiences.

1989-1991. Research Assistant, University of Kentucky, Department of Animal Science, Lexington, Kentucky. As a M.S. candidate, performed blood sampling and serum analysis for hormones and other metabolites in horses, cattle, sheep and swine. Conducted various serum and tissue analysis and radioimmunoassays. Worked in sterile conditions and with radioactive materials. Assisted with surgical and other procedures including ovariectomies, superovulations, artificial inseminations and gastrointestinal probe insertion. Guest lectured for extension and other non-scientific audiences totaling over 200 people on topics involving basic principles in

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animal science. Taught various sections of introductory Animal Science course and laboratory. Course instructor for Basic Equine Breaking and Training laboratory.

1988-1989. Research Laboratory Assistant, University of Kentucky, Alzheimer's Research Laboratory, Lexington, Kentucky. Maintained human brain and skin cell cultures for Alzheimer's research. Prepared culture media, maintained sterile field and incubation condition, kept data records, and assessed tissue development.

1986-1988. Lab Assistant, Virginia Tech, Dept. of Animal Science Forage Testing Laboratory, Blacksburg, Virginia.

#### AWARDS:

American Association for the Advancement of Science (AAAS) Mass Media Science and Engineering Fellow (2001).

Natural Resource Conservation Service Grant recipient (1998-2000).

Virginia Small Grains Board Grant recipient (1997-2000).

National Outstanding Extension Publication award (1996).

Virginia State Outstanding Extension Programming District award (1994).

Diagnostic Systems Laboratory Grant recipient (1991).

National Arabian Horse Association Scholarship recipient (1986).

National Ruritan Association Scholarship recipient (1984).

#### PROFESSIONAL ORGANIZATIONS:

National Association of Science Writers

Agronomy and Soil Science Society of America

Gamma Sigma Delta Honor Society

#### SUMMARY OF EXPERTISE:

Technical areas of expertise include the environmental fate and impact of natural and man-made chemicals in the environment.

More than 10 years of experience in environmental and reproductive sciences supporting academic research, and serving as a technical editor and reviewer.

Four years of experience supporting U.S. Environmental Protection Agency (EPA) Office of Pesticide Programs (OPP) assessing the environmental behavior, and ecological and human health risks of pesticides and managing databases and literature searches.

SELECTED CONSULTING PROJECT EXPERIENCE:

U.S. EPA, OPP, Environmental Fate of Pesticides, Technical Editor and Reviewer

Serves as technical editor and reviewer for the U.S. EPA Environmental Fate contract. Responsibilities include the review, statistical data evaluation, and technical editing of chemical and biological data pertaining to the fate and transport of potentially hazardous materials in terrestrial and aquatic ecosystems, and on the impact of pesticide use on ground and surface water. Conducts primary review and secondary reviews of studies on the environmental fate pesticides and provides technical direction and advice to other reviewers. Compiles fate assessments by evaluating and summarizing reviewed study results and data. Determines the major routes of dissipation and degradation patterns of pesticides and transformation products, and the likelihood of the parent and/or transformation products reaching ground or surface water. Summarizes pesticide use and characteristics for use in computer modeling programs such as PRZM/EXAMS and SCI GROW2. Experience developing literature searches, including keyword search strategies using electronic databases such as Agricola, Biosis, Cambridge Scientific Abstracts, AGRIS, Biological and Agricultural Index, Zoological Record and others at locations such as the National Agricultural Library, Library of Congress, Johns Hopkins Medical Library.

U.S. EPA, OPP, Environmental Fate of Pesticides, Antimicrobial Division, Task Leader

Serve as task leader editor and reviewer for the U.S. EPA Environmental Fate, Antimicrobial Division subcontract for ICF Incorporated. Responsibilities include managing task assignments, maintaining budgets, and producing monthly reports. Also performs technical editing and review of studies and science chapters on the environmental fate of pesticides with antimicrobial uses.

McGuire AFB, Basewide Background Study, Statistical Evaluation

As a subcontractor for e<sup>2</sup>M, performed statistical evaluation of data collected in support of updated McGuire AFB Basewide Background Study. Recommended sampling strategy for statistically viable data sets based on review of data sets and supporting documentation from previous background study and background study from neighboring Ft. Dix. Provided supporting documentation and review of regulatory guidance for proposed statistical analysis. Performed statistical evaluation of appropriate data sets from previous background study and data sets collected for the updated background study using ProUCL (version 4.00.02). Interpreted and summarized statistical evaluation for inclusion in final basewide background study report.

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U.S. EPA, OPP, Ecological Risk of Pesticides

Served as technical editor and reviewer for the U.S. EPA Ecological Risk of Pesticides contract. Responsibilities included the review and interpretation of data relating to acute, subchronic, and chronic toxicity of pesticides in water, sediment, and soil. Studies included LC50 determinations and reproduction success of avian species. Responsible for statistical analysis using TOXSTAT and SAS programs.

U.S. EPA, HED, Environmental Toxicity (Human) of Pesticides

Served as reviewer on the Toxicity (Human) of Pesticides contract with EPA Office of Pesticides Programs. Conducted primary review of studies concerning the acute, sub-chronic, and chronic toxicity, mutagenicity, neurotoxicity, oncogenicity, and enzyme biochemistry of pesticides in mammals.

U.S. Department of the Interior, Bureau of Land Management, and National Office of Fire and Aviation Management

Supported the development and evaluation of Environmental Assessments (EA's) regarding for the effects of fire on soils in several western states. Also prepared technical reports assessing cyanide in soil after aerial application of fire-retardant in southeastern Idaho, including responsibly for statistical analysis, overall evaluation, and presentation of data.

American Association for the Advancement of Science (AAAS)

Researched and wrote science and environmental articles and columns for major mid-Atlantic newspaper (circulation 230,000). Included articles based on trends in science and the environment, embargoed research from science journals, news releases and medical reports. Interviewed scientists, researchers, public officials and the general public. Developed original story ideas and worked with other writers, editors and graphic artists to develop articles.

ORIGINAL REPORTS:

Principal author/reviewer of over 150 reviews of studies on the environmental fate of pesticides that were submitted under Subdivision N Guidelines.

Principal author/reviewer of over 20 reviews of studies on the ecological risk of pesticides that were submitted under Subdivision E Guidelines.

Principal author/review of over 10 reviews of studies on the toxicity of pesticides to human, including subchronic, reproductive and fertility, and prenatal development toxicity, that were submitted under Subdivision F Guidelines.

Principal author of numerous scientific articles, columns and op-ed's written for the mass media audience.

- Gaidos, J.M, and Werner. P. (2003). Assessment of soil cyanide concentrations after aerial application of Fire-Trol<sup>®</sup> LCG-R fire retardant to wildland site in southeastern Idaho. U.S. Department of Interior, Bureau of Land Management and National Office of Fire and Aviation Management. Boise, Idaho.
- Gaidos, J.M., Alley, M.M., and Roygard, J.K. (2002). Nitrogen management in no-till wheat: yield and nitrate leaching at various early season fertilizer N application rates. *Agronomy Journal* (in review).
- Gaidos, J.M. and Alley, M.M (2002). No-till winter wheat in the Virginia Coastal Plain: determining optimum spring N rate, time of application, and N rate prediction method. *Agronomy Journal* (in review).
- Gaidos, J.M. and Alley, M.M. (2000). Nitrogen management for no-till winter wheat. Virginia Cooperative Extension Publication. Virginia Tech, Blacksburg, VA.
- Gaidos, J.M., Alley, M.M., and Roygard, J.K. (2000). Influence of nitrogen fertilization rate and timing on no-till wheat yields and nitrate leaching in the Virginia Coastal Plain. ASA-CSSA-SSSA Annual Meetings, Minneapolis, MN.
- Gaidos, J.M. and Schafer, J. (1999). Nitrate leaching in no-till cropping systems. Groundwater Pollution Primer, Civil Engineering Department, Virginia Tech, Blacksburg, VA.  
[http://www.ce.vt.edu/program\\_areas/environmental/teach/gwprimer/group06/base.htm](http://www.ce.vt.edu/program_areas/environmental/teach/gwprimer/group06/base.htm).
- Gaidos, J.M., Alley, M.M., Khosla, R., and Hammons, J.L. (1998). Nitrogen application rate and timing influence on no-till wheat yields in the Virginia Coastal Plain. ASA-CSSA-SSSA Annual Meetings, Baltimore, MD.
- Gaidos, J.M., Alley, M.M., and McKenna, J.K. (1997). Virginia's agroecosystems. Virginia Cooperative Extension web site  
<http://www.ext.vt.edu/departments/cses/agroeco/agroeco.html>.
- Gaidos, J.M. and Ellerbrock, M. (1995). Teaching water quality and land use planning. In: *Teaching Environmental Economics*, M. Ellerbrock (ed). Virginia Cooperative Extension, Virginia Tech.
- Gaidos, J.M., Schillo, K.K., Hileman, S.M., and Duren, S.A. (1992). Hormonal and metabolic changes associated with sexual maturation in yearling fillies. American Society of Animal Science-Southern Section, Lexington, KY.

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Gaidos, J.M., Schillo, K.K., and Hileman, S.M. (1991). Validation of radioimmunoassay for cortisol in equine serum. Diagnostic Systems Laboratories, Inc. Technical Report.

Gaidos, J.M. (1990). *Breeds of Horses*. University of Kentucky Extension Service. University of Kentucky, Lexington, KY.