Cliff T. Johnston
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Professor of Agronomy
Professor of Earth Atmospheric and Planetary Sciences
Deliberate Innovation for Faculty (DIFF) Director
Director, Enhanced Oil Recovery at Purdue
Faculty Affiliate:
Bindley Bioscience
Birck Nanotechnology Center
Center for the Environment
Purdue Climate Change Research Center
Purdue Water Community

Education

B.Sc. University of California, Riverside (1979) Chemistry
Ph.D. University of California, Riverside (1983) Soil and Environmental Science (Advisor: Garrison Sposito)
Postdoctoral Fellow. (1983 - 1985) Los Alamos National Laboratory. Center for Nonlinear Studies and the Isotope and Nuclear Chemistry Division (Advisor: Basil Swanson and Irving Bigio)

Professional Positions

Los Alamos National Laboratory, Postdoctoral Fellow (1983 – 1985)
University of Florida, Soil and Water Science Dept. Asst.-Assoc Professor (1985 – 1993)
Los Alamos National Laboratory, Sabbatical Fellow (1991)
Katholieke Universitiet Leuven, Belgium, Sabbatical (1992 and 2002)
Purdue University, Department of Agronomy, Assoc. Professor - Professor (1993 – present)
Purdue University, Department of Earth, Atmospheric and Planetary Sciences (2016 – present)

Membership in Academic, Professional and Scholarly Societies

American Chemical Society
Clay Minerals Society
Soil Science Society of America

Awards / Honors

1982 Graduate Regents Fellows at the University of California, Riverside
1983 Membership in Sigma Xi and Gamma Sigma Delta
1997 Elected to Council - Councilor for the Clay Minerals Society (1997 – 2000)
2001 ESCOP Leadership Development Program Fellow (Class 10)
2001 Recipient of the Marion L. and Chrystie M. Jackson Mid-Career Award of The Clay Minerals Society
2002 Election to Fellow, Soil Science Society of America
2002 Recipient of the Marion L. and Chrystie M. Jackson Mid-Career Soil Science Award
2002 Curator of the Source Clays Repository
2004 Named the George Brown Lecturer – 2004 Clay Minerals Groups of the Mineralogical Society (London)
2005-6 President of The Clay Minerals Society
2006-7 Member of the Executive Committee for Elements – An international magazine of mineralogy, geochemistry, and petrology

2006-7 Member of Editorial Board for Geochemical Transactions
2008 Awarded Fulbright Fellowship – Brazil.
2015 Named the Andrew Main 2015 Lecturer. University of Alberta, Canada.
2018 2018 Brindley Lecturer, The Clay Minerals Society

Publication Summary:

Book chapters and edited books – 22
Invited Reviews – 18
Edited Books – 1
Citation metrics
Web of Science Citation Report (as of Feb 2018) h-index 38
4460 citations, 25.3 citations/per publication
Google Scholar: Citations 15902, h-index 51, since 2012 h-index of 29
http://orcid.org/0000-0002-8462-9724
http://www.researcherid.com/rid/B-2215-2009

Publications - Journal Articles, Book Chapters, Invited Reviews and Edited Books

155. Yerabolu, R., Kotha, R.R., Niyonsaba, E., Dong, X., Manheim, J.M., Kong, J., Riedeman, J.S., Romanczyk, M., Johnston, C.T., Kilaz, G., Kenttämaa, H.I. 2018. Molecular profiling of crude oil by using Distillation Precipitation Fractionation Mass Spectrometry (DPF-MS). Fuel, 234, 492-501. https://doi.org/10.1016/j.fuel.2018.07.028

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153. Tu, Y.J., Johnston, C.T. 2018. Rapid recovery of rare earth elements in industrial wastewater by CuFe2O4 synthesized from Cu sludge. Journal of Rare Earths, 36, 513-520. https://doi.org/10.1016/j.jre.2017.11.009

152. Liu, Cheng-Hua; Chuang, Ya-Hui; Li, Hui; Boyd, Stephen A.; Teppen, Brian; Gonzalez, Javier; Johnston, Cliff; Lehmann, Johannes; Zhang, Wei Long-term Sorption of Lincomycin to Biochars: The Intertwined Roles of Pore Diffusion and Dissolved Organic Carbon" Submitted to Environmental Science and Technology 7-April-2018 es-2018-01843m

151. Schnetzer, F., C.T. Johnston, G.S. Premachandra, N. Giraudo, R. Schuhmann, P. Thissen and K. Emmerich. 2017. Impact of Intrinsic Structural Properties on the Hydration of 2:1 Layer Silicates. Acs Earth and Space Chemistry 1: 608-620. https://doi.org/10.110021/acsearthspacechem.7b00091

150. Ochoa-Cornejo, F., A. Bobet, A. El Howayek, C.T. Johnston, M. Santagata and J.V. Sinfield. 2017. Discussion on: "Laboratory investigation of liquefaction mitigation in silty sand using

nanoparticles" Eng.Geol.204:23-32. Engineering Geology 216: 161-164. https://doi.org/10.1016/j.enggeo.2016.11.015

149. Stedtfeld, R.D., J.B. Sallach, R.B. Crawford, T.M. Stedtfeld, M.R. Williams, H. Waseem, C.T. Johnston, H. Li, B.J. Teppen, N.E. Kaminski, S.A. Boyd, J.M. Tiedje and S.A. Hashsham. 2017. TCDD administered on activated carbon eliminates bioavailability and subsequent shifts to a key murine gut commensal. Appl. Microbiol. Biotechnol. 101: 7409-7415. https://doi.org/10.1007/s00253-017-8460-9

148. Yeasmin, S., B. Singh, C.T. Johnston and D.L. Sparks. 2017. Evaluation of pre-treatment procedures for improved interpretation of mid infrared spectra of soil organic matter. Geoderma 304: 83-92. https://doi.org/10.1016/j.geoderma.2016.04.008

147. Boyd, S.A., J.B. Sallach, Y. Zhang, R. Crawford, H. Li, C.T. Johnston, B.J. Teppen and N.E. Kaminski. 2017. Sequestration of TCDD by activated carbon eliminates bioavailability and the suppression of immune function in mice. Environmental Toxicology and Chemistry. https://doi.org/10.1002/etc.3815

146. J,S. Clemente, Beauchemin, S., MacKinnon, T., Martin, J., Johnston,C.T., Joern, B. (2017) Initial biochar properties related to the removal of As, Se, Pb, Cd, Cu, Ni, and Zn from an acidic suspension. Chemosphere 170, 216-224. https://doi.org/10.1016/j.chemosphere.2016.11.154

145. Johnston, C.T. 2017. Infrared Studies of Clay Mineral-Water Interactions. In: W. P. Gates, J. T. Kloprogge, J. Madejova and F. Bergaya, editors, Infrared and Raman Spectroscopies of Clay Minerals. Elsevier Ltd., Amsterdam, Netherlands. p. 288-309. https://doi.org/10.1016/B978-0-08-100355-8.00009-6

144. Singh, B., Fang, Y. and Johnston, C.T. **(2016)** A fourier-transform infrared study of biochar aging in soils. Soil Science Society of America Journal, **80**, 613-622. https://doi.org/10.2136/sssaj2015.11.0414

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141. Zhang, S., Q.F. Liu, F. Gao, X.G. Li, C. Liu, H. Li, et al. 2017. Mechanism Associated with Kaolinite Intercalation with Urea: Combination of Infrared Spectroscopy and Molecular Dynamics Simulation Studies. Journal of Physical Chemistry C 121: 402-409. https://doi.org/10.1021/acs.jpcc.6b10533

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136. Liu, C.H., Chuang, Y.H., Li, H., Teppen, B.J., Boyd, S.A., Gonzalez, J.M., Johnston, C.T., Lehmann, J. and Zhang, W. **(2016)** Sorption of lincomycin by manure-derived biochars from water. *Journal of Environmental Quality*, **45**, 519-527. https://doi.org/10.2134/jeq2015.06.0320

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124. El Mohtar, C.S., Bobet, A., Santagata, M.C., Drnevich, V.P., and Johnston, C.T. **(2013)** Liquefaction Mitigation Using Bentonite Suspensions. *Journal of Geotechnical and Geoenvironmental Engineering* **39**, 1369-1380. https://doi.org/10.1061/(ASCE)GT.1943-5606.0000865

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Transform Infrared Studies. *Environmental Science & Technology* **45**, 1399-1406. https://doi.org/10.1021/es103324z

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114. De-Campos, A.B., Huang, C., and Johnston, C.T. **(2011)** Biogeochemistry of terrestrial soils as influenced by short-term flooding. *Biogeochemistry* **111**, 239-252. https://doi.org/10.1007/s10533-011-9639-2

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112. Boyd, S.A., Johnston, C.T., Pinnavaia, T.J., Kaminski, N.E., Teppen, B.J., Li, H., Khan, B., Crawford, R.B., Kovalova, N., Kim, S.S., Shao, H., Gu, C., and Kaplan, B.L.F. **(2011)** Suppression of humoral immune responses by 2,3,7,8-tetrachlorodibenzo-p-dioxin intercalated in smectite clay. *Environmental Toxicology and Chemistry* **30**, 2748-2755. https://doi.org/10.1002/etc.701

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Invited Talks and Presentations (2004-present)

(For multi-authored presentations, underlined name is presenter)

2017

Integrated Reservoir Characterization for Enhanced Oil Recovery, Tar Springs Formation, Illinois Basin, T. Henderson, J. Orr, C.T. Johnston, K. Ridgway, B. Clayton. American Association of Petroleum Geologists (AAPG) Houston, TX

2016

Molecular Interactions of crude oil with kaolinite. Cliff T. Johnston, Xueming Dong, Ravikiran Yerabolu, Bryan C. Clayton, and Hilkka L. Kenttämaa: 53rd Annual Meeting of The Clay Minerals Society 2016, Atlanta GA (June 5-8, 2016)

Polymer-MFT interactions form surface chemistry to rheology. Cliff T. Johnston, Mohammadhasan Sasar, Marika Santagata, Antonio Bobet, Linna Duan, and Heather A. Kaminsky. International Oil Sands Tailings Conference 2016, Lake Louise, AB Canada (Dec 4-7, 2016)

Application of Scanning Open Path Fourier Transform Infrared Spectroscopy (OP/FTIR) to Measure Greenhouse Gas (GHG) Concentrations Emitted from Agricultural Soils. C.H. Lin, C.T. Johnston, R.H. Grant (2016). Annual meeting the Soil Science Society of America, Phoenix AZ, Nov 2016.

Integrated reservoir characterization for enhanced oil recovery, Tar Springs Formation, Illinois Basin. Basin, T. Henderson, J. Orr, C.T. Johnston, K. Ridgway, B. Clayton. Annual Meeting of the Geological Society of America, 25-28 September 2016, Denver, CO.

Exploring the Effects of Aromatic Molecules in Chemical Enhanced Oil Recovery. J.M. Crain, R. Borgohain, and C.T. Johnston. The Summer Undergraduate Research Fellowship (SURF) Symposium, 4 August 2016 Purdue University, West Lafayette, IN

2015

Invited to present the "Andrew Main Lecture for 2015" at the University of Alberta. What is unique about the surface chemistry of oil sands clay minerals? May 12-15, 2015, Edmonton, AB Canada.

Experimental and theoretical insights into the interaction of methylene blue with kaolinite Cliff T. Johnston, Robert A. Schoonheydt,, Jeffery A. Greathouse, Dawn L. Geatches, Darin Q. Pike,

H. Christopher Greenwell, Jennifer Wilcox and Randall T. Cygan Euroclay, Edinburgh 2015 (July 5-10, 2015)

Understanding the surface chemistry of oil sands clay minerals: implications for improved extraction and management of tailings. Cliff T. Johnston Euroclay, Edinburgh 2015 (July 5-10, 2015)

2014

Purdue Geotechnical Society Workshop, April 13th, 2014. Theme: Geotechnical Engineering: Crossing Boundaries. **Keynote** presentation entitled "Understanding Clays in Oil Sands Processing: How the clay particle beat the 100,000 ton per hour process."

Saskatchewan Research Council. June 6th, 2014; Regina, SK Canada. Influence of Mineral-Surface Interactions on Enhanced Oil Recovery in the Illinois Basin

Clay Minerals Society Annual Meetings. 19 May, 2014. Paper entitled "Aluminate speciation in alkaline electrolyte solutions simulating high-level nuclear waste. C.T. Johnston, J.G. Reynolds, S.F. Agnew.

Clay Minerals Society Annual Meetings. 21 May, 2014. Paper entitled "How does methylene blue interact with the surface of kaolinite? C.T. Johnston, and R.A. Schoonheydt.

Australian Clay Minerals Society Meeting (3-5 February, 2014; Perth, Western Australia). **Keynote** lecture on "Nano-confined water in clay minerals".

Australian Clay Minerals Society Meeting (3-5 February, 2014; Perth, Western Australia) "Surface chemistry of oil sands clay minerals".

Ag Spectrum National Dealers Seminar. 13 Jan 2014, Clearwater, FL. Invited presentation: "Influence of relative humidity on foliar nutrition"

Ag Spectrum Maximum Farming Club Conference. 15 Jan 2014, Clearwater, FL. Invited presentation: "Discovering the point of deliquescence".

2013

Soil Science Society of America Annual Meetings. Special Symposium. "Battles of Soil Scientists in Fukushima, Japan". Invited paper on Nov 4th, 2013. Tampa, Florida. "Role of clay minerals in controlling the fate and transport of radioactive Cs in soils."

Clay Focus Group of Canada's Oil Sands Innovation Alliance (COSIA) on October 9th, in Calgary, AB, Canada. Present invited talk entitled "PVP versus Methylene Blue as a surface probe of oil sands clay minerals".

Clay Minerals Society Annual Meetings held in Urbana-Champaign, IL. Invited presentation. Molecular spectroscopy and modeling of dioxin and polyaromatic hydrocarbon interactions with clay minerals. Johnston, C. T., Rana, K., Khan, B., Liu, H., Liu, C., Teppen, B. J., & Boyd, S. A.

American Chemical Society Meeting, (Fall Meeting) Indianapolis. Invited presentation. Spectroscopic, molecular dynamics and sorption studies of PCDDs and PAHs interactions with black carbon and contrasting geosorbents. Johnston, C. T., Khan, B., Das, K., Liu, C., Teppen, B. J., Boyd, S. A. Chattopadhyay, S.

Presented two invited talks in China on "Integrated Cropping System Approaches to Simultaneously Limiting Nitrous Oxide and Ammonia Emissions (During Maize Production in the Midwestern United States)" to Stanley Fertilizer Company. One talk was presented to an audience of 1200 fertilizer dealers in China. The second talk was at the International Headquarters of Stanley in the city of Linyi, (Shandong Prov.) China. (July 1 – 13, 2013).

2012

Shell Energy Day at Purdue University. **Keynote** lecture to the, Sept 27, 2012 "Overview of Oil Sands Mining"

Ecological Sciences and Engineering (ESE) at Purdue University. Keystone Series. **Keynote** lecture for ESE All-Cohort Series for Students and Faculty "Understanding Clays in Oil Sands Processing: How the clay particle beat the 100,000 ton per hour process". January 25th, 2012

Clay Minerals Annual Meeting (2012). Invited paper. Spectroscopic, molecular dynamics and sorption studies of PCDDs and PAHs interactions with four contrasting geosorbents. C.T. Johnston, B. Khan, B.J. Teppen, H. Li, C. Liu, E. Barth, S. Chattopadhyay, K. Das, and S.A. Boyd (June 2012).

2011

Canadian Oil Sands Network for Research and Development (CONRAD) Clay Workshop. Invited paper. "Influence of clay mineralogy of clay-bitumen interactions" March 8th, 2011. Edmonton, Alberta, Canada.

Invited presentation to the Centre for Oil Sands Innovation Workshop. March 11th, 2011. Edmonton, Alberta, Canada. "Surface Chemistry of Oil Sands Clay Minerals"

Mineralogical Society of Korea Annual Meeting, **Keynote** lecture on 26 May 2011, Jinju, South Korea "Probing the nanoscale architecture of clays minerals." **(**Host. Prof. Hyengoo Cho)

Korea University, Seoul, South Korea, 24 May 2011. Invited seminar "Role of clay minerals in controlling the fate of dioxins in the environment" (Host. Prof. Seunghun Hyun).

University of Tokyo, Tokyo, Japan. 30 May 2011. "Role of clay minerals in controlling the fate and transport of radioactive 137, 134Cs in soils". **(**Host: Prof. Masaru Mizoguchi and Prof. Toshiro Kogure.)

National Institute of Materials Science (NIMS), Tsukuba Japan. Invited seminar "Role of clay minerals in controlling the fate and transport of radioactive $^{137, 134}$Cs in soils." **(**Host: Dr. Hirohisa Yamada)

2011 Bouyoucus Conference in Estes Park, CO 31 July 2011. Invited presentation "Surface chemistry and biophysics of microbial attachment and protection mechanisms during airborne transport of microbes" Cliff. T. Johnston and James Tiedje.

Clay Minerals Society Annual Meetings (Lake Tahoe, NV, 24-29 September 2011) Suppression of humoral immune responses by 2,3,7,8-tetrachlorodibenzo-p-dioxin intercalated in smectite clay. C.T. Johnston**,** S.A. Boyd, B. Khan, T.J. Pinnavaia, N.E. Kaminski, B.J. Teppen, H. Li, R.B. Crawford, N. Kovalova, S.S. Kim, H. Shao, and B.L.F. Kaplan.

Clay Minerals Society Annual Meetings (Lake Tahoe, NV, 24-29 September 2011). Synthesis and characterization of an organoclay geosorbent for the removal of hydrophobic organic contaminants. C.T. Johnston, B. Khan, E.F. Barth, S. Chattopdahyay, and S.A. Boyd.

Clay Minerals Society Annual Meetings, Lake Tahoe, NV, 24-29 September 2011. Clay mediated route to natural formation of polychlorobenzo-p-dioxins. C. Liu, G. Gu, B.J. Teppen, C.T. Johnston, S.A. Boyd. https://doi.org/10.1021/es104225d

Presentation to the Integrated Land Ecosystem- Atmosphere Processes Study (iLEAPS) 3rd Science Conference. Garmisch-Partenkirchen, Germany. September 18-23, 2011. Emissions of N2O from a fertilized field: a comparison between chamber and scanning open-path micrometeorological approaches. Grant,R.H., T.J. Vyn, R. Omonde, D.R. Smith, E. Thompson, M.T. Boehm, and C.T. Johnston.

Air and Waste Management Association Annual Meetings. Estimation of NH_3 emissions immediately following land application of anhydrous ammonia using a scanning FTIR. R.H. Grant, C.T. Johnston and M.T. Boehm

2010

19th World Congress of Soil Science, Brisbane Australia, August 1-6, 2010. Invited Paper. Role of Clay Minerals in Controlling the Fate of Exceptionally Toxic Organic Contaminants in the Environment. C.T. Johnston, S.A. Boyd, B.J. Teppen and C.T. Johnston

Australian Clay Minerals Society, 2010 (August 7-8) Brisbane Australia. Invited Plenary Session Paper. Interactions of proteins on clay surfaces. C.T. Johnston, G. Premachandra, T. Szabo and R.A. Schoonheydt

Department of Energy Waste Management 2010. "Role of Aluminum Dimer and Carbonate in the Aluminum Solubility for Hanford Wastes" C.T. Johnston, Elaine Mihelc, S.A. Agnew, J.G. Reynolds. Poster Presentation

89th Congresso SIMP. Meeting of the Societa Italiana di Mineralogia e Petrologia. L. Gigli, C.T. Johnston, and G. Premachandra "Introductive study on the interactions of hydrochloride tetracycline with expandable clay minerals" Sept 13-15, 2010. Ferrara, Italy.

Monastero dei Benedettini – Piazza Dante 2 Catania Nov 11-12, 2010. Pesticides in the Mediterranean Area. "A comparative study of the adsorption properties of zeolites towards sulfonamide antibiotics" S. Blasioli, C.T. Johnston, I Braschi and C.E. Gessa.

The Clay Minerals Society, Spanish Clay Society, and the Japanese Clay Minerals Society Joint Meeting. Sevilla, Spain June 6-10, 2010. "Adsorption of oxalate on montmorillonite" M.E. Ramos, C.T. Johnston, F.J. Huertas

American Geophysical Union Fall Meeting (2010). San Francisco, CA 13-17 Dec 2010. Poster B41-0351. "Teasing Apart the Influence of Past Land Use and Current Invertebrate Processes on the Controls of Soil Organic Matter Stabilization in Eastern Deciduous Forests, USA" Ma, Y.; Filler,T.R.; Johnston,C.T.; Szlavecz,K.A.; McCormick,M.; Thayer,C.; Jourdain,J.; Johnson,A..

Departmental Seminar to Soil and Crop Science. Michigan State University on November 10th, 2010. Lecture entitled "Probing the nanoscale architecture of clay minerals and hydrous oxides"

2008

ACS National Meeting, New Orleans (235th), LA April 6-10, 2008. Interaction of proteins with clay surfaces: A structural and spectroscopic study of the lysozyme-saponite complex G. Premachandra; T. Szabo; R.A. Schoonheydt; C.T. Johnston

ACS National Meeting, New Orleans (235th) LA April 6-10, 2008 "Examining the nanoscale structure of active sites on clay surfaces" C.T. Johnston; R.H.A. Ras; B.J. Teppen; S.A. Body; R.A. Schoonheydt.

ACS National Meeting, New Orleans (235th) LA April 6-10, 2008 "Spectroscopic study of dibenzo-p-dioxin sorption on clay minerals" K. Rana, C. Liu; B.J. Teppen; S.A. Boyd; C.T. Johnston.

ACS National Meeting, New Orleans (235th) LA April 6-10, 2008 "Sorption of basic amino acids on expandable clay surfaces" J. Lok; G. Premachandra; C.T. Johnston. Paper won "Best Student Poster".

ACS National Meeting, New Orleans (235th) LA April 6-10, 2008 "In situ ATR-FTIR, diffuse reflectance FTIR and sorption study of glyphosate to goethite" E.C. Johnson; C.T. Johnston.

Symposium in honor of Professor Robert Schoonheydt on the occasion of his retirement of his chair. Theme: Zeolites and Clay Minerals: from Surface Chemistry to Catalysis. Clay Minerals from Hydrophilic to Hydrophobic. 1 October 2008. Katholieke Universiteit Leuven, Leuven, Belgium (one of 6 international scientist from around the world invited).

Estacion Experimental del Zaidin. October 10th, Invited lecture to Clay minerals: from hydrophilic to hydrophobic. Granada, Spain. Host. Dr. Javier Huertas. 2008.

Canadian Oil Sands Network for Research and Development (CONRAD) Clay Workshop. Invited paper. "Surface chemistry of oil sands clay minerals" May 1-2, 2008, Calgary, AB Canada

Influence of low molecular weight organic acids on phosphorus bioavailability in acid soils of Brazil and Kenya. March 19th, 2008 to Universidade Federale de Goiás, Brazil, sponsored by the Agronomy Graduate Program. Presented during Fulbright Fellowship to Brazil.
Chemistry of highly weathered tropical soils. 11 March 2008 Embrapa Arroz y Feijão (rice and beans) located near Goiania, Brazil. Host. Dr. Beata Madari Emoke (former Ph.D. student now on staff at Embrapa). Presented during Fulbright Fellowship to Brazil.
Environmental fate and transport of pesticides in soils. Catholic University of Goiania, Brazil 6 March 2008. Presented during Fulbright Fellowship to Brazil.

2007

Invited seminar at Sandia National Laboratory. Probing the nanoscale architecture of mineral surfaces. 1 June 2007. Albuquerque, NM. (Invited by Scott Greathouse).

Invited seminar at UC Davis 'Molecular Hydrology' 7 June 2007. Davis, CA.

Invited Seminar to the Universidade Federal de Goiás, Goiás, Brazil (2007)

Invited seminar to Civil Engineering, Purdue University "Probing the Clay-Water Interface. 6 Nov 2007. West Lafayette, IN. (Invited by Marika Santagata).

2006

ASA-SSSA-CSSA – Organic soils symposium (S2) (2006)

Fall ACS Meeting in San Francisco – G. Sposito symposium (Geochemistry) 2006.

Joint meeting of Groupe Francais Argille / The Clay Minerals Society (Oleron, France) 2006.

2005

American Chemical Society Meeting in Joplin, MO (2005)

International Clay Conference, Tokyo, Japan. (2005) "Molecular Hydrology"

The Clay Minerals Society Meetings, Burlington, VT (2005)

American Chemical Society Meetings (Geochemistry Division) – San Diego, CA (2005)

EMBRAPA - Present invited lecture at "New Approach for Improving Phosphorus Acquisition and Aluminum Tolerance of Plants in Marginal Soils. Sete Lagoas, Brazil. (2005)

2004

Present invited paper at the Collaborative Crop Research Program Grantee Conference in Vaals, Netherlands (McKnight Foundation). (2004)

Keynote Lecture "George Brown Lecture" to the Mineralogical Society of London. London, UK. (2004). Understanding the nanoscale properties of clay minerals.

Graduate Students and Postdoctoral Researchers:

Serving/served as major professor or co-major professor

Cheng Hsien Lin, 2st year Ph.D. student	(current)
Joseph Martin, 2nd year Ph.D. student (co-chair with B. Joern)	(current)
Dre Funk, 2nd year	
Kiran Rana, 5th year Ph.D. student	(current)
Eric Johnson, (M.Sc).	2009
Alfredo de Campos, (Ph.D, co-chair with C. Huang)	2008
Kiran Rana, (M.Sc.)	2007
K. Dontsova, (Ph.D., co-chair with D. Norton)	2002
Shan Li Wang, (Ph.D.)	2001
Beáta Emoke Madari (Ph.D., co-chair with Prof. Erika Micheli)	1998
Christopher Guest (M.Sc.)	1997
Weizong Xu, (M.Sc.)	1997
Steve Trabue, (M.Sc.)	1991
Jay Bhatti (Ph.D., Forest Soils at UF, co-chair with N. Comerford)	1997

Postdoctoral supervision

Bushra Khan (Jan 2010 through Dec 2011)
Dongqiang Zhu (2004-2005)
Maurilio Fernandes de Oliveira (Postdoc 2001-2003)
Zeina Hinedi (1988-1990; UF)
Terrence Tipton (1989-1991; UF)

Serving/served on advisory committee

Hsin-se Hsieh,	Ph.D.	Civil (Jafvert)	current
Dustin M. Houghton	Ph.D.	Botany Plant Path (Gibson)	current
Ochoa, Felipe	Ph.D.	Geotech Eng. / Civil (Santagata)	current
Huang, Pao-Tsung	Ph.D.	Geotech Eng. / Civil	2013

Ma, Yini,	Ph.D.	Earth Atm Sci	2013
Creamer, Courtney	Ph.D.	Earth Atm Sci	2012
Monwuba, Chukwukelue K	Ph.D.	Geotech Eng. / Civil	2012
El Howayek, Alain	M.Sc.	Geotech Eng. / Civil	2011
Salvador Francisco Acuna	Ph.D.	Ag Biol Eng	2009
Daniel Fagerman	M.Sc.	Geotech Eng. / Civil	2009
Jennifer Ann Maguire	Ph.D.	Pharmacy	2009
Beibei Sun	Ph.D.	Env. Eng. / Civll	2009
Yanbing Xia	M.Sc.	Soil Fertility	2008
Jared Wade Alsdorf	M.Sc.	Remote Sensing	2008
Tim Porter	M.Sc.	Soil Fertility / Chemistry	2008
El Chadi Mohtar	Ph.D.	Geotech Eng. / Civil	2008
Pamela Achieng Obura.	Ph.D.	Soil Mineralogy / Chemistry	2008
Julia Patrice Clark.	M.Sc.	Geotech Eng. / Civil	2008
Timothy Patrick Porter	M.Sc.	Soil Chemistry	2008
Eugene Branley	M.Sc.	Soil Fertility / Chemistry	2007
Xiadong Gao.	Ph.D.	Soil Mineralogy / Chemistry	2007
Mary Gumz.	Ph.D.	Horticulture	2007
Bethany Hanson.	Ph.D.	Pharmacy	2007
Joon Ho Hwang,	Ph.D.	Geotech Eng. / Civil	2006
Agnieszka M. Szlezak	Ph.D.	Soil Chemistry	2006
Dong Hee Kang	Ph.D.	Env. Eng. / Civil	2006
Kwok Pan Yau	Ph.D.	Pharmacy	2005
Jason Christopher Hickey	MSc,	Soil Chemistry	2005
Anita Gal	MSc,	Soil Fertility / Chemistry	2005
Isaac William Wait.	Ph.D.	Env. Eng. / Civil	2005
Bradford Everett Derrick,	M.Sc.	Env. Eng. / Civil	2005
William Clayton Smith,	M.Sc.	Soil Chemistry/ Botany	2005
Andrew Tong	Ph.D.	Soil Chemistry (Univ. of Sydney, Australia)	2004
Amy Berg	M.Sc.	Soil Fertility / Chemistry	2004
Micah Todd Humphreys	Ph.D.	Soil Chemistry	2004
Robin Ras	Ph.D.	Chemistry (K.U. Leuven, Belgium)	2003
Gary Morefield	Ph.D.	Pharmacy	2003
Arunee Willayanukulluk	Ph.D.	Pharmacy	2003
Nerilde Favaretto	Ph.D.	Soil Fertility / Chemistry	2002
Yanjun (Maggie) Zhao	Ph.D.	Soil Chemistry	2002
Ekaterina Dontsova	Ph.D.	Soil Chemistry / ARS	2002
Seema Mudholker	Ph.D.	Pharmacy	2001
Bart van Duffell	Ph.D.	Chemistry (K.U. Leuven, Belgium)	2001

Lana Burrell	Ph.D.	Pharmacy	2000
Eusebio Ventura	Ph.D.	Soils / ABE	2000
Yong Koo Seol	Ph.D.	Soil Chemistry	2000
Krishna Kasturi	M.Sc.	Civil	1999
Sarah Gruenhagen	Ph.D.	Soil Mineralogy	1998
Mateugue Diak	Ph.D.	Soil Fertility / Chemistry	1997
John Heimlich	Ph.D.	Pharmacy	1997
Lian-Shin Lin	Ph.D.	Environmental Engineering	1997
Laibin Yan	Ph.D.	Soil Chemistry	1996
Nick Priddy	M.Sc.	Soil Chemistry	1996
Ching Yuan	Ph.D.	CIVIL Eng.	1995

Students at St. Ishtvan University, Godollo, Hungary
Beáta Emoke Madari (Ph.D. 2008) Co-chair with Prof. Erika Micheli.

Students at K.U. Leuven

Bart van Duffell	Ph.D. external Ph.D. member K.U. Leuven, 2002)
Robin Ras	Ph.D. (external Ph.D. member K.U. Leuven, 2004)

Students at the University of Perugia, Italy

Luciano Concezzi	Ph.D. Soil Chemistry 1995
Roberto Altieri	Ph.D. Soil Chemistry 1995

Students at University of Bari, Italy

Paolo LaCava	Ph.D. Soil Chemistry 1995

Students at the University of Florida

Jay Bhatti	Ph.D. Forest Soils / Soil Chemistry
James Bonachecz	Ph.D. Soil Chemistry / Physics
Mark Ou	Ph.D. Soil Chemistry / Physics
Itaru Okuda	Ph.D. Soil Chemistry UF

Visiting Scientists hosted[

Beatriz Maria Gamiz Ruiz, University of Sevilla, Spain, Visiting Scholar from Sept 1 through Dec 1, 2011 (Second visit to Purdue)

Carlo Fellet, Visiting Scholar from University of Bologna, Italy (1 Feb 2011 through 1 June 2011).

Prof. Hyen Goo Cho, Gyeongsang National University, South Korea (July 2011)

Prof. Balwant Singh, University of Sydney, Australia (October, 2011)

Dr. Sonia Blasioli, University of Bologna, Visiting Scholar from Feb 2010 – June 2010

Ms. Beatriz Maria Gamiz Ruiz, University of Sevilla, Spain, Visiting Scholar from Sept 1 through Dec 1, 2010

Lara Gigli, University of Bologna, Italy 1 Sept 2009 – 1-Dec 2009

Elena Ramos, University of Granada, Spain (15 Sept 2009 – 15 Dec 2009; 2nd visit)
Dr. Marie Regnier from the University of Utrecht, Netherlands (visiting scholar 4 months)
Elena Ramos (Ph.D. student from the Univeristy of Granada, Spain (Visiting scholar 4 months)
Elizabeth Carrera (MSc. student Mexico (9 months)
Prof. Marika Santaga (Faculty member in Civil Engineering – Academic Study in a 2nd Discipline)
Balwant Singh (Visiting Professor – co-hosted Balwant's sabbatical in 2006 with Darrell Schulze) Balwant is Professor Soil Chemistry at the University of Sydney, Australia.
Judit Berenyi Uveges (Szent Istvan University, Godollo Hungary) Spring 1998 semester.
Susan Crow (Postdoc 2006-2007 in EAPS – worked in my lab for few months)
Elizabeth Haack (Postdoc 2005-2007 at the Center for Environmental Science and Technology at the University of Notre Dame; advisor Patricia Maurice).

Teaching Activities

2017

Soil Chemistry	AGRY 540 (Spring 2017)

2016

Soil Biogeochemistry	EAPS 518 (co-taught with Tim Filley (Fall 2016)
Soil Chemistry	AGRY 540 (Spring 2016)

2015

Terrestrial Biogeochemistry	AGRY 598/ EAPS 591 (Fall 2015) (With Tim Filley)
Greenhouse Gas Emissions	AGRY 598 (Maymester 2015 with R. Grant)
Climate Change in Africa	AGRY 399 (Spring 2015, with R. Grant)

2014

Climate Change in Africa	AGRY 399 (Spring,1 credit; N=7, with R. Grant)
Soil Chemistry	AGRY 540 (Spring, 3 credit, N=8)
Env. Geotech Eng.	CE593 & AGRY598 (Spring, 3 credit, N=16, with P. Bourdeau)

2013

Intro to Environmental Sci.	NRES 290 / EAPS 113 (FA, 3 credits, N=107, with Michalski)
Soil Chemistry	AGRY 540 (SP, 3 credits, N=14)
Climate Change in Africa	AGRY 399 (SP, 1 credit, N=3, with R. Grant)

2012

Terrestrial Biogeochemistry	AGRY 598, EAPS 591 (Spring, 3 credits, N=11, with T. Filley)
Soil Chemistry	AGRY 540, Spring, 2013. (3 credit, N=11, with P. Schwab)
Terrestrial Biogeochemistry	AGRY 598, EAPS 591 (Spring, 3 credits, N=11, with T. Filley)

2010

Contemporary Issues in Ag	AGRY 460, Spring 2010, 3 credits, N=22)
Soil Chemistry	AGRY 540, Spring 2010, 3 credits, N=12, with P. Scwhab)

2009

Soil Chemistry	AGRY 540, Spring 2009, 3 credits, with P. Scwhab)
Terrestrial Biogeochemistry	AGRY 598T/EAPS 591, Spring 2009 (with T. Filley)

2008

Soil Biogeochemistry	(intensive course taught at the Univeristy of Goiania, Brazil in March of 2008) – 2 units of credit during Fulbright to Brazil.
Soil Chemistry	AGRY 540, Spring 2008, 3 credits, with P. Scwhab)
Terrestrial Biogeochemistry	AGRY 598T/EAPS 591, Spring 2008 (with T. Filley)

2007

Contemporary Issues in Ag	AGRY 460, Spring 2010, 3 credits, N=22, with J. Vorst)

2006-1994

Soil Chemistry	AGRY 540, Spring – taught every semester between 1994-2014
Soil Physical Chemistry	AGRY 670, Spring – taught in 1994, and 1998

Experiences in Nanotechnology AG490A (with. H. Diefes-Dux, B. Applegate, M. Ladisch) 2000
Short Course at University of Utrecht, Netherlands. 20-24 May, 1996. Clays, Organo-clays, and Clay Analysis. 60 Students.

Courses taught at the University of Florida
- SOS 6414, Advanced Soil Chemistry
- SOS 6454, Soil Physical Chemistry
- SOS 6932, Geochemical Speciation Modeling
- SOS 6932B – Topics in Humic Substances

Presented short course on soil chemistry at Godollo University in Hungary Sept 2-10, 1995.

Professional organizations

American Chemical Society
Soil Science Society of America
The Clay Minerals Society
Australian Clay Minerals Society
AIPEA

Service to Professional Organizations

Service to The Clay Minerals Society

Organized and chaired session at the Annual Meetings of The Clay Minerals Society on clay organic interactions. Lake Tahoe NV Sept 25-30, 2011.
Vice President of The Clay Minerals Society (2004-2005)
President of The Clay Minerals Society (2005-2006)
Past President of The Clay Minerals Society (2006-2007)
Curator for the Source Clays Repository for The Clay Minerals Society collection of Source and Special Clay Minerals (2001-present)

Liaison to the American Chemical Society for The Clay Minerals Society (2000-2007)
Member of the Brindley Award Committee for The Clay Minerals Society (2000, 2007).
Chair of the Electronic Communication Committee for The Clay Minerals Society (1996-2010)
General Chair for the 1999 Clay Minerals Meetings at Purdue University June 26- July 1, 1999.
Elected to serve as a member of Council, Clay Minerals Society (1997-2000)
Organized special symposium at the Clay Minerals Meetings held in Saskatchewan, Canada (1994) entitled "Fundamental Properties of Clay Minerals" (co-sponsored with David Bish of Los Alamos National Laboratory).
Member of the Awards Committee for the Clay Minerals Society (1997-1999)
Associate Editor for Clays and Clay Minerals (1993-1996)
Program Development Committee for the Clay Minerals Society (1990 - 1992).
Frequent reviewer for Clays and Clay Minerals and special publications for CMS.

Service to the Soil Science Society of America

Co-organized Special Symposium entitled "Battles of Soil Scientists in Fukushima, Japan" at the Annual Meeting of the Soil Science Society of America (Nov 4th, 2013). Tampa, Florida.
Associate Editor for Soil Science Society of America (2001 – 2004)
Member of the Ad Hoc Committee on Digital Teaching Tools. (ASA-CSSA-SSSA)
Co-organized a conference entitled "Bouyoucos Conference on the Environmental Chemistry of the Clay-Water Interface" with S. A. Boyd and G. Vance. Soil Science Society of America. Honolulu, March 6-9, 2000.
Representative of the ASA-CSSA-SSSA to the American Association for the Advancement of Science (AAAS) (1993 – 1995)
Member of the Bouyoucus Conference Steering Committee (S772) for the Soil Science Society of America.
Member of the NCR 174 Committee on Synchrotron X-ray sources in Soil Science Research. (1993-96)
Member of the Editorial Board for the Methods of Soil Analysis Monograph for the Soil Science Society of America
Organized and chaired symposium entitled "Application of advanced physical analytical techniques in soil chemistry" at the 79th Annual Meeting of the American Society of Agronomy / Crop Science Society of America / Soil Science Society of America, Atlanta, GA. 29 November - 4 December 1987.
Frequent reviewer for SSSAJ, JEQ, and SSSA Special Publications.

Service to the American Chemical Society

Co-organized symposium at 246th American Chemical Society National Meetings in Sept of 2013 entitled "Environmental Fate and Reactivity of Highly Condensed Aromatic Carbon". With Tim Filley and Chad Jafvert.
Facilitated the coordination of the joint meeting between The Clay Minerals Society and the American Chemical Society Meetings held in New Orleans, LA (1996).
Liaison to the American Chemical Society for The Clay Minerals Society (2000-2007)

Frequent reviewer for Environmental Science and Technology, Journal of Physical Chemistry, Langmuir, Journal of Food and Agricultural Chemistry.

Service to other Mineral-related societies

Member of Editorial Board for Geochemical Transactions (2006-2010)
Member of the Scientific Organizing Committee for the EUROCLAY-95 Conference to be held in Leuven, Belgium, August, 1995.

Administrative activities

University-wide committees or assignments. (Committee name)

Member of the Operational Oversight Committee. A university-wide committee that reports to Vice President for Information Technology and System Chief Information Officer. The OOC focuses on the coordination and collaboration of IT resources across campus. It recommends IT priorities, oversees and endorses Common Good IT Services, and endorses IT budget requests. (2010-present).
Led task force for the Operational Oversight Committee to study "Software Licensing Strategies at Purdue University". Report was presented VP for Information Technology.
Member of Budget Interpretation, Evaluation and Review Committee. This university-wide committee reports to the University Resources Policy Committee of the Faculty Senate at Purdue. The committee is charged with continuing to collect and analyze data about Purdue's revenues and appropriations and to convey information about Purdue's budgetary policies to the Senate. Furthermore, with coordination and consultation with the University Resources Policy Committee (Member from 2009-2013).
Chair of the Academic Leadership Review Committee (University-wide committee to conduct a review of the Dean of the School of Agriculture (2000 – 2001). Reported to Vice President Ringel.
Search Committee for faculty positions in Environmental Engineering, Earth and Atmospheric Sciences, Civil Engineering and Agronomy. Purdue University (1996-present)
Faculty Fellow for Tarkenton Hall (residence hall at Purdue University, 1994 – 1997)

College of Agriculture committees or assignments. (Committee name)

Served on Selection Committee for the Ag Research Award AY 2011-current.
Served on the SLAM Committee developing a master plan for the future footprint of the College of Agriculture (2012-2013).
Chair of College of Agriculture Awards Committee. AY 2008-2009, and 2009-2010.
Represented the College of Agriculture for the Murphy Award Committee (2009, 2010)
Chair of the Agenda and Policy Committee, School of Agriculture (1998)
Member of the Agenda and Policy Committee from 1995-1998.

Departmental committees or assignments. (Committee name)

Appointed leader of the "Soil and Earth Systems Group" (2011-present)
Member of the Organizing Committee for the CREES Department Review (1996)
Chair of Departmental Gradual Committee, Agronomy Department, Purdue University (1996-1997). Member of committee from 1994-1997.
Numerous search committees for faculty positions.

Other

Service to the Department of Energy

External reviewer for the Department of Energy (1988, 1990, 1994, 1996)
Invited participant. DOE workshop entitled "Intermediate-scale experimentation to investigate microbiological, chemical, and hydrologic processes affecting subsurface reactive contaminant migration". Virden Conference Center, Lewes, Delaware, April 24-25, 1990.
Invited participant. DOE workshop on the Subsurface Transport Program. Washington, D. C., March 5-7, 1990.
Invited participant: DOE workshop "Synchrotron-based X-ray diffraction and scattering studies of soil materials" held at Argonne National Laboratory, January 8-10, 1990.
Invited participant. DOE workshop entitled Environmental Materials and Interfaces workshop held on Sept. 10-12, 1990 at Pacific Northwest Laboratories, Richland, Washington. Contact. Dr. Don Baer.
External reviewer for the Department of Energy (1988, 1990, 1994, 1996)
Chairman of the Environmental Working Group at the Department of Energy workshop entitled Chemistry at Interfaces, 6-8 October, 1987. Battelle Pacific Northwest Laboratories, Richland, WA. October 6-8, 1987.
Chairman of the Environmental Working Group at the Department of Energy workshop entitled Chemistry at Interfaces, 6-8 October, 1987. Battelle Pacific Northwest Laboratories, Richland, WA. October 6-8, 1987.

Other

Member of Class 10 of the ESCOP Leadership Development Program for the 2000-2001.
Invited to serve as an external review team member for the Physical Chemistry Department at the University of Sao Paolo - Sao Carlos in Brazil (March of 1998).