

Michael Thomas Aide
Department of Agriculture
Southeast Missouri State University
1 University Plaza
Cape Girardeau, MO 63701
mtaide@semo.edu

EDUCATION:

Ph.D., 1982, Mississippi State University, Soil Chemistry Major, Chemistry Minor.

M.S., 1980, Mississippi State University, Soils Major

B.S., 1976, University of Wisconsin-Madison, Soils Major

B.S., 1973, University of Wisconsin-Platteville, Chemistry and Mathematics Majors

EMPLOYMENT RECORD AND RESPONSIBILITIES: (Southeast Missouri State University)

Professor of Agriculture May 2017 to Present:

Teaching duties include Plant Science, Soils, Soil Fertility and Plant Nutrition, Soil Classification and Resource Management, Weed Science, Plant Pathology, Integrated Pest Management and Water Management. Research involvement includes rice fertility, arsenic and metal heavy metal speciation in soils, irrigation.

Chairperson, Department of Agriculture. January 2007 to present.

Teaching duties include: Soils, Soil Fertility and Plant Nutrition, Soil Classification and Resource, Weed Science, Plant Pathology, Applied Hydrology, Water Management. Requested retirement from Chairperson duties Fall 2016.

Interim Chairperson, Department of Agriculture. July 2006 to January 2007.

Professor of Physics and Engineering-Physics, June, 2004 to July 2007.

Teaching duties include: Soils, Soil Fertility and Plant Nutrition, Soil Classification and Resource Management, Geochemistry. Research involvement includes rice fertility, metal speciation in soils, and the applications of X-ray technologies (XRD, XRF, EXAFS) to soil fertility and soil genesis.

Professor of Geosciences, September, 1999 to June, 2004.

Teaching duties include: Soils, Soil Fertility and Plant Nutrition, Soil Classification and Resource Management, Clay Mineralogy, Low-Temperature Geochemistry. Research involvement includes rice fertility, metal speciation in soils, and the applications of X-ray technologies (XRD, XRF, EXAFS) to soil fertility and soil genesis.

Professor of Agriculture, July 1995 to September, 1999:

Teaching duties include Plant Science, Soils, Soil Fertility and Plant Nutrition, Soil Classification and Resource Management, Clay Mineralogy, Low-Temperature Geochemistry, Principles of Grain Crops, and

World Food and Society. Research involvement includes rice fertility, metal speciation in soils, and the applications of X-ray technologies to soil components.

Chairperson, Department of Agriculture, October, 1990 to Aug, 1993:

Associate Professor of Agriculture, July, 1988 to August, 1995:

Teaching duties include Plant Science, Cotton and Rice Production, Soil Conservation and Resource Management, Principles of Grain Crops Production, AG Seminar, and Soil Fertility and Plant Nutrition, Clay Mineralogy.

Assistant Professor of Agriculture, July 1982 to July 1988

Teaching duties included Plant Science, Forage Production, Soil Conservation, Soil Classification, Grain Production, Ag Seminar and Plant Pathology.

THESIS AND DISSERTATION TITLES:

Ph.D., Interpretation of non-ideal thermodynamic behavior of smectites toward cation exchange.

M.S., Characterization of amorphous materials synthesized under conditions of controlled pH and ionic strength.

RESEARCH INTERESTS:

Soil: Research interests center on the chemical behavior of transition metals in soil, especially metal-oxide adsorption mechanisms. A second area of interest involves clay mineralogy and soil formation (genesis). Both areas require continuing interest in analytical instrumentation, especially NMR, HPLC, FT-IR, XRD, SEM, MS-ICP, INAA, and EXAFS.

Agronomy: Research interests involve the growth and development of grain crops in integrated systems involving soil fertility and water management. Of interest is the influence of soil chemistry on rice physiology.

Mathematics: Interests involve discovering analytical and numerical solutions for differential equations having applications to soil science.

MEMBERSHIP ON PROFESSIONAL ORGANIZATIONS:

American Society of Agronomy (1977 to present),

Soil Science Society of America (1977 to present)

Missouri Academy of Science (1985 to 2016),

Missouri Association of Professional Soil Scientists (1985 to present)

International X-ray Adsorption Fine Structure Society (1994 to 2000)

Missouri Cattlemen's Association (2007 to 2016)

Soil Water and Conservation Society (2015 to Present)

MEMBERSHIP ON COLLEGE-LEVEL COMMITTEES:

College Council (1982-86, 1990-92, 1995-98, 2006-2017)
Professional Development (1986-89, Chair (1988-89))
College Honors Program (1983-90)
Research Involving Vertebrates and Human Subjects (1985-94)
Kelso Wildlife Sanctuary Committee (1988-1995)
Scholarship Committee (1982-90)
Master of NS-ES option Committee (1992-1994)
Environmental Science Committee (1996-present)
Information Technology Committee (1998-2010)
Environmental Curriculum Committee (1996 - present; chairperson (2002))

MEMBERSHIP ON UNIVERSITY-LEVEL COMMITTEES:

Graduate Council (1989-91)
International Students Committee (1984-87)
Honors Council (1984-90)
Textbook Committee (1987-90)
Faculty Senate Alternate (1988-89, 1994-96)
Faculty Senate Representative (1989-90)
Search Committee for Dean COST (1989, 1996)
Affirmative Action Committee (1992-95)
Search Comm. for Dean College of Education (1992)
Search Comm. for Director Purchasing (1992)
Traffic Ticket Appeals Committee (1994-99)
UI Assessment Committee (1995-98)
Grants and Research Funding Committee (1995-98) (2009-2012)
Hazardous Waste Committee (1996-1999)
University Studies Course Review Committee (1996-1998)
University Professional Grievance Committee (1999-2003; chairperson 2002)
Radiation Safety Committee (2002 –Present)
Academic Council (2006-2009)
University Assessment Committee (2008-2011)
Program Review Committee (2011-2014)

ACADEMIC SERVICE

University Studies Program Review:

Under the direction of Dean of the School of University Studies, I implemented a review of all 100-200 level courses in the University Studies Program (1989-90). The review process involves allowing each

department to review their syllabi and to adjust them to reflect actual teaching practices. Secondly, the review process is attempting to define the key cognitive skills that each category specifies as central to its teaching and content.

Agronomy Curriculum Review:

Reviewed the agronomy option of the Agriculture Major (1998 to present) to: (1) provide a curriculum within the Guidelines of ARCPACS, and (2) upgrade the mathematics and allied science requirements. Current advancements (2012) includes distance education agreements with Missouri State University, Truman University, Northwest Missouri State University, Central Missouri State University, and Lincoln University.

Reviewed the Agriculture Program at University Tennessee-Martin.

The scope of the review consisted of curriculum, faculty composition, operation and auxiliary budgets, teaching resources and departmental outreach.

Reviewed the Agriculture Program at Arkansas State University.

The scope of the review consisted of curriculum, faculty composition, operation and auxiliary budgets, teaching resources and departmental outreach.

Soils articulation agreement with University Missouri-Columbia.

Developed a 3 - plus - 2 program in soil science with the University Missouri – Columbia in 2002 where students at Southeast Missouri State University may initiate a major in soil science, then transfer to the University of Missouri – Columbia to complete their degree program.

DEVELOPED MEMORANDUM'S OF UNDERSTANDING

Develop memorandum of understanding on cooperative research with USDA-NRCS for the David M. Barton Agriculture Research Center (2012)

Develop memorandum of understanding on cooperative research and teaching with Lincoln University (2012)

RESPONSIBLE FOR OPERATIONS AND DEVELOPMENT OF DEPARTMENT AUXILIARIES (Chairperson)

David M. Barton Agriculture Research Center

The David M. Barton Agriculture Research Center (Gordonville, MO) is a 252 acre beef and row crop teaching/research facility. The primary crop research involves corn, soybean, sweet sorghum and forage research, each corporate sponsored. All of these research facilities extensively utilize undergraduate students to assist in the research under the mentorship of faculty, corporate partners, and also cooperating State and Federal Agency personnel.

Missouri Rice Research Farm

The Missouri Rice Research Farm is located in Glennonville MO (Dunklin Co., MO) and is owned and managed by the Missouri rice producers; however, the Missouri Rice Breeder (Dr. Donn Beighley) is a faculty member of the department. Development of rice research and rice breeding are the dominant activities.

Horticulture Research Station

The Horticulture Research Station is composed of the Charles L. Hutson Greenhouse complex (a three bay, climate-controlled production greenhouse complex) and the Charles J. Nemanick Alternative Agriculture Gardens (industrial compost facility, irrigated turf plots, a trellis-based orchard, nursery, bramble plots, viticulture, and truck garden). Research supports the horticulture sector and small agriculture producers.

Research Field at Southeast Missouri State University (Sikeston)

The Biofuels/Biomass Research Field at Southeast Missouri State University (Sikeston) is composed of 12 acres of irrigated Dubbs silt loam soil with research developed to further biomass and biofuel growth in the Mid-South region.

University Foundation and Department of Agriculture Activities

The University Foundation is an enterprise created by the Southeast MO State University to develop giving opportunities to the university. The University Foundation assisted the department in accomplishing its goals by (1) developing strategies for building new and lasting relationships between the academic side and potential private cooperators, (2) arranging discussions involving the academic faculty with the private sector to develop shared values and an understanding of the workplace skill sets required by the private sector, (3) working with the faculty to integrate curriculum development with infrastructure development, and (4) soliciting financial contributions once consensus had developed around shared values.

To date, the University Foundation has raised approximately \$5,000,000 for the Department of Agriculture. Three million, four hundred thousand was received from one donor and was endowed with the annual contributions evenly dispersed to scholarships and operations at the David M. Barton Agriculture Research Center. The remaining gifts were provided by the generosity of financial institutions, agribusiness, and individuals. These monies were dispersed among the following: (1) supporting courses having teaching content of interest to the donors, (2) scholarships, (3) classroom and laboratory development, (4) supporting infrastructure development of the Charles J. Nemanick Alternative Agriculture Gardens, the David M. Barton Agriculture Research Center, and the Charles L. Hutson Horticulture Greenhouse complex, (5) unique one-of-a kind projects, and (5) unrestricted gifts.

MISSOURI ACADEMY SCIENCE

Vice President – 2010-2011

President-Elect – 2011-2012

President 2012-2013

As President, responsible for operation and budget of the academy. Lead coordinator for the annual meeting.

REFEREED PUBLICATIONS:

Nash, V.E., D. E. Pettry, and M. T. Aide. 1983. Noncrystalline clay distribution in the major land resource areas of Mississippi. *Soil Sc. Soc. Am. J.* 47:1229-1233.

Aide, M. T. 1987. Naturally occurring sodic soils in southeast Missouri. *Trans. Missouri Acad. Sci.* 131-139.

Aide, M. T. 1987. Teaching Grain Crops as a sequential course with emphasis on student writing as a learning tool. *J. Agron. Educ.* 16:92-94.

Aide, M. T. and N. Tibbs. 1987. The influence of loess on Ultisol formation on Taum Sauk Mountain, Missouri. *Trans. Missouri Acad. Sci.* 93-103.

Aide, M. T., B. Brown, and K. Gregg. 1987. The influence of loess thickness on fragipan expressions in St. Francois and Ste. Genevieve Co's, Missouri. *Trans. Missouri Acad. Sci.* 63-79.

Aide, M. T. and N. Tibbs. 1987. Chromium in a sandy soil contaminated by aluminum etching waste fluids. *Trans. Missouri Acad. Sci.* 22:62-65.

Aide, M. T., W. W. Ellis, and W. E. Meyer. 1987. Case Study: Career search seminar prepares students for interviews. *NACTA Journal.* 31:24-25.

Aide, M. T. 1987. Designing parabolic waterways. *J. Agronomic Educ.* 17:129-130.

Aide, M. T. and N. Tibbs. 1988. A relationship between exchangeable sodium and concretion composition in two soils. *Trans. Missouri Acad. Sci.* 22:61-65.

Aide, M. T. 1989. Teaching critical thinking in soil classification. *J. Agronomic Educ.* 18:37-39.

Aide, M. T. and W. W. Ellis. 1990. Agriculture Clubs: Extending mutual interests. *J. Agron. Educ.* 20:37-40.

Wilson, M., and M.T. Aide. 1990. Differential response of row covers on yield of white potatoes in Missouri. *HortScience* 25:8.

Wilson, M., and M.T. Aide. 1990. Influence of several rates of potassium fertilizer on tuber and soil content of *Solanum tuberosum*. *HortScience* 25:8.

Aide, M. T. 1991. Measuring temperatures to teach soil thermal properties. *J. Agron. Educ.* 20:159-161

Aide, M. T. and V. Gummershiemer. 1991. Simulating soil temperatures using tempchange. *Trans. Missouri Acad. Sci.* 25:65-68.

Wilson, M., M. Aide, and V.A. Khan. 1991. Fall production of packman broccoli and Goumet cabbage in southeast Missouri. *Proc. Natl. Agric. Plastic Cong.* 23: 299-304.

Wilson, M., M. Aide, and V.A. Khan. 1991. Row cover effects on growth and yield of bellboy peppers. *Proc. Natl. Agric. Plastic Cong.* 23:305-307.

- Aide, M. T., K. Moore, J. Nicholas, G. R. Ravichandren and J. Thompson. 1992. Soil Genesis in rhyolite residuum in the St. Francois Mountains. *Trans. Missouri Acad. Sci.* 26: 65-77.
- Aide, M. T. 1992. Influence of organic matter and o-phosphate on chromium(VI) adsorption. *Trans. Missouri Acad. Sci.* 26:79-90.
- Aide, M.T. 1994. Using XANES Spectroscopy to determine the oxidation state of chromium in contaminated soil. *Trans. Missouri Acad. Sci.* 27:13-18.
- Aide, M.T. 1993. Chromium(VI) adsorption and reduction in soils. *Trans. Missouri Acad. Sci.* 28:23-33.
- Aide, M.T., and D. Terry. 1996. Survey of mathematics and science requirements for production oriented agronomy majors. *J. Nat'l Resour. and Life Sci. Educ.* 25:66-70.
- Aide, M.T. 1995. Potassium selectivity on reference and soil smectites. *Trans. Missouri Acad. Sci.* 29:23-30.
- Aide, M.T. 1995. Effects of nitrogen source and potassium fertilization on dry seeded rice. *Trans. Missouri Acad. Sci.* 30:80-86.
- Aide, M.T., and C.J. Cwick. 1998. Chemical weathering of soils from the glacial lake Agassiz region of Manitoba, Canada. *Environ. Geol.* 33:115-121.
- Aide, M.T., and M. Cummings. 1997. The influence of pH and phosphorus on the adsorption of chromium(VI) on boehmite. *Soil Sci.*162:599-603.
- Aide, M.T., 1999. Soil development on foreshore and aeolian dune deposits in the Hudson Bay lowlands near Churchill, Manitoba. *Trans. Missouri. Academy Science.* 33:1-8.
- Cwick, G.J., M.T. Aide, and M.P. Bishop. 1998. Use of hyperspectral data to assess the response of black spruce and jack pine trees to biochemical variability at a forest site in Manitoba. *Canadian J. Remote Sensing.*24:187-193.
- Aide, M.T., G.J. Cwick, and M.F. Cummings. 1997. Clay mineralogy and potassium status of selected soils in the Glacial Lake Agassiz region of central Manitoba. *Can. J. Soil Sci.* 79:1-8.
- Aide, M.T., and D.W. Wendel. 1997. Soil genesis and vermiculite formation from rhyolite in the St. Francois Mountains of Missouri. *Trans. Missouri Acad. Sci.* 31:9-18.
- Picker, J.P., R. Skidmore, and M.T. Aide. 1999. Potassium and phosphorus nutrition in rice. *Trans. Missouri Acad. Sci.* 33:17-23
- Aide, M.T., T. Alexander, L. Heberlie, C. Smith, P. Statler, and D. Wildharber. 1999. Soil genesis on felsic rocks in the St. Francois Mountains. I. The role of saprolite and its influence on soil properties. *Soil Sci.*164:428-439.
- Aide, M.T., L. Heberlie, P. Statler. 1999. Soil genesis on felsic rocks in the St. Francois Mountains. II. The Distribution of elements and their use in understanding elemental loss during genesis. *Soil Sci.*164:1-14.
- Aide, M.T., and C.C. Smith. 2001. Soil genesis on peralkaline felsics in Big Bend National Park. *Soil Sci.* 166:209-221.
- Aide, M.T., and M. Cummings. 2001. The influence of pH and phosphorus on the adsorption of chromate on smectites having synthetic hydroxy-Al interlayers. *Trans. Missouri Acad. Sci.* 35:17-23.

- Aide, M.T., and Ken McCarty. 2002. The response of soil structure to liming and controlled burning. *Trans. Missouri Acad. Sci.* 36:[accepted].
- Aide, M.T., and A. Marshaus. 2002. Fragipan genesis in two Alfisols in east central Missouri. *Soil Sci.* 167: 453-464.
- Aide, M.T., and Z. Pavich. 2002. Rare earth element mobilization and migration in a Wisconsin Spodosol. *Soil Sci.* 167:680-691.
- Aide, M.T., C. Aide, J. Dolde, and C. Guffey. 2002. Geochemical indicators of external additions to soils in Big Bend National Park, Texas. *Soil Sci.* 168:200-208.
- Aide, M.T., and G. J. Cwick. 2002. Elemental analysis of Brunisolic soils from the Glacial Lake Agassiz region of Manitoba, Canada. *Missouri Academy Science.* 36:49-54.
- Dunn, D., G. Stevens, M. Aide, and J. Horn. 2002. The effect of soil pH and zinc on rice cultivars in Missouri. *Trans. Missouri Acad. Sci.* 36: 25-28.
- Aide, M.T., and C. Smith-Aide. 2003. Assessing soil genesis using rare earth element analysis. *Soil Sci. Soc. Am. J.* 67:1470-1476.
- Aide, M.T., Z. Pavich, M.E. Lilly, R. Thorton, and W. Kingery. 2004. Plinthite formation in the coastal plain region of Mississippi. *Soil Sci.* 169:613-624.
- Dunn, D.J., J.A. Wrather, W.E. Stevens, M.K. Kenty, D.H. Beighley, and M.T. Aide. 2004. Measuring K in rice basal stem sap with a Cardy meter. *Crop Management* doi:10.1094/CM-2004-1006-01-RS..
- Aide, M.T., D. Beighley, W. Mueller, D. Dunn, and G. Stevens. 2004. Growth effects of corn in rotation with rice. *Missouri Acad. Sci.* 38:8-15.
- Aide, M.T., J. Alsup, N. Goldschmidt, B. Hawkins, M. Laux, R. Layton., J. Murphy, B. Pearson, B. Schmid, and J. Wilson. 2004. Nitrogen assessment in rice using hyperspectral assessment. *Missouri. Acad. Sci.* 38:46-51.
- Aide, M.T. 2005. Elemental composition of soil nodules from two Alfisols on an alluvial terrace in Missouri. *Soil Sci.* 170:1022-1033.
- Aide, M.T. 2005. Geochemical assessment of vanadium and iron in oxic soil environments. *J. Soil Sed. Contam.* 14:403-416.
- Panno, B.A., P. Johnson, M. Aide, and M.P. Fasnacht. 2006. Using Li⁺ extracted from soils at clandestine methamphetamine labs to estimate methamphetamine production. *J. Clandestine Lab. Investigating Chemists Association* 16:7-13.
- Aide, M.T., D. Dunn, and G. Stevens. 2006. Fragiudults genesis involving multiple parent materials in the eastern Ozarks of Missouri. *Soil Sci.* 171:1-9.
- Aide, M.T. and D. Beighley. 2006. Hyperspectral reflectance monitoring of rice grown under different nitrogen regimes. *Transactions Missouri Academy Sci.* 40:6-11.
- Aide, M.T. and D, Huff. 2007. Lead and phosphorus interactions in equilibrated soil suspensions. *Soil Sci.* 172:790-796.
- Aide, M.T., K. Whitener, E. Westhoff and J. Kelly. 2008. Effectiveness of triple superphosphate amendments in alleviating soil lead accumulation in Missouri Alfisols. *Soil Sediment Contamination* 17:630-642.
- Aide, M.T. 2009. Three Missouri Alfisols impacted by aeolian deposition of Pb-Zn-Cd-Ag bearing mine tailings. *Soil*

Sediment Contamination. 18:43-54.

Aide, Michael and I. Braden. 2009. Inter-horizon transport of elements in Ultisols developed in a loess mantle mixed with rhyolite residuum in the St. Francois Mountains of Missouri. *Soil Sci.* 174:210-219.

Aide, M., I. Braden, W. Mueller. 2008. Estimating water flow in drainage pipes. *Transactions Missouri Academy Sci.* 42: 11-13.

Aide, M., W. Mueller, and I Braden. 2009. Iron-scandium relationships in soils. *Applied and Environmental Soil Sci.* 2009:1-8

Aide, M.T., and M. Fasnacht. 2010. Estimating trace element availability in soils having a seasonal water table using commercially available protocols. *Comm. Soil Sci. and Plant Anal.* 41:1159-1177. (doi: 10:1080/00103621003721379

Michael Aide, Indi Braden, Neil Hermann, David Mauk, Wesley Mueller, Paul Schnare, Sven Svenson, and Julie Weathers. 2011. Assessment of a Large Subsurface Controlled Drainage and Irrigation System: I. Design, Soil Properties, and Attendant Crop Performance. *Transactions Missouri Academy Science.* 44: 1-7

Michael Aide, Indi Braden, Neil Hermann, David Mauk, Wesley Mueller, Paul Schnare, Sven Svenson, and Julie Weathers. 2011. Assessment of a Large Subsurface Controlled Drainage and Irrigation System: II. Corn Performance. *Transactions Missouri Academy Science* 44: 8-11

Michael Aide, Indi Braden, Neil Hermann, David Mauk, Wesley Mueller, Paul Schnare, Sven Svenson, and Julie Weathers. 2011. Assessment of a Large Subsurface Controlled Drainage and Irrigation System: III. Water chemistry of the tile effluent and its potential impact on surface water resources. *Transactions, Missouri Academy Science.* 44:11-17

Svenson, S.; M.T. Aide, D. Dunn. 2011. Evaluation of potato nutrient uptake under center pivot irrigation in southeastern Missouri. *Transactions, Missouri Academy Science.* 44: (under Review)

Svenson, S.; M.T. Aide, D. Dunn. 2011. Evaluation of nitrate leaching in a commercial potato field under center pivot irrigation in southeastern Missouri. *Transactions, Missouri Academy Science.* (under Review)

Aide, Michael, Indi Braden, Neil Hermann, David Mauk, Wesley Mueller, Sven Svenson, and Julie Weathers. 2011. Using Lanthanum, neodymium and thorium as conservative indexing elements to indicate soil lead deposition. *Soil and Soil Contamination.* 22:132-150.

Aide, Michael.T., and Christine C. Aide. 2012. Rare earth elements: Their importance in understanding soil genesis. *Intern. Scholarly Res. Network (ISRN Soil Science)* 2012: article ID783876 doi:10.5402/2012/783876.

Aide, Michael T., D. Beighley, and D. Dunn. 2013. Soil profile arsenic concentration distributions in Missouri soils having cambic and argillic soil horizons. *Soil Sediment Contamination.* 23:313-327.

Aide, Michael T., D. Beighley, and D. Dunn. 2014. Soil profile thorium and uranium concentration distribution in southeastern Missouri soils. In Renae Jamison, (Ed) *Thorium, Chemical Properties, Uses, and Environmental Effects.* NOVA Publishers, NY.

Aide, Michael T., D. Beighley, and D. Dunn. 2016. Arsenic in the Soil Environment: A Soil Chemistry Review. *International J. Applied Agriculture Research.* 11: 1-28. ISSN 0973-2683.

Aide, Michael T., D. Beighley, and D. Dunn. 2016. Zinc and cadmium soil profile distributions and uptake by rice (*Oryza sativa* L.) in southeastern Missouri. *International J. Appl. Agric. Research* 11:29-45.

Aide, Michael T., D. Beighley, and D. Dunn. 2016. Arsenic uptake by rice (*Oryza sativa* L.) having different irrigation regimes involving two different soils. *International J. Appl. Agric. Research* 11:71-81.

Aide, M.T., I. Braden, H. Clark, S. Lowman, D. Mauk, B. McVay, W. Mueller, S. Svenson, and J. Weathers. 2016. Variation in Redoximorphic Features of Four Adjacent Inceptisols. *International Journal of Applied Agricultural Research* 11:129-141.

Aide, M.T., and W. Mueller. 2016. Nutrient uptake of five sweet sorghum varieties to estimate harvest removal rates. *International J. Appl. Agric. Research* 11:159-171.

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Aide, M.T. 2017. Chemical thermodynamics of uranium in the soil environment. .Pp. 1 to 20. *In* Uranium, InTech. Rijeka, Croatia.," ISBN 978-953-51-5792-2

Aide, M.T. 2018. Comparison of delayed flood and furrow irrigation regimes in rice to reduce arsenic accumulation. *International J. Applied Agricultural Research* 13:1-8. ISSN 0973-2683

Aide, M.T. and I.S. Braden. 2018. Lead sequestration in the soil environment with an emphasis on the chemical thermodynamics involving phosphate as a soil amendment: Review and simulations. *International J. Applied Agricultural Research* 13:9-19. ISSN 0973-2683

Aide, M.T. 2018. Lanthanide soil chemistry and its importance in understanding soil pathways: Mobility, plant uptake and soil health. *In* Lanthanides. InTech. Rijeka, Croatia.

Underlined name indicates senior author.

TECHNICAL REPORTS:

Aide, M. T. and N. Tibbs. 1986. The effect of chromium contamination of a waste site in Malden, MO. Division of Environmental Quality, State of Missouri.

Aide, M. T. and N. Tibbs. 1987. Extent of chromium deposition at Dexter, MO. Division of Environmental Quality, State of Missouri.

Aide, M. T. and N. Tibbs. 1987. The effects of various rates of fly ash and sludge on the uptake of plant essential metals by soybeans. Sikeston Power.

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Aide, M. T. and A. Robertson. 1990. Effects of temperature on rice growth. Missouri Rice Producer's Conf., Poplar Bluff, MO.

- Aide, M. T. and J. Hinni. 1991. Departmental objectives and their linkage with the University Studies Program. 11th Lilly Conference on College Teaching. Miami, OH.
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- Aide, M.T., B. Allen, T. Duncan, A. Elledge, M. Ellerbush, and A. Huskey. 1995. Preliminary screening of three floodplain soils in the vicinity of Cape Girardeau, Missouri, for toxic levels of metals. Presented City Manager, City Cape Girardeau, MO.
- Aide, M.T. 1996. Effects of nitrogen source and potassium fertilization on dry seeded rice. Missouri Rice Producers Annual Meeting. Dexter, MO.
- Aide, M.T. 1997. Effects of phosphorus and potassium fertilization on the growth of dry seeded rice. Missouri Rice Producers Annual Meeting. Dexter, MO.
- Aide, M.T. 1997. Soil data from the English Hill Fault Zone. U.S.G.S., Reston, Virginia. (Contact person - Richard Harrison).
- Picker, J., R. Skidmore, and M.T. Aide. 1998. Effects of phosphorus and potassium fertilization on the growth of dry seeded rice. Missouri Rice Producers Annual Meeting. Dexter, MO.
- Aide, M.T., A.L. Elledge, M.A. Wilson. 1998. Nitrate leaching involving irrigated potatoes on sandy terraces in southeast Missouri. USDA-NRCS, Dexter, MO.
- Aide, M.T., T. Burke, and J. Taylor. 1998. Nutrient uptake in irrigated potatoes in southeast Missouri. Technical report presented to potato producers of southeastern Missouri.
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- Aide, M.T., K. Anderson, M. Palmieri, C. Smith, J. Thompson, S. Tomlinson, J. Waldharber. 1999. Lead deposition on Taum Sauk Mountain in Missouri. USEPA. {Dr. Secrest, Washinton DC.}
- Aide, M.T., W. Mueller, D. Beighley, D. Dunn, and G. Stevens. 2003. Rotation of cotton with rice. Missouri Rice Producers Annual Meeting. Dexter, MO.
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- Aide, M., I Braden, W. Ellis, N. Hermann, and W. Mueller. 2009. Assessment of the Soils at the Crop Science Unit of the Agricultural Research Center at Southeast MO State University. ARC Website.

Aide, M., I. Braden, W. Ellis, N. Hermann, and W. Mueller. 2009. The Influence of Plant Populations on the yield of corn and soybeans grown on a silt loam soil having controlled drainage and irrigation. ARC Website.

Aide, M., I. Braden, W. Ellis, N. Hermann, and W. Mueller. 2009. Soil and water quality assessment at the crop science unit of the David M. Barton Agricultural Research Center of Southeast MO State University. ARC Website.

Aide, M.T., D. Beighley, L. Taylor, and K. Withers. 2011. Water and soil resources in southeastern Missouri: An emphasis on rice (*Oryza sativa* L.) production. Commissioned by Missouri Rice Research and Merchandizing Council.

Aide, M.T., and C.C. Aide. 2013. The soil resource of the Miller Reserve. Commissioned by the Miller Reserve Steering Committee.

Aide, M.T., D. Beighley, and D. Dunn. 2013. Furrow irrigated and drill seeded-delayed flood irrigated rice: Assessment of rice agronomic performance, economic differences, and arsenic accumulation rates. Commissioned by Missouri Rice Producers.

Aide, M.T., and D. Beighley. 2015. The Influence of Gypsum and Polysulfate on the Agronomic Performance of Rice (*Oryza sativa* L). ICL, St. Louis , MO.

Aide, M.T., and D. Beighley. 2015. The Influence of Gypsum and Polysulfate on the Agronomic Performance of Wheat (*Triticum aestivum* L). ICL, St. Louis , MO.

Aide, M.T., and D. Beighley. 2015. The Influence of Gypsum and Polysulfate on the Agronomic Performance of Soybeans (*Glycine max.* (L.) Merr). ICL, St. Louis , MO.

Aide, M.T. and D. Beighley. 2016. Comparison of delayed flood and furrow irrigated rice for yield components and nutrient uptake. Missouri Rice Research Update. Missouri Rice Research and Merchandising Council.

Aide, M.T. and D. Beighley. 2016. Missouri rice nitrogen variety trial. Missouri Rice Research Update. Missouri Rice Research and Merchandising Council.

Aide, M.T. 2016. The economics of the rice industry in Missouri. Missouri Rice Research Update. Missouri Rice Research and Merchandising Council.

Aide, M.T. 2016 Water resources across southeastern Missouri. Missouri Rice Research and Merchandising Council

Aide, M.T. 2016 The value of agriculture and agribusiness in southeastern Missouri. Missouri Rice Research and Merchandising Council.

Aide, M.T. and I, Braden. 2017. Tile drain and denitrification bioreactor nitrate and ammonium analysis from the crop science unit at the David M. Barton Agricultural Research Center. Provide to USEPA, Washington. DC.

Aide, M.T. and I. Braden. 2017. Polysulfate Application to a Cover Crop–Soybean–Cover Crop-Corn Rotation. Provide to International Potash Institute, Switzerland.

PRESENTATIONS:

Aide, M. T. and V. E. Nash. 1979. Characterization of reaction products between a smectite and solutions of aluminum, iron, and silicon at varying pH values. Presented at the 71st Annual Meeting of the American Society of Agronomy. Fort Collins, Colorado.

- Aide, M. T. 1982. No-Till Farming -- Implications of the New Farm Bill. District Young Farmers Meeting. Southeast Missouri State University.
- Aide, M. T. 1984. The classification and genesis of two ultisols in Iron County, Missouri. Missouri Academy of Science Annual Meeting. Cape Girardeau, Missouri.
- Aide, M. T. 1985. Soil erosion and ground water. Cape Girardeau Public Forum on Groundwater. Sponsored by the Coalition for the Environment and the League of Women Voters. Southeast Missouri State University.
- Blankenship, B. and M. T. Aide. 1985. The yield characteristics of two soybean varieties grown at two different row spacings. Missouri Academy of Science: Annual Meeting, Springfield Missouri.
- Aide, M. T. 1985. Concretions in the soil environment. Annual Meeting of the Missouri Association of Professional Soil Scientists. Poplar Bluff, Missouri.
- Aide, M. T. and P. Wells. 1986. The interaction of chromium (VI), phosphorus and potassium in growth and leaf tissue concentrations of orchardgrass (Dactylus glomerata L.). Missouri Academy of Science Annual Meeting. Warrensburg, Missouri.
- Aide, M. T., B. Brown, and K. Gregg. 1986. Genesis of fragipan soils in St. Francois and Ste. Genevieve Co., Missouri. Missouri Academy of Science Annual Meeting. Warrensburg, Missouri.
- Aide, M. T. and Beth Baiken. 1986. Analysis of five soil series in Iron County, Missouri. Missouri Academy of Science Annual Meeting. Warrensburg, Missouri.
- Aide, M. T. 1986. The distribution of soils from Ste. Genevieve and St. Francois Counties, Missouri. Seventh Annual Science and Technology Symposium. Southeast Missouri State University.
- Aide, M. T., N. Tibbs, and S. Randall. 1986. Does land disposal of Farmington's sewage sludge increase trace element availability in affected soils. Poster session at College of Science and Technology Symposium. Southeast Missouri State University.
- Aide, M. T. 1987. Soil Development on Taum Sauk Mountain. Missouri Association of Professional Soil Scientists--Fall meeting. Invitational speaker concerning research conducted on Taum Sauk Mountain.
- Aide, M. T. 1987. Ultisol Formation on Taum Sauk Mountain. Probauger.
- Aide, M. T. 1987. The top one inch of soil. Eighth Annual Science and Technology Symposium. Southeast Missouri State University.
- Aide, M. T., N. H. Tibbs and D. C. Pendergrass. 1987. Chromium mobility in a sandy soil contaminated by aluminum etching waste fluids, Malden, MO. Missouri Academy of Science Annual Meeting. Lincoln, Missouri.
- Aide, M. T. and N. Tibbs. 1987. Assessment of chromium toxicity in the soil environment. Sigma Xi. Southeast Missouri State University.
- Aide, M. T. 1988. Computer simulation of the apparent thermal diffusivity in an introductory soils laboratory. College of Science and Technology Symposium. Southeast Missouri State University.
- Aide, M. T. and N. Tibbs. 1988. Cobalt, Ni, and Cu accumulations in Fe and Mu Masses removed from soils. Missouri Academy of Science Annual Meeting. Northeast Missouri State University.

- Aide, M. T. 1989. The biology of the top inch of soil. 1989 KSAM Conference. Southeast Missouri State University.
- Aide, M. T. 1989. Sodium in certain Bootheel Subsoils. Missouri Rice Producers' Conference. Dexter, MO.
- Aide, M. T. and A. Robertson. 1989. The effects of temperature on the growth of rice. Tenth Annual Science and Technology Symposium. Southeast Missouri State University.
- Aide, M. T. and W. Ellis. 1990. Teaching professionalism in the Agriculture Club. American Society Agronomy-North Central Annual Meeting. University of Minnesota, St. Paul
- Wilson, Mack A. and Michael T. Aide. 1990. Growth responses of "Norchip" and "Atlantic" potatoes as influenced by four row cover systems. Eleventh Annual Science and Technology Symposium, Southeast Missouri State University.
- Wilson, Mack A. and Michael T. Aide. 1990. Influence of four row covers on the production of broccoli and cabbage. Eleventh Annual Science and Technology Symposium, Southeast Missouri State University.
- Wilson, Mack A. and Michael T. Aide. 1990. Yield of fall planted broccoli and cabbage as influenced by several row covers. Missouri Academy of Science Annual Meeting.
- Wilson, Mack A. and Michael T. Aide. 1991. Use of several crop covers in influencing yield of Bell Peppers. Missouri Academy Science Annual Meeting. Westminster College.
- Aide, M. T., K. Moore, J. Nicholas, G. R. Ravichandren and J. Thompson. 1992. Soil genesis in rhyolite residuum in the St. Francois Mountains. Missouri Academy Science Annual Meeting.
- Aide, M. T. 1994. Using EXAFS and XANES spectroscopy to determine the local molecular environment of chromium in contaminated soil. Missouri Academy Science Annual Meeting. Southeast Missouri State University.
- Aide, M. T. 1994. Chromium(VI) adsorption and reduction in soils. Missouri Academy Science Annual Meeting. Southeast Missouri State University.
- Porter, Leston and M.T. Aide. 1994. Exploratory study of the effects of cobalt leachate from a mine site in Madison County, Missouri. Missouri Academy Science Annual Meeting. Southeast Missouri State University.
- Aide, M.T., A. Elledge., M. Ellerbusch, J. Fairbanks, K. Grimes, H. Reimold, C. Stokes, R. Sullivan, G. Young. 1995. Clay mineral formation in reddish clay soils overlying dolomitic limestone in Bollinger Co., Missouri. Missouri Academy of Science Annual Meeting. Northwest Missouri State University.
- Aide, M.T., and J. Wilson. 1995. Effects of nitrogen source and potassium on dry seeded rice. Missouri Academy Science Annual Meeting. Northwest Missouri State University.
- Elledge, A., and M.T. Aide. 1995. Chromium(VI) adsorption isotherms and leaching potential studies. Missouri Academy Science Annual Meeting. Northwest Missouri State University.
- Aide, M., J. Aufdenberg, M. Beemer, M. Johnson, C. Nelson, B. Neumeyer, J. Staab, and M. Welch. 1995. Partitioning of zinc in selected soils having differing levels of organic matter and its influence on the growth of rice seedlings. Southeast Missouri State University Student Research Conference.
- Aide, M., M. Albrecht, B. Allen, R. Engelen, M. Johnson, J. Ohlms, A. Phillips, and J. Wilson. 1995. Characterization of two sodic soils in southeast Missouri. Southeast Missouri State University Student Research Conference.
- Aide, M.T. 1995. Ammonium sulfate, urea and potassium comparisons in rice. Missouri Rice Producers Field Day. Missouri

Rice Research Station, Dunklin, Co., MO.

Aide, M.T. 1995. Adsorption of chromium(VI) on synthetic aluminum and chromium(III) interlayered smectites. Geologic Society America., New Orleans, LA.

Albrecht, M., Aide, M., and G.J. Cwick. 1996. The use of landsat TM data to isolate sodium accumulation in selected soils of Stoddard County, Missouri. Missouri Academy Science, Annual Meeting, Springfield, MO.

Cwick, G.J., and M. Aide. 1996. Use of hyperspectral and biogeochemical data to assess the influence of the substrate on coniferous trees at NASA's northern Boreas site. Winnipeg 96: Joint Annual Meeting of the Geological Society of Canada and the Mineralogical Association of Canada. Univ. Manitoba, Canada.

Aide, M., and G.J. Cwick. 1996. Assessment of nutrient and selected transition metal availability from soils derived from laminated silty sediments at NASA's northern Boreas site. Winnipeg 96: Joint Annual Meeting of the Geological Society of Canada and the Mineralogical Association of Canada. Univ. Manitoba, Canada.

Allen, B., and M. Aide. 1996. Metal distribution in alluvial soils having a fluctuating water table. Missouri Academy of Science Annual Meeting, Springfield, MO.

Aide, Michael. 1996. Potassium selectivity in reference and soil clays. Missouri Academy Science Annual Meeting, Springfield, MO.

Aide, M., B. Allen, T. Duncan, A. Elledge, Mark Ellerbusch, Amy Huskey. 1996. Preliminary screening of three floodplain soils of the Mississippi River in the vicinity of Cape Girardeau, Missouri, for toxic levels of metals. Missouri Academy Science Annual Meeting, Springfield, MO.

Aide, M., M. Fortner, T. Griffin, B., Johnson, L. Lawson, T. Poore, R. Romine, and J. Stabb. 1996. Assessment of nitrate leaching potential of four well to excessively well drained sandy textured soils under center-pivot irrigation. Southeast Missouri State University Student Research Conference. Cape Girardeau, MO.

Allen, B., and M.T. Aide. 1996. Genesis and metal segregation in concretions from soils having a fluctuating water table. Geological Soc. America, Denver, CO.

Elledge, A., and M.T. Aide. 1996. Predicting nitrate leaching in irrigated alluvial sands and validating the national NLEAP model. Geological Soc. America, Denver, CO.

Picker, J., and M.T. Aide. 1997. The influence of potassium and phosphorus fertilization on dry seeded rice. Missouri Academy Science Annual Meeting, Central Missouri State University, Warrensburg, MO.

Allen, B., and M. T. Aide. 1997. Genesis and metal segregation in concretions from soils having a fluctuating water table. Missouri Academy Science Annual Meeting, Central Missouri State University, Warrensburg, MO.

Elledge, A., and M.T. Aide. 1997. Predicting nitrate leaching in irrigated alluvial sands and validating the national NLEAP model. Missouri Academy Science Annual Meeting, Central Missouri State University, Warrensburg, MO.

Holt, B., A.L. Elledge, and M. Aide. 1997. Using NLEAP to predict nitrate leaching. Missouri Academy Science Annual Meeting, Central Missouri State University, Warrensburg, MO.

Cummings, M., and M.T. Aide. 1997. The adsorption of chromium(VI) on hydroxy-Al interlayered smectite. Missouri Academy Science Annual Meeting, Central Missouri State University, Warrensburg, MO.

Elledge, A., and M.T. Aide. 1997. Predicting nitrate leaching in irrigated alluvial sands and groundwater using NLEAP. 42nd

Annual Groundwater Conference. Coralville, Iowa.

Cummings, M.F., and M.T. Aide. 1997. Ortho-phosphate interaction with Cr(VI) isotherms on aluminum-interlayered smectites and synthetic allophane. American Society Agronomy Annual Meeting. Los Angeles, CA.

Skidmore, R.B., and M.T. Aide. 1998. Potassium and phosphorus nutrition in rice. Missouri Acad. Sci. Annual Meeting, St. Joseph, Missouri.

Lough, J., and M.T. Aide. 1998. The application of coal ash to soil: A greenhouse evaluation. Missouri Acad. Sci. Annual Meeting, St. Joseph, Missouri.

Statler, P., M. Cummings, M. Jarvis, M. Stallins, H. Tibbs, and M. Aide. 1998. Paleosol development and seismicity as a soil forming factor. Missouri Acad. Sci. Annual Meeting, St. Joseph, Missouri.

McDowell, E., and M. Aide. 1998. Soil genesis on alluvial fans in the Wind River Basin in Wyoming. Missouri Acad. Sci. Annual Meeting, St. Joseph, Missouri.

Cummings, M., and M. Aide. Phosphate interaction with Cr(VI) isotherms on aluminum-interlayered smectites and synthetic allophane. Missouri Acad. Sci. Annual Meeting, St. Joseph, Missouri.

Albrecht, M., G. Cwick, and M. Aide. 1998. An attempt to map fragipans using vegetational differences and satellite imagery. Missouri Acad. Sci. Annual Meeting, St. Joseph, Missouri.

Peters, L., and M. Aide. 1998. Nitrate monitoring in potatoes. Missouri Acad. Sci. Annual Meeting, St. Joseph, Missouri.

Cwick, G.J., and M.T. Aide. 1998. Characterization of landscape conditions in central Manitoba from analysis of biochemical and biophysical data. GAC/MAC, Quebec City, Canada.

M.T. Aide, and G.J. Cwick. 1998. The clay mineralogy of varved clays in the glacial Lake Agassiz region of central Manitoba., Canada. GAC/MAC, Quebec City, Canada.

Dunn, David, Gene Stevens, Michael Aide, Blake Burger, and Landon LaGrand. 1999. The partitioning of zinc in three rice varieties. Missouri Academy of Science Annual Meeting, Southeast Missouri State University, Cape Girardeau, MO.

Aide, M.T., Taylor Burke, and Jason Taylor. 1999. Nutrient uptake in irrigated potatoes in southeast Missouri. Missouri Academy of Science Annual Meeting, Southeast Missouri State University, Cape Girardeau, MO.

Aide, M.T., Lloyd Heberlie, and Phillip Statler. 1999. Preliminary report on the effects of controlled burning on soil properties and soil erosion potential. Missouri Academy of Science Annual Meeting, Southeast Missouri State University, Cape Girardeau, MO.

Aide, M.T. Lloyd Heberlie, and Phillip Statler. 1999. Soil genesis involving felsic saprolite materials in the St. Francois Mountains. Missouri Academy of Science Annual Meeting, Southeast Missouri State University, Cape Girardeau, MO.

Guffey, C.J. and M. T. Aide. 1999. Colluvium: Parent material of soils on Mudlick Mountain, Southeastern Missouri. Missouri Academy of Science Annual Meeting, Southeast Missouri State University, Cape Girardeau, MO.

Cwick, G.J., and M.T. Aide. 1999. Examination of soil and vegetation for microseepage effects at a gas production site in Wyoming. Am. Assoc. Petroleum Geol., Rocky Mountain Section. Bozeman, Montana.

Aide, M.T. 1999. Zinc: foliar versus soil application. Missouri Rice Farm Field Day. Glennonville, Missouri.

Aide, M.T., K. Anderson, M. Palmieri, C. Smith, J. Thompson, S. Tomlinson, J. Waldharber. 1999. Lead deposition on Taum Sauk Mountain in Missouri. Madison Co., Open Meeting.

Smith, C., M. Aide, K. Anderson, M. Palmieri, S. Tomlinson, and D. Wildharber. 2000. Soil genesis on rhyolite in the St. Francois Mountains. Missouri Academy of Science Annual Meeting, University Missouri - Columbia, Columbia, MO.

Anderson, K., M. Aide, C. Smith, M. Palmieri, S. Tomlinson, and D. Wildharber, J. Thompson. 2000. Survey of heavy metal deposition on floodplains of the Mississippi River. Missouri Academy of Science Annual Meeting, University Missouri - Columbia, Columbia, MO.

Smith, C.C., and M.T. Aide. 2000. Isolating parent materials in soils using elemental loss rates and rare earth elements. Geological Soc. America. Reno, NV.

Aide., M.T. 2000. Phosphorus and zinc in rice. Missouri Annual Rice Producers Conference. Dexter, MO.

Aide, M.T., 2001. Fragipan formation and the role of silicon. Missouri Academy Science Annual Meeting, Springfield, MO.

Aide, M.T., and C. Guffey. 2001. Differences in chemical properties of sized aggregates from two soils derived from loess on Taum Sauk Mountain. Missouri Academy Science Annual Meeting, Springfield, MO.

Aide, M.T. 2001. Corn after rice. Missouri Rice Producers Annual Meeting, Dexter, MO.

Aide, M.T. 2001. Fragipan formation and the role of silicon. Missouri Academy of Science Annual Meeting, Joplin, MO.

Guffey, C., and M.T. Aide. 2001. Differences in chemical properties of sized aggregates from two soils derived from loess on Taumsauk Mountain. Missouri Academy of Science Annual Meeting, Joplin, MO.

Aide, M.T. 2002. Corn after rice. Missouri Rice Producers Annual Meeting, Dexter, MO.

Aide, M.T. 2002. Rare earth element migration in a Wisconsin Spodosol. Missouri Academy of Science Annual Meeting, Springfield, MO.

Aide, M.T. 2002. Soil effects of prescribed fire in woodland restoration. Society for Range Management, Kansas City, MO.

Aide, M.T. and Zack Pavich. 2002. Rare earth element mobility in a Wisconsin Spodosol. Am. Soc. Soil Sci. Annual Meeting, Indianapolis, IN.

Smith, C. and M.T. Aide. 2002. Influence of soil aspect on soil genesis in a semi-arid climate. Am. Soc. Soil Sci. Annual Meeting, Indianapolis, IN.

Aide, M.T. 2003. Water quality and paddy water discharge. Missouri Rice Producers Annual Meeting. Dexter, MO.

Aide, M., W. Mueller, D. Beighley, D. Dunn, and G. Stevens. 2003. Rotation of Cotton with Rice. Missouri Rice Producers Annual Meeting. Dexter, MO.

Basch, M., N. Tanksley, C. Aide, M. Aide. 2003. Effects of coal bed-methane discharge waters on soil. Geol. Soc. Am. - Joint meeting of south central and southeastern sections, Memphis, TN.

Aide, M.T. 2003. The benefits of an articulation agreement between land grant and state universities. Missouri Academy of Science Annual Meeting. Warrensburg, Missouri.

- Aide, M.T., C. Aide, A. Anamika, and N. Tanksley. 2004. Soil sustainability and coal-bed methane discharge water. Combined Montana and Wyoming Chapter Soil and Water Conservation Society. Billings, Montana.
- Aide, M., D. Beighley, D. Dunn, and G. Stevens. 2004. Water quality and paddy water discharge. Missouri Rice Producers Annual Meeting. Dexter, MO.
- Aide, M.T., and C. Aide. 2004. Using rare earth elements to determine the possibility of aeolian contributions in semi-arid soils. Geol. Soc. Am., Denver, CO.
- Aide, M.T. 2005. Analysis of lead-zinc contamination in soils from mine-tailings. Missouri Academy Science Annual Meetings, Jefferson City, MO.
- Dunn, D.J., B. Ottis, J.A. Wrather, W.E. Stevens, D. Beighley, and M.T. Aide. 2006. Can we predict rice yields using spectral reflectance at midseason. Rice Workers Technical Working Group, Houston, TX.
- Aide, M.T., and K. Davidson. 2006. Phosphorus, lead and EDTA interactions in Spodosol soil horizons. Missouri Academy Sci., Annual Meeting, Truman State University, Kirksville, MO.
- Aide, M.T. [Invited Speaker]. 2006. The Sandbur series. 26th Annual Central States Forest Soils Workshop. Carter Co., MO.
- Aide, M.T. 2007. The geochemistry of mercury and other selected elements in soils having a seasonal water table at Mingo National Wildlife Refuge. Annual Meeting Missouri Academy Science. St. Joesph, MO.
- Aide, M.T. 2007. Poultry litter as an alternative N source. Missouri Rice Producers Field Days, Glennonville, MO.
- Aide, M., W. Hargraves, J. Rhomberg, and K. Scritchfield. 2008. Ultisol genesis on colluvial materials in the St. Francois Mountains in Missouri. Missouri Academy Sci., Annual Meeting, Missouri Southern State University, Joplin, MO.
- Aide, Christine., and Michael Aide. 2008. Newly developing sinkhole field in an urban setting. . Missouri Academy Sci., Annual Meeting, Missouri Southern State University, Joplin, MO.
- Aide, M.T. 2008. Poultry litter as an alternative N source. Missouri Rice Producers Field Days, Glennonville, MO.
- Aide, M.T. 2008. Soil management. Crop advisors conference, Delta Research Center, Portageville, MO.
- Aide, M. and W. Mueller. 2008. Understanding rare earth elements and soil genesis. American Society Agronomy Annual Meeting. Houston, TX.
- Aide, M.T., W. Ellis, W. Mueller, I. Braden, N. Hermann. 2009. Corn and soybean yield components grown on a controlled drainage/irrigation system. Missouri Academy Science Annual Meeting
- Aide, M.T., W. Ellis, W. Mueller, I. Braden, N. Hermann. 2009. Corn and soybean nutrient accumulations grown on a controlled drainage/irrigation system. Missouri Academy Science Annual Meeting
- Michael Aide, Christine Aide, Deanna Deere, Kate Whitener, Mandi Wood. 2009. Black carbon in soils. Missouri Academy Science Annual Meeting
- Aide, M. and C. Aide. 2009. Charcoal and boron availability. American Society Agronomy Annual Meeting. Pittsburg, PA.
- Braden, I., W. Mueller, M. Aide. 2009. Involving undergraduate students in research and management at the Agriculture Research Center. American Society Agronomy Annual Meeting. Pittsburg, PA.

Braden, I., W. Mueller, M. Aide. 2009. Evaluation of a crop growth model for irrigated crops. American Society Agronomy Annual Meeting. Pittsburg, PA.

Aide, M., W. Mueller, I. Braden, and N. Hermann. 2010. Corn and soybean growth on a controlled subsurface drainage irrigation system. Annual Meeting Missouri Academy Science. Springfield, MO.

Aide, M., W. Mueller, I. Braden, and N. Hermann. 2010. Micronutrient concentrations in tile-drain effluents. Annual Meeting Missouri Academy Science. Springfield, MO.

Aide, M., W. Mueller, I. Braden, and N. Hermann. 2010. Nitrate concentrations in tile-drain effluents. Annual Meeting Missouri Academy Science. Springfield, MO.

Aide, M., S. Svenson, and D. Dunn. 2010. Potato nutrient uptake patterns. Annual Meeting Missouri Academy Science. Springfield, MO.

Aide, M., G. Stevens, and D. Dunn. 2010. Comparing in field distribution of zinc and phosphorus in plant and soil resulting from applications of mixed and compost fertilizers. Annual Meeting Missouri Academy Science. Springfield, MO.

Aide, M.T. 2010. Using nitrogen stabilizers to effectively limit rice paddy water nitrate accumulation. Missouri Rice Producers Conference. Dexter, MO.

Aide, M.T. 2010. Nitrogen management studies at Southeast Missouri State Univ. Rice Nitrogen Management Field Day 2010. Missouri Rice Research Farm, Glennonville, MO.

Aide, M., W. Mueller, I. Braden, and N. Hermann. 2010. Corn and soybean growth on a controlled subsurface drainage irrigation system. American Society Agronomy. San Diego, CA.

Aide, M., W. Mueller, I. Braden, and N. Hermann. 2010. Micronutrient concentrations in tile-drain effluents. American Society Agronomy. San Diego, CA.

Aide, M., W. Mueller, I. Braden, and N. Hermann. 2010. Nitrate concentrations in tile-drain effluents. American Society Agronomy. San Diego, CA.

Aide, M.T., S. L. Taylor, D. Dunn, J. Henggeler. 2011. Water Resources in southeastern Missouri. Annual Meeting Missouri Academy Science. Jefferson City, MO.

Michael Aide, Donn Beighley, Indi Braden, Sam Duncan, David Mauk, Wesley Mueller, Paul Schnare, Sven Svenson, Julie Weathers. 2011. Transforming a department of agriculture. Annual Meeting Missouri Academy Science. Jefferson City, MO.

Aide, M. 2011. Controlled subsurface drainage. Certified Crop Advisor Conference. Univ. Missouri Fisher Delta Center. Portageville Missouri.

Aide, M.T. and D. Withers. 2012. A survey of water resources in southeastern Missouri. Annual Meeting Missouri Academy Science. University Missouri-Columbia, MO.

Michael Aide, Donn Beighley, Indi Braden, Sam Duncan, David Mauk, Wesley Mueller, Sven Svenson, Julie Weathers. (Poster). 2012. Transforming a department of agriculture. Annual Meeting Missouri Academy Science. University Missouri-Columbia, MO.

Aide, M.T. and S. Duncan. 2012. Cultivating a philanthropic culture to promote a supportive network of benefactors. Annual Meeting Missouri Academy Science. University Missouri-Columbia, MO.

Weathers, J., Wesley Mueller, David Mauk, Indi Braden, Sven Svenson, Michael Aide (Poster). 2012. Creating an animal science option in an agribusiness curriculum. Annual Meeting Missouri Academy Science. University Missouri-Columbia, MO.

Aide, M.T. 2013. Farm profitability and environmental stewardship. 21st Century Agriculture: Winter cover crops and water management. Memphis Bioworks Conference Center.

Aide, M.T. 2013. Agriculture in the 21st Century. First Coffee, Cape Girardeau Chamber Commerce. Cape Girardeau, MO.

Aide, M.T. 2013. Arsenic in soils. Annual Meeting Missouri Academy Science, College of the Ozarks, Branson, MO.

Aide, M.T. 2013. Arsenic in rice. Annual Meeting Missouri Academy Science, College of the Ozarks. Branson, MO.

Aide, M. T., and C.C. Aide. 2013. Black carbon in soil. Midwest Biochar Conference. Champaign, IL.

Aide, M.T. 2013. Soil fertility issues with energy crops. Crop Advisors Conference. Univ. Missouri Delta Research Center. Portageville, MO.

Aide, M.T. and D. Beighley. 2014. Arsenic in soil. 35th Meeting of the Rice Technical Working Group. New Orleans, LA.

Aide, M.T. and D. Beighley. 2014. Arsenic in rice. 35th Meeting of the Rice Technical Working Group. New Orleans, LA.

Aide, M.T. 2014. Rice Issues (Furrow irrigated rice). Missouri Rice Producers Conference. Dexter, MO.

Aide, M.T. 2014. Sweet Sorghum as a biofuel. Annual Meeting Missouri Academy Science. Central Missouri State University.

Aide, M.T.. 2014. Arsenic in rice. Annual Meeting Missouri Academy Science. Central Missouri State University.

Aide, M.T. 2014. Furrow irrigation in rice: Implications for production and arsenic uptake. Row Rice Workshop. Southeast Missouri State University – Malden.

Aide, M. T. 2014. Furrow irrigation in rice. Missouri rice field day. Glennonville, Missouri.

Aide, M.T. 2014. Southeast soil activities. Missouri Soil Survey Planning Conference. Bradford Farm. University Missouri-Columbia.

Aide, M.T. 2014. Curriculum update with Univ. Missouri. Fisher Delta Research Field Day. Portageville, Missouri.

Foster, A.J., S. Atwell, V. Ayers, D. Dunn, D. Beighley, and M. Aide. 2014. Sensor-based midseason rice N fertilization. University Missouri Fall Extension Conference, Columbia, Missouri.

Aide, M.T. 2014. Furrow irrigated rice in Missouri. Crop Advisors Conference. University Missouri Fisher Delta Research Center. Portageville, Missouri.

Aide, M.T. 2014. Furrow irrigated rice in Missouri. 2014 Delta States Irrigation Conference. Sikeston, Missouri.

Aide, M.T. and S. Barton. 2015. Nutrient uptake in soybeans amended with gypsum and lime. Annual Meeting Missouri Academy Science. Western Missouri State University. St. Joseph, Missouri.

Aide, M.T. and D. Beighley. 2015. Furrow and delay-flood irrigated rice: The alleviation of arsenic uptake. (Poster) Annual Meeting Missouri Academy Science. Western Missouri State University. St. Joseph, Missouri.

Aide, M.T. 2015. Gypsum and Polysulfate. ICL Industries, St. Louis, Missouri.

Aide, M.T. 2015. David M. Barton Agriculture Research Center Developments. Leadership Missouri. David M. Barton Agriculture Research Center. Gordonville, Missouri.

Aide, M.T. 2015. Row Rice. Missouri rice field day. Glennonville, Missouri.

Aide, M.T. 2015. Drainage water issues in Missouri. Crop Advisors Conference. University Missouri Fisher Delta Research Center. Portageville, Missouri.

Aide, M.T. and D. Beighley. 2016. Comparison of delayed flood and furrow irrigated rice for yield components and nutrient uptake. Missouri Rice Conference, Malden, Missouri.

Aide, M.T. 2016. Rice and Southern Missouri's Economy. Missouri Rice Research and Merchandising Council Annual Meeting. Cape Girardeau, MO.

Beighley, D., and M.T. Aide. 2016. Comparison of delayed flood and furrow irrigation rice for yield components and nutrient uptake. Rice Technical Workers Group. Houston, TX.

Aide, M.T., D. Beighley, and D. Dunn. 2016. Arsenic uptake in rice. Provost's faculty Research and Creativity Showcase.

Aide, M.T., I. Braden, S. Svenson, W. Mueller, J. Weathers, D. Mauk, H. Clark, and B. McVay. 2016. Response of Denitrification Bioreactors to Tile Drainage Effluent. Provost's faculty Research and Creativity Showcase.

Aide, M.T., D. Beighley, and D. Dunn. 2016. Arsenic uptake in rice. Missouri Academy Science Annual Meeting, Lincoln University. Jefferson City, MO.

Aide, M.T., I. Braden, S. Svenson, W. Mueller, J. Weathers, D. Mauk, H. Clark, and B. McVay. 2016. Response of Denitrification Bioreactors to Tile Drainage Effluent. Missouri Academy Science Annual Meeting, Lincoln University. Jefferson City, MO.

Aide, M.T. 2016. Drainage effluents and denitrification bioreactors. Missouri Soil Health Consortium. David M. Barton Agriculture Research Center. Cape Girardeau, MO.

Aide, M.T. 2016. Row rice production. Missouri Rice Field Day. Glennonville, MO.

Aide, M.T. 2016. Soil Fertility. Crop Advisors Conference. Fisher Delta Research Center, Portageville, MO

Aide, M.T. 2017. Row rice and market acceptability. Missouri rice field day. Glennonville, Missouri.

Aide, M.T. 2018. Tile drainage and denitrification bioreactors. February AG Tech Series. Economic and Business Engagement Center. Cape Girardeau, Missouri.

Aide, M.T. 2018. Agriculture and Southeastern Missouri. New Madrid Farm Bureau Annual meeting. New Madrid, Missouri.

Aide, M.T. and I.S. Braden. 2018. Denitrification bioreactors to limit nitrate-N from tile-drainage. Soil and Water Conservation Society annual meeting. Albuquerque, New Mexico.

Aide, M.T. 2018. Row Rice Updates. Missouri Rice Field Day. Glennonville, Missouri.

External Grants:

Popham, R., N. Tibbs, W. Lilly, J. Sharp, and M. Aide. 1985. Instrumentation for trace metal and anion analysis. Undergraduate Instrumentation Grant. National Science Foundation. \$25,000.

Aide, M.T. 1988. The determination of sodium in selected Missouri Bootheel rice soils. Missouri Rice Research and Merchandising Council \$2000.

Aide, M.T., and A. Robertson. 1989. Effects of water temperature on the growth and development of rice in southeast Missouri. Missouri Rice Research and Merchandising Council. \$1320.

Aide, M.T. 1994. Evaluation of ammonium sulfate and urea as pre-flood sources of nitrogen x potassium. Missouri Rice Research and Merchandising Council \$1000

Lowell, G. and M.T. Aide. 1994. Enhancement of undergraduate courses im mineralogy, petrology, and soil science with x-ray diffraction experiences. ILL.-National Science Foundation. \$102,000.

Aide, M.T. 1995. Evaluation of ammonium sulfate and urea as pre-flood sources of nitrogen x potassium. Missouri Rice Research and Merchandising Council. \$1000.

Aide, M.T. 1996. Potassium and phosphorus nutrition in rice. Missouri Rice Research and Merchandising Council. \$1000.

Aide, M.T. 1997. Potassium and phosphorus nutrition in rice. Missouri Rice Research and Merchandising Council. \$1000.

Ford, D.M., 1998. Linking the teaching of production agriculture with liberal education. USDA-Challange Grant. \$28,620. Aide, M.T. was the principle author as service to department.

Aide, M.T. 1998. Prediction of soil loss on burned and forested land at Taum Sauk State Park. Mo. Dept. Natl. Resource and Conservation. \$4800.

Aide, M.T., and D. Dunn. 1998. Influence of zinc on rice. Missouri Rice Research and Merchandising Council. \$3000.

Aide, M.T., and D. Dunn. 1999. Influence of zinc on rice. Missouri Rice Research and Merchandising Council. \$3500.

Aide, M.T., and D. Dunn. 2000. Corn root development on rice land. Missouri Rice Research and Merchandising Council.\$5000

Aide, M. T., 2000. A rice water budget. Missouri Rice Research and Merchandising Council.\$1800

Aide, M.T., and D. Dunn. 2001. Corn root development on rice land. Missouri Rice Research and Merchandising Council.\$1400.

Aide, M.T. 2002. Cotton development after rice. Missouri Rice Research and Merchandising Council.\$1700.

Aide, M.T. 2002. Water quality of rice drainage water. Missouri Rice Research and Merchandising Council. \$1400.

Aide, M.T. 2003. Cotton development after rice. Missouri Rice Research and Merchandising Council.\$1700.

Aide, M.T. 2003. Water quality of rice drainage water. Missouri Rice Research and Merchandising Council. \$1400.

Aide, M.T. 2004. Hyperspectral response of Nitrogen - Rice Varieties. Missouri Rice Research and Merchandising Council. \$3600.

Aide, M.T. 2005. Hyperspectral response of Nitrogen - Rice Varieties. Missouri Rice Research and Merchandising Council.

\$2700.

Aide, M.T., D. Dunn, and D. Beighley. 2006. Poultry litter and nitrogen fertilization in rice. Missouri Rice Research and Merchandising Council. \$2500.

Aide, M.T., D. Dunn, and D. Beighley. 2007. Poultry litter and nitrogen fertilization in rice. Missouri Rice Research and Merchandising Council. \$2500.

Aide, M.T. 2007. Controlled drainage and irrigation. USDA-Rural Development. \$90,000.

Aide, M.T., D. Beighley, I. Braden, K. Dillivan, W. Mueller, and David Dunn. 2008. Continuous rice production in Missouri. Missouri Rice Research and Merchandizing Council. \$4300.

Aide, M.T., W. Mueller, I. Braden, and W. Ellis. 2008. Evaluation of controlled subsurface irrigation-drainage for environmental effluent. Missouri Dept. Natl. Resour. \$5000.

Aide, M.T., D. Dunn, and D. Beighley. 2009. Environmental Rice. Missouri Rice Research and Merchandizing Council. \$3000.

Aide, M.T., D. Beighley. 2008. Continuous rice production in Missouri. Missouri Rice Research and Merchandizing Council. \$2500.

Aide, M.T. 2009. Semi-confinement beef facility. Rural Development. \$84,000.

Aide, M.T. and P. Schnare. 2009. Alternative agriculture. WIRED. \$81,000.

Aide, M.T. and W. Mueller. 2009. Sweet Sorghum in Missouri. WIRED. \$30,000.

Aide, M.T. 2009. Using nitrogen stabilizers to effectively limit rice paddy water nitrate accumulation. Missouri Rice Research and Merchandizing Council. \$2500.

Aide, M.T. 2010. Using nitrogen stabilizers to effectively limit rice paddy water nitrate accumulation. Missouri Rice Research and Merchandizing Council. \$2500.

Aide, M.T. and I.S. Braden. 2010. A survey of Lead at St. Joe State Park: An Environmental Analysis GRFC \$2,400.

Aide, M.T. 2011. Evaluation of Headline and Quadris Fungicides. Missouri Soybean Council \$3,000.

Aide, M.T. 2011. Assessment of Soil and Water Resources in southeastern Missouri. Missouri Rice Research and Merchandizing Council. \$3000

Aide, M.T. 2011. Using nitrogen stabilizers to effectively limit rice paddy water nitrate accumulation. Missouri Rice Research and Merchandizing Council. \$2500.

Aide, M.T. and I. S. Braden. 2012. Evaluating a controlled subsurface drainage and irrigation using cover crops. USDA-Cons. Innovation Grant. \$18,000.

Aide, M.T. 2012. The Missouri Higher Education Partnership for Agriculture Relevancy. USDA-NIFA. \$28,000.

Aide, M.T. and S. Svenson. 2012. Horticulture Incubator. USDA-Rural Development. \$87,000.

Aide, M. T. 2013. Arsenic in Rice. Private Donor. \$12,500

Aide, M.T. 2013. Rice Greenhouse. USDA-Rural Development. \$97,000.

Aide, M.T. 2013. (Co-PI) Food security through linking resources to enhance undergraduate education: Strategic partnerships among five universities in Missouri. \$645,000.

Aide, M. T. 2014. Arsenic in Rice. Private Donor. \$12,500.

Aide, M.T., W. Mueller, J. Weathers. 2014. Grain and Sweet Sorghum Cultivation and Producer Education Across Missouri. Unified Sorghum Checkoff Program. \$8,000.

Aide, M.T. and D. Beighley. 2015. Row rice variety trial. Missouri Rice Research and Merchandizing Council. \$4,000.

Aide, M.T. and D. Beighley. 2015. Gypsum, Lime, Irrigation and Rice. Missouri Rice Research and Merchandizing Council. \$5,000.

Aide, M.T. 2015. Drainage Water Management Infrastructure Improvement at the David M. Barton Agriculture Research Center. USDA-Agriculture Research Service. \$50,000.

Aide, M.T. 2015. Drainage Water Management Using Williams Creek Pumpage Water and Denitrification Bioreactors at the David M. Barton Agriculture Research Center. USDA-Agriculture Research Service. \$5,000.

Aide. M.T. 2017. Organic and Specialty Horticulture as a Pathway for Small Producer Independence. USDA-NRCS. \$28,000.

Aide. M.T. 2017. USDA - Rural Business-Cooperative Service Grant. Beef Cattle Improvement and Nutrition Network Across Southeast Missouri \$68,288.00

Aide. M.T. 2017. MRRMC - Row Rice Variety Trial . \$4,000

Aide, M.T. 2017. Horticulture for K-12 Career Visions and Small-Acreage Producer Empowerment USDA-NIFA. \$300,000. (Submitted August 2017, Pending)

Aide, M.T. 2017. Organic Fertilizer and Soil Health Management for Specialty Crops Collaborative. MO. Department of Agriculture. \$16,000.

Thesis Committee

Howard, John T., 1996. Remediation of a leaking underground storage tank site; Dodge Co., Nebraska. Department of Geosciences.

Myers, Kimberly A. 1996. Identification of morphoseismic features in the New Madrid fault zone using supervised classification procedures on landsat thematic mapper data. Department of Geosciences.

Romer, Spring. 1996. Seismotectonic development of the northern Mississippi embayment using a reaction-transport-mechanical diagenesis basin simulator. Department of Geosciences.

Schooler, Sue K., 1996. Stratigraphic and structural relationships to groundwater movement in the blue spring branch drainage system, Perry County, Missouri. Department of Geosciences.

Allen, Betsy. 1997. The iron and manganese distribution in alluvial soils having a fluctuating water table. Department of Geosciences.

- Cui, Yuzhi. 1997. Architectural element analysis for modeling of upper Dakota Sandstone in central Kansas. Department of Geosciences.
- Mum-Musser, Sue. 1997. Cloning and characterization of B-galactosidase from ripening avocado fruit. Department of Biology.
- Jarvis, Michael. 1998. Interpretations of quaternary paleospring deposits at San Diego Mountain in south-central New Mexico. Department of Geosciences.
- Tibbs, Heather C., 1998. Development of a laboratory manual for an introductory Earth Science course. (Graduate Paper). Department of Geosciences.
- Kluesner, Dennis. 1998. Soil genesis of selected soils derived from sandstone and sodic shale in the Wind River Basin, Wyoming. Department of Geosciences.
- Suchland, Wendy. 1998. Patch dynamics of the southern flying squirrel: *Glaucomys volans*. Department of Biology.
- Lawton, Jeremy. 1998. High-resolution synthetic well-log correlation of the Mississippi valley Holocene mud veneer: A new tool for assessing detailed floodplain history. Department of Geosciences.
- Cummings, Mark. 1998. Chromium(VI) adsorption on synthetic allophane and a synthetic hydroxy-Aluminum interlayered smectite. Department of Geosciences.
- Elledge, Ann. 1998. Nitrate leaching involving irrigated potatoes on sandy terraces in southeast Missouri. Department of Geosciences.
- Alexander, Tracy. 1999. Cadmium, Pb, and Zn uptake in selected reptiles from mine tailing from St. Joe. State Park. Department of Biology.
- Statler, Phillip. 1999. The effects of a controlled burning program on forested land at Taum Sauk State Park and Sam A. Baker State Park, Missouri.
- Heberlie, Lloyd. 2000. Soil genesis on felsic rocks of the St. Francois Mountains.
- Palmairi, Maria. 2001. Investigation of fern distribution in Missouri.
- Thompson, Jennifer. 2001. Water quality investigation of an alluvial aquifer in Cape Girardeau, Missouri.
- Smith, Christine. 2001. Impact of aspect and parent material on soil genesis in a semi-arid environment.
- Al Khanbashi, Salim. 2002. Ground water investigation of Wadi Hawasina catchment and the effect of

dam and saline water intrusion on a shallow aquifer. College of Science, Sultan Qaboos University, Sultanate of Oman.

Logan, Christine. 2003. Correlation of land use and water quality of Apple Creek in Perry and Cape Girardeau Counties in Southeast Missouri.

Akins, Stavena. 2003. A geochemical test for a possible Mid-Cretaceous Boreal/Tethyan connection in the U.S. western interior.

Oko, Albert. 2004. Integration of remote sensing and GIS with geochemistry in exploration for hydrocarbon surface expressions.

Mier, Rosemarie. 2004. A floristic and biotic comparison of two disturbed glades in St. Joe State Park.

Knapp, James. 2004. Geometric morphometric of Blarina.

Armstrong, Sandy. 2004. The temporal and spatial distribution of bats in southeast Missouri.

Anand, Anamika. 2004. Detecting saltwater contamination in Wyoming ranchlands using GIS and remote sensing techniques.

Gunter, Alan. 2004. Ichnofossil evidence of a Mowry Boreal/Tethyan connection across the transconnetional arch of the western interior seaway.

Roland, Robert. 2005. Preliminary evaluation for fugitive emissions from a smelter and coal-fired power plant in Missouri using remote sensing and biogeochemical data analysis.

Reese-Whiting, Rita. 2005. A series of cross sections in the upper stratigraphy of the western morehouse lowlands, northwestern Dunklin County, Missouri.

Robertson, Cathy. 2005. Soil genesis on igneous materials in the Big Bend region of Texas.

Layton, Ryan. 2007. Blackbird and non-target bird response to baiting in southeast Missouri.

Beadle, Kelly. 2007. Forensic discrimination of match heads by elemental analysis using ICP/OES.

Picker, Jennifer. 2007. The impact of deer inventory on vegetation at Big Oak Tree State Park: Baseline data comparing wet and wet-mesic bottomland forests.

Botch, P.S. 2008. The effects of micronutrients on the foraging behavior of the termite *Reticulitermes Flavipes*.

Schell, Steven R. 2008. Cerulean warbler habitat characteristics along parts of the Meramed River in

eastern Missouri.

Horn, Justin J. 2008. A pilot study for determining in vitro Dermal Absorption Rates of Chlorpyrifos in Women.

Russel, Sabrina. 2008. Cenet, cultural exchange network: Regulations, change and leadership.

Pellett, Jenifer. 2008. Comparative clay mineralogy of the Porters Creek Formation in southeastern Missouri and Eastover Formations in eastern Virginia.

Sandfort, Kirk. 2009. The infinity bio-fuel project.

Al-Zidi, Hilal Said. 2009. Numerical Evaluation of seawater intrusion in the semi-arid region albatinah region-Oman. Sultan Qaboos University, Sultanate of Oman.

Schubert, Heather. 2010. A systematic revision of the genus *Manekia* (Piperaceae).

Baker, Emily. 2010. A comparison of the effects of two litter management strategies on the herbaceous assemblage in a mixed hardwood forest.

Beauchamp, Airek. 2010. Locating the eye of the storm: Personal identity.

Robins, James Michael. 2011. Seasonal activity of anurans revealed through passive acoustic sampling.

Weaver, Jennifer. 2011. A floristic survey of Bulford Mountain conservation area: Igneous glades.

Weir, Natalya. 2012. Conditions for Poncelet N-Gon.

Scoles, Andria L. 2012. Water quality of the Little Black River and the potential effects on biota.

Posey, Lisa M. 2012. Boolean algebras in the permutation pattern containment poset.

Miller, Kelly. 2012. Response of local wood ducks to three baits at a rocket nest site.

Stallion, Irina. 2014. Solving orthogonal projection problems via Grobner basis.

Alsharekh, Anfel. 2015. A study of *Sparganium Americanum* (American Bur-Reed) composition to understand permeability of its leaf to chemical pesticides.

Brandt, Daniel P. 2015. A redescription of *Elacatinus Evelyntae* (Teleostei Gobidae) with descriptions of two new species and a morphometric analysis of the species complex.

Lv Shanshan. 2017. Simultaneous confidence intervals for pairwise differences of location parameters and

means from exponential distributions.

Courses Taught:

AO120 Plant Science (4 hours): an introduction to the crop and soil sciences, with a particular emphasis in morphology, physiology, pathology, and soil science.(4 hours).

AO215 Soil Science (3 hours): An introduction to soil science with an emphasis on soil physical and chemical properties, fertility, classification, and conservation.(3 hours).

AO322 Weed Science (3 hours): Identification, dissemination, ecology and control of weeds.

AO427 Soil Fertility and Plant Nutrition (3 hours): The chemical and biological foundations of plant-nutrient interactions, with an emphasis on the field (greenhouse) plot method

AO230 Principles of Grain Crops (3 hours): The growth and field management of corn, wheat, soybeans, rice, and grain sorghum.

AO555 Soil Classification and Resource Management (3 hours): Classification of soils in terms of their physical, chemical and mineralogical properties. Interpretation of soils in terms of best land use. (3 hours).

AO550 Soil Conservation (3 hours): The properties of soil and the soil erosion process. An emphasis on cultural decisions, simulation, and the engineering of control structures.(3 hours).

AG201 World Food and Society (3 hours): Food production and distribution in the advancement of societies in developed and developing countries. (3 hours).

AG469 Undergraduate Research: Supervised individual research. May be repeated once. (3 hours).

GO150 Environmental Hazards: Geological investigation of Earth's systems, with emphasis on natural and man-made hazards (2 hours).

GO455 Clay Mineralogy: Description of clay minerals common in geologic deposits and soils. Identification of clay minerals using X-ray diffraction, differential thermal analysis and chemical methods. (3 hours).

GO665 Low-Temperature Geochemistry: Application of chemical principles important to the study of the earth's surface and near surface environments (3 hours).

UI372 Earthquakes and Society: Application of natural processes important to understanding earthquakes and volcanism (3 hours).

EV365 Environmental Soil Science: An introduction to soil science with an emphasis on soil

physical and chemical properties, fertility, classification, and conservation (3 hours).

GO460 Hydrology (3 hours): An introduction to the relationships between the environment and occurrence, distribution, movement and chemistry of water. Emphasizing the influence of geologic processes and materials on surface and groundwaters.

EV467/667 Fate and Transport (3 hours): An introduction to the movement of materials in groundwater.

PH 106 Physical Concepts. (3 hours): An introduction to the concepts and principles governing the natural physical world and their relation to society.

AO 323 Plant Pathology. (3 hours) Microbiological principles and cultural practices associated with diseases in plant production.

AO551 Water Management. (3 hours) Principles of soil water and plant uptake and irrigation technology

Honors Received:

1986	Research Award, College of Science and Technology
1994	Delta Tau Alpha Honorary Member
1996	Research Award, College of Science and Technology
1997	Pride Award, College of Science and Technology (Excellence in teaching, research, service)
1998	Research Award, College of Science and Technology
2000	Research Award, College of Science and Mathematics
2003	Post-Professor Merit
2007	Pride Award, School of Polytechnic Studies
2009	Pride Award, School of Polytechnic Studies
2013	Alumni Merit Award
2013	Governor's Award for Teaching Excellence
2014	Pride Award, College Science, Technology and Agriculture
2015.	Honorary American FFA Degree, 88 th National FFA Convention, Louisville, KY.