

CURRICULUM VITAE

NAME

Borch, Thomas

ADDRESS

Soil and Crop Sciences
College of Agricultural Sciences

1170 Campus Delivery

PHONE

(970) 491-6235

EDUCATION

2004 Ph D, MONTANA STATE UNIV

1999 MS, UNIV OF COPENHAGEN

1997 BS, UNIV OF COPENHAGEN

OTHER POSITIONS

August 2013 - Present Joint Appointment as Associate Professor, Dept. Civ. & Environmental Engineering, Colorado State University.

July 2011 - Present Associate Professor, Dept. Soil and Crop Sciences, Colorado State University.

2011 - Present Expert Witness and Consulting, Borch Environmental Pollution Consulting, LLC.

August 2007 - Present Joint Appointment as Assistant/associate Professor, Dept. Chemistry, Colorado State University.

2011 - 2012 Expert consultant (paid GS15 position) to EPA's Science Advisory Board (SAB) Radiation Advisory Comm, EPA.

March 2006 - July 2011 Assistant Professor, Dept. Soil and Crop Sciences, Colorado State University.

2004 - 2006 Post Doc, Stanford University.

PUBLISHED WORKS

Books

(2008). *Glossary of Soil Science Terms 2008 -- by Soil Science Glossary Terms Committee*. Soil Science Society of America (SSSA) ISBN 978-0- 89118-851-3 92 pages.

Refereed Journal Articles

McKee, G. A., Soong, J., Calderon, F., Borch, T., Cotrufo, M. F. (in press). An integrated spectroscopic and wet chemical approach to investigate grass litter decomposition chemistry. *Biogeochemistry*.

- Borch, T. Rainfall-Runoff of Anthropogenic Waste Indicators from Agricultural Fields Applied with Municipal Biosolids. Gray, J.L., Borch, T., Furlong, E.T., Davis, J.G., Yager, T.J., Yang, Y-Y., Kolpin, D.W. *Sci. Total Environ.*.
- Borch, T. Environmental Fate of Hydraulic Fracturing Fluid Additives after Spillage on Agricultural Topsoil. McLaughlin, M.C., Borch, T., Blotvogel, J. *Environ. Sci. Technol.*.
- Borch, T. Fractionation of dissolved organic matter (DOM) during adsorption to soil. Avneri-Katz, S., Polubesova, T., Young, R.B., McKenna, A.M., Chen, H., Corilo, Y.E., Borch, T., Chefetz, B. *Geochim. Cosmochim. Acta.*.
- McKee, G. A., Soong, J., Calderon, F., Borch, T., Cotrufo, M. F. An integrated spectroscopic and wet chemical approach to investigate grass litter decomposition chemistry. *Biogeochemistry*.
- Borch, T. Technical Note: An improved approach to determining background aerosol concentrations with PILS sampling on aircraft. Fukami, C.S., Sullivan, A.P., Fulgham, S.R., Murschell, T., Borch, T., Smith, J.N., Farmer, D. *Atmospheric Environment*.
- Kahrilas, G. A., Blotvogel, J., Stewart, P. S., Borch, T. (2015). Biocides in hydraulic fracturing fluids: a critical review of their usage, mobility, degradation, and toxicity. *Environmental science & technology*, 49(1), 16–32.

Non-Refereed Journal Articles

- Young, R. B., Latch, D. E., Mawhinney, D. B., Nguyen, T.-H., Davis, J. C., Borch, T. Supporting Information for Direct Photodegradation of Androstenedione and Testosterone in Natural Sunlight: Inhibition by Dissolved Organic Matter and Reduction of Endocrine Disrupting Potential.
- Borch, T. Tuesday, June 19, 2007-8: 50 AM Snake River (Boise Centre on the Grove).
- Thurman, E. M., Ferrer, I., Blotvogel, J., Borch, T. (2014). Analysis of hydraulic fracturing flowback and produced waters using accurate mass: identification of ethoxylated surfactants. *Analytical chemistry*, 86(19), 9653–9661.
- Grossberger, A., Hadar, Y., Borch, T., Chefetz, B. (2014). Biodegradability of pharmaceutical compounds in agricultural soils irrigated with treated wastewater. *Environmental Pollution*, 185, 168–177.
- Young, R. B., Chefetz, B., Liu, A., Desyaterik, Y., Borch, T. (2014). Direct photodegradation of lamotrigine (an antiepileptic) in simulated sunlight-pH influenced rates and products. *Environmental Science: Processes & Impacts*, 16(4), 848–857.
- Troyer, L. D., Stone, J. J., Borch, T. (2014). Effect of biogeochemical redox processes on the fate and transport of As and U at an abandoned uranium mine site: an X-ray absorption spectroscopy study. *Environmental Chemistry*, 11(1), 18–27.
- Ruedig, E., Bhattacharyya, A., Borch, T., Johnson, T. E., Till, J. (2014). Evaluation of human health risk from in situ recovery uranium mining, pre-and post-mining, and post-restoration.
- Borch, T., Gough, M. (2014). Impact of Hormones in Runoff from the Land Application of Biosolids. *Proceedings of the Water Environment Federation*, 2014(6), 6145–6157.
- Porsch, K., Rijal, M. L., Borch, T., Troyer, L. D., Behrens, S., Wehland, F., Appel, E., Kappler, A. (2014). Impact of organic carbon and iron bioavailability on the magnetic susceptibility of soils. *Geochimica et Cosmochimica Acta*, 128, 44–57.

- Olson, M. R., Blotvogel, J., Borch, T., Petersen, M., Royer, R., Sale, T. (2014). Long-term potential of in situ chemical reduction for treatment of polychlorinated biphenyls in soils. *Chemosphere*, 114, 144–149.
- Troyer, L. D., Tang, Y., Borch, T. (2014). Simultaneous reduction of arsenic (V) and uranium (VI) by mackinawite: role of uranyl arsenate precipitate formation. *Environmental science & technology*, 48(24), 14326–14334.
- Young, R. B., Latch, D. E., Mawhinney, D. B., Nguyen, T.-H., Davis, J. C., Borch, T. (2013). Direct photodegradation of androstenedione and testosterone in natural sunlight: inhibition by dissolved organic matter and reduction of endocrine disrupting potential. *Environmental science & technology*, 47(15), 8416–8424.
- Shimizu, M., Zhou, J., Schröder, Christian, Obst, M., Kappler, A., Borch, T. (2013). Dissimilatory reduction and transformation of ferrihydrite-humic acid coprecipitates. *Environmental science & technology*, 47(23), 13375–13384.
- Blotvogel, J., Kahrilas, G. A., Corrin, E., Borch, T. (2013). Fate of hydraulic fracturing chemicals under down-hole conditions. *AGU Fall Meeting Abstracts*, 1, 07.
- BERGSTROM, R. M., RHOADES, C. C., MELZER-DRINNEN, S., Borch, T., HUBBARD, R., ELDER, K., KELLY, E. (2013). KEY ELEMENTS OF LANDSCAPES CONDITION THE STORAGE AND MOBILITY OF SOIL NUTRIENTS IN MOUNTAINOUS ECOSYSTEMS OF THE WESTERN US. 2013 GSA Annual Meeting in Denver.
- Stratton, J. J., Ham, J. M., Borch, T. Ammonia Emissions from Sub-Alpine Forest and Mountain Grassland Soils. *Atmospheric Environment*.
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- Kozubal, M. A., Macur, R. E., Jay, Z. J., Beam, J. P., Malfatti, S. A., Tringe, S. G., Kocar, B. D., Borch, T., Inskeep, W. P. (2012). Microbial iron cycling in acidic geothermal springs of Yellowstone National Park: integrating molecular surveys, geochemical processes, and isolation of novel Fe-active microorganisms. *The microbial ferrous wheel: iron cycling in terrestrial, freshwater, and marine environments*, 154.
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- Yang, Y.-Y., Gray, J. L., Furlong, E. T., Davis, J. G., ReVello, R. C., Borch, T. (2012). Steroid hormone runoff from agricultural test plots applied with municipal biosolids. *Environmental science & technology*, 46(5), 2746–2754.
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- Blotevogel, J., Mayeno, A. N., Sale, T. C., Borch, T. (2011). Prediction of contaminant persistence in aqueous phase: a quantum chemical approach. *Environmental science & technology, 45*(6), 2236–2242.
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- Yang, Y.-Y., Borch, T., Young, R. B., Goodridge, L., Davis, J. G. (2010). Degradation kinetics of testosterone by manure-borne bacteria: Influence of temperature, pH, glucose amendments, and dissolved oxygen. *Journal of environmental quality, 39*(4), 1153–1160.
- (2010). How electron flow controls contaminant dynamics. *Environ Sci Technol, 44*, 6-Mar.
- Galles, K., Stratton, J., Westover, E., Levin, E. J. T., Ham, J. M., Borch, T., Wagner, J. J., Kreidenweis, S., Collett, J. L. (2010). Laboratory chamber system for measuring ammonia emissions from intact soil cores: studies of cattle feedlots and forest soils. *29th Conference on Agricultural and Forest Meteorology*.
- Stratton, J., Levin, E., Ham, J., Collett, J., Borch, T. (2010). Quantifying Ammonia Emissions from High Elevation Grassland and Forest Soils. *AGU Fall Meeting Abstracts, 1*, 0456.
- Blotevogel, J., Borch, T., Desyaterik, Y., Mayeno, A. N., Sale, T. C. (2010). Quantum chemical prediction of redox reactivity and degradation pathways for aqueous phase contaminants: An example with HMPA.

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- Borch, T., Camper, A. K., Biederman, J. A., Butterfield, P. W., Gerlach, R., Amonette, J. E. (2008). Evaluation of characterization techniques for iron pipe corrosion products and iron oxide thin films. *Journal of Environmental Engineering*, 134(10), 835–844.
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Science Society of America, American Society of Agronomy, Crop Science Society of America, Gulf Coast Association of Geological Societies with the Gulf Coast Section of SEPM.

- Geesey, G., Borch, T., Reardon, C. (2008). Resolving biogeochemical phenomena at high spatial resolution through electron microscopy. *Geobiology*, 6(3), 263–269.
- Borch, T., Masue, Y., Kukkadapu, R. K., Fendorf, S. (2007). Phosphate imposed limitations on biological reduction and alteration of ferrihydrite. *Environmental science & technology*, 41(1), 166–172.
- Jones, J., Borch, T., Young, R. B., Davis, J. G., Simpson, C. R. (2007). PHOTOLYSIS OF TESTOSTERONE, PROGESTERONE AND 17 β -ESTRADIOL BY UVA LIGHT. *Citeseer*.
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- Masue, Y., Borch, T., Fendorf, S. (2006). Factors Affecting Arsenic Retention Under Anaerobic Conditions.
- Borch, T., Mulisa, Y. A., Ippolito, J., Hansen, N., Jones, J. (2006). Fate and Transport of Phosphorus in Biosolids and Water Treatment Residuals Amended Soils under Anaerobic Conditions.
- Borch, T., Masue, Y., Fendorf, S. (2006). Impact of Phosphate on Iron Oxide Bioreducibility and Mineralization. *The 18th World Congress of Soil Science*.
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- Jones, J., Borch, T., Hansen, N., Davis, J., Simpson, C. (2006). Photodegradation of Manure-Borne Steroid Hormones.
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Non-Refereed Proceedings or Transactions

- Blotevogel, J., Kahrilas, G. A., Corrin, E. R., Landry, C. F., Borch, T. (2014). Degradation of the biocide glutaraldehyde under down-hole conditions. *Abstracts of Papers of the American Chemical Society* (vol. 247).
- Blotevogel, J., Jasmann, J. R., Sale, T. C., Borch, T. (2014). Electrolytic degradation of 1, 4-dioxane catalyzed by titanium dioxide pellets in the absence of light. *ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY* (vol. 247).
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- Kahrilas, G. A., Blotevogel, J., Corrin, E. R., Borch, T. (2013). Fate of hydraulic fracturing chemicals under down-hole conditions. *Abstracts of Papers of the American Chemical Society* (vol. 246).
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Borch, T., Shimizu, M., Obst, M., Zhu, M., Kappler, A. (2013). Structure and reactivity of ferrihydrite-organic matter coprecipitates. *ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY* (vol. 245).

Blotevogel, J., Mayeno, A. N., Sale, T. C., Borch, T. (2011). Quantum chemical prediction of degradation mechanisms, kinetics, and pathways for aqueous phase contaminants. *ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY* (vol. 242).

Ham, J. M., Williams, C., Stratton, J., Borch, T. (2011). Weather-based conditional sampling of ammonia near livestock operations using passive samplers. *ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY* (vol. 242).

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Blotevogel, J., Borch, T., Gilbert, D. M., Sale, T. C. (2008). GEOC 41-Thermodynamic modeling of contaminant fate in subsurface environments. *ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY* (vol. 236).

Troyer, L. D., Borch, T., Gerlach, R., Inskeep, W. P. (2008). GEOC 43-Iron (hydr) oxide controls on (bio) reductive transformation of nitroaromatic compounds. *ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY* (vol. 236).

Borch, T., Fendorf, S. (2006). Phosphate adsorption on iron oxides: Impact on reductive biomineralization. *ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY* (vol. 231).

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Book Review

- (2009). *Presence, Analysis, and Fate of Steroid Sex Hormones In Freshwater Ecosystems - A Review* (pp. 103-164). Chapter 4 in *Aquatic Ecosystem Research Trends*, Nairne, GH, Ed Nova Science Publishers, Inc: Hauppauge, New York.

Technical Report

- Borch, T., Young, R. B., Jones, J., Davis, J. G., Simpson, C. R. (2007). *Degradation of Steroid Hormones in the Environment..* ASA-CSSA-SSSA Meeting presentation.

PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS

- June 2016, "Borch, T., Daugherty, E., Nico, P., Gilbert, B. Role of NOM complexation in Fe(II) stabilization. The 26th Goldschmidt Conference 2016 in Yokohama, Japan."
- November 2015, "Borch, T., Daugherty, E. Temperature Controls on Preferential Adsorption of Dissolved Organic Matter on Iron Oxides. ASA, CSSA, and SSSA 2015 International Annual Meeting, Nov. 15-18, 2015, in Minneapolis, MN."
- November 2015, "Volker, M., Heyob, K., Blotvogel, J., Borch, T., Plata, D.L., Mouser, P.J. Accumulation of shorter ethoxylate chain lengths during anaerobic biodegradation of nonylphenol ethoxylate surfactants used in hydraulic fracturing fluids. 2015 GSA Annual Meeting in Baltimore, Maryland, USA, 1-4 November 2015."
- October 2015, "Borch, T. Fate of hydraulic fracturing chemicals under downhole conditions and after contamination of surface soils. School of Earth and Atmospheric Sciences. Georgia Institute of Technology. October 1st, 2015."
- October 2015, "Borch, T. Invited by The Danish Society for Analytical Chemistry to present two invited talks at their workshop entitled "Chemical techniques for analytical characterization of hydraulic fracturing chemicals". University of Copenhagen, October 23rd, 2015."
- October 2015, "Borch, T. NSF Food-Energy-Water Nexus Workshop. South Dakota School of Mines & Technology Surbeck Center on October 19-20, 2015. [I cancelled my presentation]."
- October 2015, "Roebbert, Y., Bhattacharyya, A., Loreggian, L., Pierau, N., Borch, T., Bernier-Latmani, R., Weyer, S. Biotic and abiotic 238U/235U fractionation – applications to bioremediation and U ore roll-front

- deposits. GeoBerlin 2015, 4-7 Oct., 2015. Freie Universität Berlin, Berlin, Germany."
- August 2015, "Bhattacharyya, A., Campbell, K.M., Roebbert, Y., Weyer, S., Bernier-Latmani, R., Borch, T. Elucidating the Role of Non-Crystalline U(IV) in Uranium Roll-Front Formation. The 2015 Goldschmidt Conference, 16-21 August 2015, Prague, Czech Republic."
- August 2015, "Pallud, C., Shilling, K., Schneider, L., Borch, T., Rhoades, C. Temperature and Redox Effects on Iron Reduction Kinetics and Organic Carbon Transport in Wetland Soils. The 2015 Goldschmidt Conference, 16-21 August 2015, Prague, Czech Republic."
- July 2015, "Borch, T. Transformation and reactivity of hydraulic fracturing chemicals under downhole conditions: Focus on glutaraldehyde. 19th Annual Green Chemistry & Engineering Conference that will be held in North Bethesda, Maryland, July 14-16, 2015."
- July 2015, "Borch, T., Blotevogel, J. Understanding the Transformations and Interactions of Hydraulic Fracturing Fluid Additives: A Critical Step Towards Optimizing Extraction Efficacy While Reducing the Environmental Footprint. 19th Annual Green Chemistry & Engineering Conference that will be held in North Bethesda, Maryland, July 14-16, 2015."
- July 2015, "Kahrilas, G. Blotevogel, J., Borch, T. Fate of hydraulic fracturing chemicals under downhole conditions. Montana Biofilm S&T Meeting, Montana State University, Bozeman, Montana, July 13–16, 2015."
- June 2015, "Blotevogel, J., Jasmann, J., Myers, M., Gedalanga, P., Borch, T., Mahendra, S. Electrolytic Stimulation of Aerobic 1,4-Dioxane Biodegradation. Annual Meeting of the University Consortium for Field-Focused Groundwater Contamination Research Guelph, ON, June 2-4, 2015."
- May 2015, "Pallud, C., Shilling, K., Schneider, L., Borch, T., Rhoades, C. Biogeochemical iron cycling in subalpine wetlands: Kinetics and impact on organic carbon transport. The 2015 Joint Assembly will be held Sunday through Thursday, 3-7 May 2015 at the Palais des congrès de Montréal, Montreal, Canada."
- April 2015, "Blotevogel, J., Borch, T. Fate of Hydraulic Fracturing Chemicals under Downhole Conditions and after Inadvertent Releases. National Science Foundation Sponsored Workshop: Development of Green Fracturing Fluids and Sustainable Remediation and Containment Technologies Conference on April 21, 2015 on the University of Arkansas at Little Rock campus."
- March 2015, "Bhattacharyya, A., Campbell, K.M., Weyer, S., Borch, T. Elucidating the role of monomeric U(IV) in uranium ore deposit genesis. 249th ACS National Meeting & Exposition. March 22-26, 2015, Denver, CO."
- March 2015, "Borch, T., Daugherty, E., Nico, P., Gilbert, B. Role of NOM complexation in Fe(II) stabilization. 249th ACS National Meeting & Exposition. March 22-26, 2015, Denver, CO"
- March 2015, "Borch, T., Kahrilas, G., Thurman, E.M., Ferrer, I., Blotevogel, J. How stable are hydraulic fracturing fluid chemicals deep below the Earth's surface? 249th ACS National Meeting & Exposition. March 22-26, 2015, Denver, CO"
- March 2015, "Borch, T., Troyer, L., Campbell, K., Stone, J., Lezama-Pacheco, J., Bargar, J. Fate of U and As in biostimulated mine tailings sediments. 249th ACS National Meeting & Exposition. March 22-26, 2015, Denver, CO"
- March 2015, "Daugherty, E., Borch, T. Temperature effects on carbon sequestration by iron oxide coated mineral surfaces. 249th ACS National Meeting & Exposition. March 22-26, 2015, Denver, CO."

- March 2015, "Heyob, K., Blotevogel, J., Borch, T., Mouser, P. Anaerobic biodegradation of polypropylene glycols within hydraulic fracturing fluid. 249th ACS National Meeting & Exposition. March 22-26, 2015, Denver, CO".
- March 2015, "Kahrilas, G., Blotevogel, J., Borch, T. Transformation kinetics and pathways of hydraulic fracturing biocides under downhole conditions: Focus on glutaraldehyde. 249th ACS National Meeting & Exposition. March 22-26, 2015, Denver, CO."
- March 2015, "McKee, G., Rhoades, C., Borch, T. Using Fourier transform ion cyclotron resonance mass spectrometry to identify potential disinfection byproduct precursors in leaf litter leachate. 249th ACS National Meeting & Exposition. March 22-26, 2015, Denver, CO."
- March 2015, "McLaughlin, M., Borch, T., Blotevogel, J. Fate of hydraulic fracturing chemicals in agricultural topsoil. 249th ACS National Meeting & Exposition. March 22-26, 2015, Denver, CO."
- March 2015, "Thurman, E.M., Ferrer, I., Blotevogel, J., Borch, T. Analysis of hydraulic fracturing flowback and produced waters using accurate mass: Identification of ethoxylated surfactants. 249th ACS National Meeting & Exposition. March 22-26, 2015, Denver, CO."
- November 2014, "Bhattacharyya, A., Borch, T. Biogeochemical Characterization of Uranium from a Pre-Mining and Post-Mining Uranium in-Situ Recovery Mine at the ASA, CSSA, and SSSA International Annual Meetings, Nov. 2-5, 2014, in Long Beach, CA.", Long Beach, CA.
- November 2014, "Borch, T. Daugherty, E., Nico, P., Gilbert, B. Impact of Dissolved Organic Matter Chemistry on the Fate of Iron(II) in Oxic Environments at the ASA, CSSA, and SSSA International Annual Meetings, Nov. 2-5, 2014, in Long Beach, CA.", (Presenter) Borch, T., Long Beach, CA.
- November 2014, "Campbell, K., Bhattacharyya, A., Borch, T. Microbial Community Composition in Baseline and Post-Mining Core Samples at an in-Situ Recovery (ISR) Uranium Mine at the ASA, CSSA, and SSSA International Annual Meetings, Nov. 2-5, 2014, in Long Beach, CA.", Long Beach, CA.
- November 2014, "Daugherty, E., Borch, T. Influence of Temperature on the Sorption of Humic Substances on Ferrihydrite-Coated Quartz Under Dynamic Flow Conditions at the ASA, CSSA, and SSSA International Annual Meetings, Nov. 2-5, 2014, in Long Beach, CA.", Long Beach, CA.
- November 2014, "Kahrilas, G., Blotevogel, J., Corrin, E., Borch, T. Geochemical Impacts on the Degradation of the Hydraulic Fracturing Biocide Glutaraldehyde Under Downhole Conditions at the ASA, CSSA, and SSSA International Annual Meetings, Nov. 2-5, 2014, in Long Beach, CA.", Long Beach, CA.
- November 2014, "Schilling, K., Richards, C., Borch, T., Pallud, C. Microbial Fe(III) Reduction in Subalpine Wetlands: Key Process Governing the Fate of Organic Carbon at the ASA, CSSA, and SSSA International Annual Meetings, Nov. 2-5, 2014, in Long Beach, CA.", Long Beach, CA.
- November 2014, "Stone, J., Truax, R., Borch, T., Johnson, R.H. Geochemical Modeling of the Down Gradient Transport Potential of Uranium at an in-Situ Recovery (ISR) Facility at the ASA, CSSA, and SSSA International Annual Meetings, Nov. 2-5, 2014, in Long Beach, CA.", Long Beach, CA.
- October 2014, "Blotevogel, J., Borch, T. The Persistence of Perfluorinated Surfactants Used in Fire-Fighting Foams: An Example with Perfluorooctanoic Acid (PFOA) at the University Consortium 2014 Fall Focus Meeting Brown Palace Hotel, Denver, Colorado – Central City Room, October 30 and 31, 2014.", Brown Palace Hotel, Denver, Colorado.

- October 2014, "Borch, T., Pallud, P., Schilling, K., Daugherty, E., McKee, G.A., Rhoades, C., Kelly, E.F. Biogeochemical Iron Cycling in Subalpine Wetlands: Impact on Fate and Transport of Organic C and Nutrients. NIWQP/AFRI PD meeting in Washington DC, October 28-29, 2014.", (Presenter) Borch, T., Washington DC.
- September 2014, "Borch, T., Gough, M. Impact of Hormones in Runoff from the Land Application of Biosolids. WEFTEC 2014, New Orleans, September 27 – October 1, 2014.", (Presenter) Borch, T., New Orleans.
- September 21, 2014, "Stone, J.J., Borch, T., Bhattacharyya, A., Johnson, T., Ruedig, E., Johnson, R. Restoration challenges for in-situ recovery uranium mining. Presented the 7th Conference of Uranium Mining and Hydrogeology, Freiberg, Germany, September 2014.", Freiberg, Germany.
- August 2014, "Borch, T. Fate of U and As in Co-Contaminated Systems under Various Redox Conditions. Telluride Science Research Center Workshop: Biogeochemistry and Redox Transformations of Iron, August 4-8, 2014, Telluride, CO.", (Presenter) Borch, T., Telluride, CO.
- August 2014, "Jasmann, J., Borch, T. Sale, T.C., Blotevogel, J. Electrolytic Degradation of Aqueous Contaminants Catalyzed by Novel Titanium Dioxide Pellets. 4th International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment (EmCon2014), University of Iowa, Iowa City, Iowa, August 19-22, 2014.", Iowa City, Iowa.
- August 2014, "Young, R.B. Chefetz, B., Liu, A., Desyaterik, Y., Borch, T. Photodegradation of Lamotrigine (an Antiepileptic) in Simulated Sunlight – pH-influenced Rates and Products. 4th International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment (EmCon2014), University of Iowa, Iowa City, Iowa, August 19-22, 2014.", Iowa City, Iowa.
- June 19, 2014, "Borch, T. Fate of Hydraulic Fracturing Fluids Used for Unconventional Shale Gas Development: An Overview. Eawag, Swiss Federal Institute of Aquatic Science and Technology. Duebendorf, Switzerland, June 19, 2014.", (Presenter) Borch, T., Duebendorf, Switzerland.
- June 8, 2014, "Daugherty, E., Gilbert., B., Nico, P., Borch, T. Coordination and redox chemistry of aqueous Fe(II) and dissolved organic matter. Goldschmidt2014 in Sacramento, California, June 8-13, 2014.", Sacramento, California.
- June 8, 2014, "Percak-Dennett, E., Roden, E., Xu, H., Konishi, H., Chan, C., Bhattacharyya, A., Borch T. Microbial chemolithoautotrophic oxidation of pyrite at neutral pH. Goldschmidt2014 in Sacramento, California, June 8-13, 2014.", Sacramento, California.
- June 2, 2014, "Borch, T. Fate of U and As in Co-Contaminated Systems under Reducing Conditions. Ecole polytechnique fédérale de Lausanne (EPFL), Switzerland, June 2, 2014.", (Presenter) Borch, T., cole polytechnique fédérale de Lausanne (EPFL), Switzerland.
- May 23, 2014, "Borch, T. Environmental Fate and Transport of Selected Endocrine and Pharmaceutically Active Compounds. The EAWAG Distinguished Lecturer Series. Eawag, Swiss Federal Institute of Aquatic Science and Technology. Duebendorf, Switzerland, May 23, 2014.", (Presenter) Borch, T., Borch, T. Environmental Fate and Transport of Selected Endocrine and Pharmaceutically Active Compounds. The EAWAG Distinguished Lecturer Series. Eawag, Swiss Federal Institute of Aquatic Science and Technology. Duebendorf, Switzerland.
- May 19, 2014, "Truax, R., Stone, J., Borch, T., Johnson, T., Johnson, R. Geochemical Modeling of Uranium In-situ Recovery (ISR) Post-Mining Site Conditions. GSA Rocky Mountain Section (66th Meeting). Bozeman, Montana, USA, on 19–21 May 2014.", Bozeman, Montana, USA.

- May 18, 2014, "McKee, G.A., Rhoades, C.C., Borch, T. Effect of Vegetation Type on Dissolved Organic Matter Chemistry and Disinfection Byproduct Formation. Joint Aquatic Sciences Meeting. Portland, Oregon, USA, 18-23 May 2014.", Portland, Oregon, USA.
- May 8, 2014, "Borch, T. Impact of C and P on Dissimilatory Reduction and Transformation of Ferrihydrite. Seminar in Prof. Dr. Johan Six's Group. ETH Zurich, Zurich, Switzerland, May 8, 2014.", (Presenter) Borch, T., ETH Zurich, Zurich, Switzerland.
- April 9, 2014, "Stone, J., Borch, T., Bhattacharyya, A., Johnson, T., Ruedig, E., Johnson, R. In-situ recovery uranium mining restoration challenges. 2014 Western South Dakota Hydrology Meeting. Rushmore Plaza Civic Center, April 9, 2014.", Rapid City, SD, USA.
- April 9, 2014, "Truax, R., Stone, J., Borch, T., Johnson, T., Johnson, R. In-situ recovery uranium mining restoration challenges: geochemical modeling of post-mining site conditions. 2014 Western South Dakota Hydrology Meeting. Rushmore Plaza Civic Center, April 9, 2014.", Rapid City, SD, USA.
- April 2, 2014, "Borch, T. Fate of Hydraulic Fracturing Fluids Used for Unconventional Shale Gas Development: An Overview. Department of Soil and Water Sciences at The Hebrew University of Jerusalem. April 2, 2014.", (Presenter) Borch, T., The Hebrew University of Jerusalem, Israel.
- March 28, 2014, "Borch, T. Global Implications of Iron Cycling. Department of Chemistry at Umeå University, Sweden. March 28, 2014.", (Presenter) Borch, T., Umeå University, Sweden.
- March 19, 2014, "Stone, J.J., Borch, T., Bhattacharyya, A., Johnson, T., Ruedig, E., Johnson, R. In-situ recovery uranium mining restoration challenges. The 2014 Environmental and Groundwater Quality Conference, Ft. Pierre, SD, March 2014.", Ft. Pierre, SD, USA.
- March 16, 2014, "Blotvogel, J., Kahrilas G., Corrin E.R., Landry, C.F., Borch T. Degradation of the biocide glutaraldehyde under down-hole conditions. 247th ACS National Meeting Dallas, TX, March 16-20, 2014.", Dallas, TX, USA.
- February 24, 2014, "Borch, T. Current Environmental Research in the Borch Lab: An Overview. Spring Seminar Series in Prof. Dr. Ruben Kretschmar's Group. ETH Zurich, Zurich, Switzerland, February 24, 2014.", (Presenter) Borch, T., ETH Zurich, Zurich, Switzerland.
- December 9, 2013, "Blotvogel, J., Kahrilas, G., Corrin, E.R., Borch T. Fate of hydraulic fracturing chemicals under down-hole conditions. American Geophysical Union's 47th annual Fall Meeting. San Francisco, California, 9-13 December 2013.", San Francisco, California, USA.
- November 3, 2013, "Leone, L., Daugherty, E., Bhattacharyya, B., Borch, T. Temperature Controls On Sorption of Humic Substances On Iron Oxides Under Dynamic Flow Conditions. ASA, CSSA & SSSA International Annual Meeting, Tampa, Florida, 3-6 November 2013.", (Presenter) Borch, T., Tampa, Florida.
- November 3, 2013, "Roosendaal, D., McKee, G.A., Rhoades, C.C., Borch, T. Impact of Vegetation-Derived Dissolved Organic Carbon on Disinfection Byproduct Formation During Drinking Water Treatment. ASA, CSSA & SSSA International Annual Meeting, Tampa, Florida, 3-6 November 2013.", Tampa, Florida, USA.
- October 27, 2013, "Bergstrom, R.M., Rhoades, C.C., Melzer-Drinnen, S., Borch, T., Hubbard, R., Elder, K., Kelly, E.F. Key elements of landscapes condition the storage and mobility of soil nutrients in mountainous ecosystems of the western U.S. Geological Society of America Annual Meeting, Denver, Colorado, 27-30 October, 2013.", Denver, Colorado, USA.
- October 27, 2013, "McKee, G.A., Roosendaal, D., Rhoades, C.C., Borch, T. Linking vegetation-derived carbon to

disinfection byproducts in litter and stream water in bark beetle-infested forests. Geological Society of America Annual Meeting, Denver, Colorado, 27-30 October, 2013.", Denver, Colorado, USA.

October 24, 2013, "Borch, T. Sorption Processes for Organic and Inorganic compounds. University Consortium for Field-Focused Groundwater Contamination Research 2013 Focus Meeting. Brown Palace Hotel, Denver, Colorado, October 24-25, 2013.", (Presenter) Borch, T., Denver, CO.

September 29, 2013, "Bhattacharyya, A., Johnson, T., Stone, J. and Borch, T. Biogeochemical Characterization of Uranium from Baseline- and Post-Mining Site Conditions at an In-situ Recovery Uranium Mine. U-2013 Global Uranium Symposium, Corpus Christi, TX, Sep 29 – Oct 3, 2013.", Corpus Christi, TX, USA.

September 25, 2013, "Borch, T. Does Hydraulic Fracturing, Uranium Mining, or Dissolved Organic Matter Affect Our Health and Environment? NREL Fall 2013 Seminar Series "Using Aquatic Ecosystem Science to Inform Freshwater Resource Use and Sustainability", Colorado State University, September 25, 2013.", (Presenter) Borch, T., Fort Collins, CO.

September 23, 2013, "Stone, J., Truax, R., Borch, T., Johnson, T., Johnson, R. Geochemical Characterization of Uranium from Baseline – and Post-Mining Site Conditions at an In-situ Recovery Uranium Mine. The 58th Annual Midwest Groundwater Conference and Bakken Oil Field Tour in Bismarck, ND, September 23-25, 2013.", Bismarck, ND, USA.

September 12, 2013, "Jasmann, J.; Borch, T.; Sale, T.C.; Blotevogel, J. (2013): Catalyzed Electrolytic Degradation of 1,4-Dioxane in Contaminated Water. Consortium for Research and Education on Emerging Contaminants (CREEC). Denver, CO, 09/12/2013.", Denver, CO, USA.

September 8, 2013, "Kahrilas G., Blotevogel J., Corrin E.R., Borch T. Fate of hydraulic fracturing chemicals under down-hole conditions. Abstracts of Papers of the American Chemical Society. 2013;246:1. 246th National Meeting of the American-Chemical-Society (ACS). Indianapolis, IN, SEP 08-12, 2013.", Indianapolis, IN, USA.

August 25, 2013, "Troyer, L. D., Stone, J.J., Borch, T. Impact of As(V) on abiotic reduction of U(VI) by mackinawite. Troyer L, Stone J & Borch T (2013) Mineralogical Magazine, 77(5) 2359. Goldschmidt 2013. Florence, Italy, August 25-30, 2013.", (Presenter) Borch, T., Florence, Italy.

May 29, 2013, "Blotevogel, J.; Jasmann, J.; Borch, T.; Sale, T.C.; (2013): Electrolytic Degradation of 1,4-Dioxane. University Consortium for Field-Focused Groundwater Contamination Research, Annual Progress Meeting. Guelph, ON, Canada, May 29-31, 2013.", Guelph, ON, Canada.

May 29, 2013, "Borch, T. Impact of Biogeochemical Redox Processes on Transport and Fate of Arsenic and Uranium: From Molecular to Field Scales. University Consortium for Field-Focused Groundwater Contamination Research, Annual Progress Meeting. Guelph, ON, Canada, May 29-31, 2013.", (Presenter) Borch, T., Guelph, ON, Canada.

May 8, 2013, "Roosendaal, D., McKee, G.A., Rhoades, C.C., Borch, T. Impact of vegetation derived dissolved organic carbon on disinfection byproduct formation during drinking water treatment. Center for Environmental Medicine Spring Research Symposium, Fort Collins, Colorado, 8 May 2013.", Fort Collins, Colorado, USA.

April 8, 2013, "Borch, T. Shimizu, M., Obst, M., Zhu, M., Kappler, A. Structure and reactivity of ferrihydrite-organic matter coprecipitates. 245th ACS National Meeting that will be held in New Orleans, Louisiana, April 7-11, 2013.", (Presenter) Borch, T., New Orleans, Louisiana, USA.

April 7, 2013, "Borch, T. Shimizu, M., Zhou, J., Obst, M., Schröder, C., Kappler, A. Dissimilatory reduction and

transformation of ferrihydrite-natural organic matter co-precipitates. 245th ACS National Meeting that will be held in New Orleans, Louisiana, April 7-11, 2013.", (Presenter) Borch, T., New Orleans, Louisiana, USA.

April 7, 2013, "Troyer, L., Stone, J.J., Borch, T. Impact of biogeochemical redox processes on arsenic and uranium dynamics in mine tailings contaminated sediments. 245th ACS National Meeting that will be held in New Orleans, Louisiana, April 7-11, 2013.", New Orleans, Louisiana, USA.

March 25, 2013, "Jasmann, J.; Borch, T.; Sale, T.C.; Blotevogel, J. Catalyzed Electrolytic Degradation of 1,4-Dioxane in Contaminated Water. AGU Hydrology Days 2013. Fort Collins, CO, 03/25-03/27/2013.", Fort Collins, CO, USA.

March 3, 2013, "Borch, T. Shimizu, M., Zhou, J., Obst, M., Schröder, C., Kappler, A. Dissimilatory Reduction and Transformation of Ferrihydrite-Natural Organic Matter Co-precipitates. Monte Verità Conference "Iron Biogeochemistry - From Molecular Processes to Global Cycles to be held March 3-8, 2013. CSF (Centro Stefano Franscini), Monte Verità Ascona, Switzerland.", (Presenter) Borch, T., Ascona, Switzerland.

February 25, 2013, "Borch, T. Steroid Sex Hormones in the Environment. Animal Reproduction and Biotechnology Laboratory, Colorado State University, February 25, 2013.", (Presenter) Borch, T., Colorado State University.

2012, "Blotevogel, J.; Jasmann, J.; Sale, T.C.; Borch, T. (2012): Electrolytic treatment of new and emerging groundwater contaminants. University Consortium for Field-Focused Groundwater Contamination Research, Annual Progress Meeting. Guelph, ON, Canada, June 12-14, 2012."

2012, "Borch, T. Impact of Biogeochemical Redox Processes on U and As Dynamics within a U Mining Impacted Watershed. 'Uranium biogeochemistry: transformations and applications', International Workshop, March 11-16, 2012, CSF (Centro Stefano Franscini), Monte Verità Ascona, Switzerland."

2012, "Borch, T. Endocrine Disrupters in Biosolids. RMWEA Biosolids Committee Annual Workshop, Biosolids and Agriculture - Can the Relationship Continue? Colorado State University, Nov. 15, 2012."

2012, "Borch, T. Environmental Fate of Sex Hormones and Iron Oxides: Molecular to Field Scale Observations. Center for Environmental Medicine, Colorado State University, January 25, 2012."

2012, "Borch, T. Impact of organic matter on Fe reduction and transformation: lab to

field. Biogeochemistry and Redox Transformations of Iron. Telluride Science Research Center Workshop, Telluride Colorado, August 6-10, 2012."

2012, "Borch, T. Sex Hormone Biodegradation and Runoff under Agriculturally Relevant Conditions. Colorado School of Mines, April 12, 2012.", (Presenter) Borch, T., Colorado School of Mines.

2012, "Gough, M., Borch, T. Impact of Hormones/EDCs in Runoff from the Land Application of Biosolids. 2012 RMSAWWA / RMWEA Joint Annual Conference. Copper Mountain Resort, Colorado September 9-12, 2012."

2012, "Jasman, J.; Borch, T.; Sale, T.C.; Blotevogel, J. (2012): Desorption and Degradation of Hydrophobic Contaminants in Non-aqueous Media. AGU Hydrology Days 2012. Fort Collins, CO, March 21-23, 2012."

2012, "Jasman, J.; Borch, T.; Sale, T.C.; Blotevogel, J. (2012): Desorption and Degradation of Hydrophobic Contaminants in Non-aqueous Media. University Consortium for Field-Focused Groundwater Contamination Research, Annual Progress Meeting. Guelph, ON, Canada, June 12-14, 2012."

2012, "Lavallee, J.M., Conant, R.T., Obst, M., Borch, T., Regier, T. The influence of temperature on carbon chemistry of organo-mineral complexes. Goldschmidt 2012, June 24-29, 2012 - Montreal, Canada.", peer-reviewed/refereed.

2012, "Lavelle, J., McKee, G.A., Borch, T., Conant, R.T. Is mineral-bound soil organic matter sensitive to temperature?. 4th International Congress EUROSIL 2012, Fiera del Levante, Bari Italy - 2-6 July 2012.", peer-reviewed/refereed.

2012, "Lavelle, J., Conant, R., Borch, T. Is Mineral-Bound Soil Organic Matter Sensitive to Temperature Changes? 4th International Congress EUROSIL 2012, Fiera del Levante, Bari Italy - 2-6 July 2012.", peer-reviewed/refereed.

2012, "McKee, G.A., Lavelle, J., Conant,

R.T., Borch, T. Predicting the effect of a changing climate: Temperature effects on mineral adsorption to soil organic matter from Colorado Rocky Mountains using nuclear magnetic resonance spectroscopy. 4th International Congress EUROSIL 2012, Fiera del Levante, Bari Italy - 2-6 July 2012. (accepted but withdrawn).", peer-reviewed/refereed.

2012, "Shimizu, M., Obst, M., Kappler, A., Borch, T. The Structure and reactivity of iron-organic matter coprecipitates. Goldschmidt 2012, June 24-29, 2012 - Montreal, Canada.", peer-reviewed/refereed.

2011, "Blotevogel, J., Borch, T. Thermodynamics and Kinetics of the Reductive Defluorination of Perfluorooctanoic Acid (PFOA). 3rd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment (EmCon), August 23-26, 2011, Copenhagen, Denmark."

2011, "Blotevogel, J., Borch, T. (2011): Thermodynamics and Kinetics of the Reductive Defluorination of Perfluorooctanoic Acid (PFOA). University Consortium for Field-Focused Groundwater Contamination Research, Annual Progress Meeting, June 1-3, 2011, Guelph, ON, Canada."

2011, "Blotevogel, J., Mayeno, A.N., Sale, T.C., Borch, T. Quantum chemical prediction of degradation mechanisms, kinetics, and pathways for aqueous phase contaminants. 242nd ACS National Meeting, August 28 - September 1, 2011, Denver, Colorado."

2011, "Borch, T. Steroid Hormone Runoff from an Agricultural Field Applied with Municipal Biosolids. Consortium for Research and Education on Emerging Contaminants (CREEC) Meeting held at the Northern Colorado Water Conservancy District, June 9, 2011 Berthoud, Colorado."

2011, "Borch, T. Biogeochemical Iron Cycling

in Subalpine Wetlands with Different Hydraulic Connectivity: Impact on Fate and Transport of Organic C and Nutrients. American Geophysical Union (AGU) Fall Meeting, December 5-9, 2011, San Francisco, CA."

2011, "Borch, T. Biogeochemical Processes within the Rhizosphere: Molecular to Field Scale - State-of-the-Science. Emerging Frontiers in Rhizosphere Science, March 16-18, 2011, Warrenton, VA".

2011, "Borch, T. Biogeochemical Redox Processes and their Impact on Contaminant and Organic Matter Dynamics: From Molecular to Field Scale. Synchrotron Environmental Science V (SES V) Meeting, June 23-24, 2011, University of Saskatchewan Saskatoon, Saskatchewan, Canada (PLENARY TALK)."

2011, "Burgos, W., Borch, T., Troyer, L., Luan, F. Schwertmannite formed by biological low-pH Fe(II) oxidation versus abiotic neutralization. Goldschmidt 2011. August 14-19, 2011 in Prague, Czech Republic."

2011, "Ham, J., Williams, C., Stratton, J., Borch, T. Weather-based conditional sampling of ammonia near livestock operations using passive samplers. 242nd ACS National Meeting, August 28 - September 1, 2011, Denver, Colorado."

2011, "Ham, J., Williams, C., Stratton, J., Borch, T. Weather-Based Conditional Sampling of Ammonia Using Robotic Diffusive Samplers. ASA, CSSA, and SSSA International Annual Meetings "Fundamental for Life: Soil, Crop, & Environmental Sciences," Oct. 16-19, 2011, San Antonio, TX."

2011, "Ham, J.M., Williams, C., Stratton, J.J., Borch, T. Conditional Sampling of Ammonia at Livestock Operations Using Robotically Controlled Diffusive Samplers. American Geophysical Union (AGU) Fall Meeting, December 5-9, 2011,

San Francisco, CA."

2011, "Kappler, A., Borch, T., Amstaetter, K., Larese-Casanova, P., Jiang, J., Bauer, I., Paul, A. Arsenic redox transformation by humic substances and Fe minerals. 9th International Symposium - Geochemistry of the Earth's Surface (GES-9). June 3-7, 2011, University Memorial Center, University of Colorado Boulder, Colorado."

2011, "Nadine, K., Thompson, A., Borch, T., Shimizu, M. Surface Charge Characterization of Organo-Mineral Complexes. ASA, CSSA, and SSSA International Annual Meetings "Fundamental for Life: Soil, Crop, & Environmental Sciences," Oct. 16-19, 2011, San Antonio, TX."

2011, "Shimizu, M. and Borch, T. Iron-Organic Matter Coprecipitates: Reactivity and Morphology. ASA, CSSA, and SSSA International Annual Meetings "Fundamental for Life: Soil, Crop, & Environmental Sciences," Oct. 16-19, 2011, San Antonio, TX".

2011, "Stratton, J.J., Ham, J.M., Williams, C., Roosendaal, D., Borch, T. Assessing the Ability of Nitrogen Isotopes to Distinguish Ammonia Sources Affecting Rocky Mountain National Park. American Geophysical Union (AGU) Fall Meeting, December 5-9, 2011, San Francisco, CA."

2011, "Yang, Y-Y., Gray, J.L., Furlong, E.T., Davis, J.G., ReVello, R.C., Borch, T. Steroid Hormone Runoff from an Agricultural Field Applied with Municipal Biosolids. 3rd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment (EmCon), August 23-26, 2011, Copenhagen, Denmark."

2011, "Yang, Y-Y., Pereyra, L.P., Young, R.B., Reardon, K.F., Borch, T. Testosterone-Mineralizing Culture Enriched from Swine Manure: Characterization of Degradation Pathways and Microbial

Community Composition. 3rd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment (EmCon), August 23-26, 2011, Copenhagen, Denmark."

2011, "Young, R.B. and Borch, T. The analysis of hormone degradates by LC/Q-TOF/MS. Pittcon Conference and Exposition 2011. March 13-18, 2011. Georgia World Congress Center. Atlanta, GA. [I was invited but my Ph.D. student presented]."

2011, "Young, R.B., Mawhinney, D.B., Borch, T. Photochemistry of Androstenedione and Testosterone in Near UV Light: Kinetics, Transformation Products, and the Influence of Dissolved Organic Matter. 3rd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment (EmCon), August 23-26, 2011, Copenhagen, Denmark."

2010, "Blotevogel, J., Borch, T., Mayeno, A., Sale, T. Quantum Chemical Degradation Pathway Prediction for New and Emerging Contaminants. 30th Annual American Geophysical Union (AGU) Hydrology Days 2010, March 23, Fort Collins, CO".

2010, "Blotevogel, J., Borch, T., Mayeno, A., Sale, T. Quantum Chemical Prediction of Redox Reactivity and Degradation Pathways of Aqueous Phase Contaminants. University Consortium for Field-Focused Groundwater Contamination Research 2010 Annual Meeting, May 19-21, Guelph, Ontario".

2010, "Blotevogel, J., Borch, T., Mayeno, A., Sale, T. Quantum mechanical prediction of contaminant reactivity in groundwater: An example for hexamethylphosphoramide (HMPA). 239th American Chemical Society (ACS) National Meeting & Exposition March 21-25, 2010, San Francisco, CA."

2010, "Borch, T. Fate and Occurrence of Emerging Contaminants & Limitations of

Waste Water Treatment Processes for PPCP Reduction. EPA Region 8 - Pharmaceuticals & Personal Care Products (PPCP) Panel Discussion. April 21, 2010. Colorado Mountain College, Breckenridge Campus."

2010, "Borch, T. Steroid Hormone Runoff from an Agricultural Field Applied with Biosolids. Colorado Water Science Day. New challenges, new science for managing Colorado Water. June 23, 2010, University of Colorado, Boulder, CO".

2010, "Borch, T. Environmental Fate and Transport of Steroid Sex Hormones from Human and Animal Wastes. Oct. 1, 2010. Dept. Civil and Environmental Engineering, Penn State, University Park, PA."

2010, "Borch, T. Impact of Adsorbed and Coprecipitated Humics on Ferrihydrite Reduction and Secondary Iron Formation. Telluride Science Research Center Workshop: Biogeochemical Processes of the Iron Cycle: From Microbes to Mineral Surfaces, July 28-31 1, 2010, Telluride, CO."

2010, "Borch, T. Steroid hormone runoff from an agricultural field applied with biosolids. W2170 Multistate Workgroup Annual Meeting. Soil-Based Use of Residuals, Wastewater and Reclaimed Water. Metropolitan Water Reclamation District of Greater Chicago, June 6-8, 2010. Chicago, IL."

2010, "Borch, T., Amstaetter, K., Larese-Casanova, P., Kappler, A. Redox transformation of arsenic by Fe(II)-activated goethite (α -FeOOH). 239th American Chemical Society (ACS) National Meeting & Exposition March 21-25, 2010, San Francisco, CA."

2010, "Borch, T., Amstaetter, K., Larese-Casanova, P., Posth, N., Kappler, A. Redox Transformation of Arsenic by Fe(II)-Activated Goethite: Impact of Humic Acids and Fe(II). Goldschmidt 2010 - Earth, Energy, and the

Environment. June 13-18, 2010.
Knoxville, TN."

2010, "Galles, K., Stratton, J., Westover, E.,
Levin, E., Ham, J., Borch, T., Wagner,
J., Kreidenweis, S., Collett, J.
Laboratory chamber system for measuring
ammonia emissions from intact soil
cores: studies of cattle feedlots and
forest soils. 29th Conference on
Agricultural and Forest Meteorology.
August 26, 2010. Keystone, CO".

2010, "Galles, K.J., Ham, J., Stratton, J.J.,
Borch, T. Effect of Pen Surface
Conditions on Ammonia Volatilization
from Cattle Feedlot Pens: A laboratory
Chamber Analysis. International
Symposium on Air Quality and Manure
Management for Agriculture. September
13-16, 2010, Dallas, Texas USA".

2010, "Ham, J., Stratton, J.J., Galles, K.,
Borch, T. Measuring and Modeling
Ammonia Emissions from Cattle Feedlots:
Can We Reduce Nitrogen Losses? The
Great Plains Soil Fertility Conference
March 2-3, 2010, Denver, CO".

2010, "Larson, L., Stone, J., Stetler, L.,
Troyer, L., Borch, T. Sediment Pore-
Water Equilibrium Interactions
Associated with Arsenic and Uranium
Transport within a Historical Uranium
Mining Impacted Watershed, Harding
County, SD. The Geological Society of
America - Rocky Mountain - 62nd Annual
Meeting, 21-23 April 2010, Rapid City,
SD."

2010, "Stratton, J.J., Levin, E., Ham, J.,
Collett, J., Borch, T. Quantifying
Ammonia Emissions from High Elevation
Grassland and Forest Soils. 2010 AGU
Fall Meeting, 13-17 December, San
Francisco, California, USA".

2010, "Stratton, J.J., Levin, E., Ham, J.,
Collett, J., Borch, T. Quantifying
Ammonia Emissions from High Elevation
Grassland and Forest Soils. 3rd Annual
Stakeholder Summit December 2, 2010.
Colorado State University, Fort

Collins, CO".

2010, "Troyer, L., Borch, T., Larson, L., Stone, J. Impact of Redox Chemistry on the Environmental Fate and Transport of Arsenic and Uranium at Abandoned Uranium Mines in Harding County, SD. The Geological Society of America - Rocky Mountain - 62nd Annual Meeting, 21-23 April 2010, Rapid City, SD."

2010, "Troyer, L., Borch, T., Larson, L., Stone, J. Impact of Redox Chemistry on the Fate and Transport of Arsenic and Uranium at an Abandoned Uranium Mine. Goldschmidt 2010 - Earth, Energy, and the Environment. June 13-18, 2010. Knoxville, TN."

2010, "Yang, Y-Y., Gray, J.L., Furlong, E.T., Yager, T.J.B., Davis, J.G., Foreman, W.T., Borch, T. Hormone and Anthropogenic Waste Indicator Runoff From Biosolids Amended Soils. ASA-CSSA-SSSA International Annual Meetings, Oct 31-Nov 3, 2010, Long Beach, CA. [I was invited but my Ph.D. student presented]."

2009, "Blotevogel, J., Borch, T., Mayeno, A.N., Sale, T. Quantum mechanical degradation pathway prediction for emerging contaminants. University Consortium for Field-Focused Groundwater Contamination Research, Annual Progress Meeting. Guelph, ON, Canada, May 19-20, 2009."

2009, "Blotevogel, J., Borch, T., Mayeno, A., Sale, T.C. Quantum Mechanical Degradation Pathway Prediction for New and Emerging Contaminants. 29th Annual American Geophysical Union (AGU) Hydrology Days, March 25-27, 2009, Fort Collins, Colorado, USA."

2009, "Blotevogel, J., Borch, T., Mayeno, A., Sale, T.C. Quantum Mechanical Degradation Pathway Prediction for New and Emerging Contaminants. 2nd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment

(EmCon2009), August 4-7, 2009, Fort Collins, Colorado, USA."

2009, "Blotevogel, J., Borch, T., Mayeno, A., Sale, T.C. Quantum Mechanical Degradation Pathway Prediction for New and Emerging Contaminants. 2nd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment (EmCon2009), August 4-7, 2009, Fort Collins, Colorado, USA."

2009, "Borch, T. Biodegradation, Photolysis, and Runoff Potential of Steroid Sex Hormones in the Environment. November 10th, 2009. Colorado Wastewater Utility Council (CWWUC), Highlands Ranch, CO."

2009, "Borch, T. Degradation and Transport of Steroid Sex Hormones in the Environment. Department of Animal Sciences Seminar, May 5th, 2009. Colorado State University, CO."

2009, "Borch, T. Environmental Fate of Steroid Sex Hormones. Department of Environmental Engineering, November 13th, 2009. University of Colorado, Boulder, CO."

2009, "Borch, T. Environmental Fate of Steroid Sex Hormones. Water Center - School of Natural Resources, April 7-8, 2009. University of Nebraska, Lincoln, NE"

2009, "Borch, T. Fate of Steroid Sex Hormones in the Environment. Department of Chemical and Biological Engineering Seminar, April 24, 2009. Colorado State University, CO."

2009, "Borch, T. Fate of Steroid Sex Hormones in the Environment. Department of Chemistry and Geochemistry Seminar, February 20th, 2009. Colorado School of Mines, Golden, CO."

2009, "Borch, T. Fate of Steroids in the Environment. Colorado Environmental Partnership Workshop, April 30, 2009. The Boettcher Mansion, Golden, CO.

www.coloradoenvironmentalpartnership.org/home/".

2009, "Borch, T. Overview of Steroid Hormone Research in The Borch Lab. Presented to the Executive Board of the Colorado Livestock Association. Colorado State University, February 17th, 2009. Fort Collins, CO."

2009, "Borch, T. Environmental Fate of Steroid Sex Hormones. Soil and Water Sciences Seminar Series at University of California Riverside, January 4-9, 2009. Riverside, CA".

2009, "Borch, T. Occurrence and Fate of Steroid Hormones in Sewage Treatment Plant Effluents, Animal Feeding Operation Wastewater and the Cache la Poudre River of Colorado. Colorado Water Institute Advisory Committee, November 21, 2008, Denver, Co."

2009, "Borch, T., Yang, Y-Y., Gray, J.L., Furlong, E.T., Yager, T.J.B., Davis, J.G. Steroid Hormone Runoff from an Agricultural Field Applied with Biosolids. The 2009 Rocky Mountain Reuse Workshop, Aug 13, 2009, Golden, Colorado, USA."

2009, "Borch, T., Yang, Y-Y., Gray, J.L., Furlong, E.T., Yager, T.J.B., Davis, J.G. Steroid Hormone Runoff from an Agricultural Field Applied with Biosolids. 2nd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment (EmCon2009), August 4-7, 2009, Fort Collins, Colorado, USA."

2009, "Borch, T.; Masue, Y.; Kukkadapu, R. K.; Fendorf, S., Phosphate interactions with iron (hydr)oxides: Mineralization pathways and phosphorus retention upon bioreduction. *Geochim. Cosmochim. Acta* 2009, 73, A139-A139. *Goldschmidt 2009 - "Challenges to Our Volatile Planet"*. June 21 - 26 in Davos, Switzerland."

2009, "Ham, J.M., Galles, K., Stratton, J.J.,

Borch, T. Measuring Ammonia Emissions along the Front Range: Towards an Understanding of Nitrogen Deposition in Rocky Mountain National Park. NSF LTER Investigators Meeting. Sept. 15, 2009. Estes Park, CO."

2009, "Lyons, C.E., Klingenstein, S., Gaulke, R., Lade, S.B., Smith, E., Rice, P., Young, R.B., Borch, T. Addressing Pharmaceuticals and Personal Care Product Contamination: A Unique Opportunity to Link Science to Effective Policy and Action. 2nd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment (EmCon2009), August 4-7, 2009, Fort Collins, Colorado, USA."

2009, "Spencer, S., Ogle, S., Borch, T., Rock, B.N. Assessing NIR & MIR Spectral Analysis as a Method for Soil C Estimation Across a Network of Sampling Sites. International Symposium on Soil Organic Matter Dynamics: Land Use, Management and Global Change. July 6-9, 2009, Colorado Springs, Colorado, USA".

2009, "Stratton, J., Galles, K., Ham, J., Borch, T. Evaluating Livestock Agriculture Ammonia Emissions with a Laboratory Chamber System. Stakeholders meeting: Institute for livestock and the environment. Nov. 19, 2009. Fort Collins, CO."

2009, "Yang, Y-Y., Borch, T., Furlong, E.F., Yager, T., Davis, J.G., Gray, J. Steroid Hormone Runoff from an Agricultural Field Applied with Biosolids. U.S. Geological Survey Science Day 2009: New challenges, new approaches to understand Colorado Water, Tuesday, June 2, 2009, Denver Federal Center, Lakewood, Colorado".

2009, "Yang, Y-Y., Borch, T., Young, R.B., Davis, J.G., Goodridge, L.D. Biodegradation of Steroid Hormones in Swine Manure. 2nd International Conference on Occurrence, Fate,

Effects, and Analysis of Emerging Contaminants in the Environment (EmCon2009), August 4-7, 2009, Fort Collins, Colorado, USA."

2009, "Yang, Y-Y., Borch, T., Young, R.B., Davis, J.G., Goodridge, L.D. Degradation kinetics of testosterone by manure-borne bacteria: influence of temperature, pH, glucose amendments, and dissolved oxygen. Stakeholders meeting: Institute for livestock and the environment. Nov. 19, 2009. Fort Collins, CO."

2009, "Young, R.B., Borch, T., Snyder, S.A. Photochemical Transformation of Steroid Sex Hormones in the Presence of Ultraviolet (UV) Light and Selected Natural Photosensitizers. 2nd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment (EmCon2009), August 4-7, 2009, Fort Collins, Colorado, USA."

2008, "Archibeque, S.L., Borch, T., Davis, J.G. Impact of Growth Hormones on Nutrient Excretion. The Great Plains Soil Fertility Conference March 4-5, 2008, Denver, CO."

2008, "Archibeque, S.L., Borch, T., Engle, T.E., Wagner, J.J., Han, H. Potential endocrine disruptors from dairies and feedlots, and environmental implications. 2008 Intermountain Nutrition Conference January 29-30, 2008, Salt Lake City, UT."

2008, "Blotevogel, J., Borch, T., Gilbert, D.M., Sale, T.C. Thermodynamic Modelling of Contaminant Fate in Subsurface Environments. Division of Geochemistry - American Chemical Society Meeting August 17-21, 2008, Philadelphia, PA."

2008, "Blotevogel, J., Borch, T., Gilbert, D. Development of a Toolbox for Property and Fate Prediction of New and Emerging Contaminants Based on Thermodynamic Modeling. CSU Global Water Colloquium,

March 26-28, 2008, Colorado State University, Fort Collins, CO."

2008, "Blotevogel, J., Borch, T., Gilbert, D., Sale, T. Development of a Toolbox for Predicting Properties and Fate of Organic Contaminants. University Consortium for Field-Focused Groundwater Contamination Research 2008 Annual Meeting, May 6-8, Hockley Valley Resort, Toronto, Canada."

2008, "Borch, T. Fate of Steroid Hormones. Biosolids, PPCPs and the Environment - The Rocky Mountain Water Environment Association's Biosolids Committee Seminar, November 13, 2008, Denver, CO."

2008, "Borch, T. Iron-Oxide Surface Catalyzed Reduction of Nitroaromatic Compounds by Ferrous Iron: Implications of Oxide Type on Reactivity and Degradation Pathway. Telluride Science Research Center Workshop: Biogeochemical Processes of the Iron Cycle: From Microbes to Mineral Surfaces, July 29-August 1, 2008, Telluride, CO."

2008, "Borch, T., Occurrence and Fate of Steroid Hormones in Sewage Treatment Plant Effluents, Animal Feeding Operation Wastewater and the Cache la Poudre River of Colorado. Colorado Water Congress, 50th Annual Convention, January 23-25, 2008, Hyatt Regency Tech Center, Denver, CO."

2008, "Borch, T., Young, R.B., Gray, J.L., Foreman, W.T., Yang, Y-Y. Presence and Fate of Steroid Hormones in a Colorado River. Division of Environmental Chemistry - American Chemical Society Meeting August 17-21, 2008, Philadelphia, PA."

2008, "Davis, J.G., Borch, T., Marcillac, N.M. Agriculture's Contribution to Nitrogen Deposition in Rocky Mountain National Park. The Great Plains Soil Fertility Conference March 4-5, 2008, Denver, CO."

2008, "Gray, J.L., Borch, T., Young, R.B., Foreman, W.T., Yang, Y-Y. Presence and

Fate of Steroid Hormones in a Colorado River. The Society of Environmental Toxicology and Chemistry (SETAC) North America 29th Annual Meeting, November 16-20, 2008, Tampa, Florida, USA."

2008, "Spencer, S., Ogle, S., Borch, T., Rock, B.N. Assessing NIR & MIR Spectral Analysis as a Method for Soil C Estimation Across a Network of Sampling Sites. American Geophysical Union 2008 Fall Meeting, 15-19 December 2008, San Francisco, CA."

2008, "Troyer, L.D., Borch, T., Gerlach, R., Inskeep, W.P. Iron (hydr)oxide Controls on Bioreductive Transformation of Nitroaromatic Compounds. Division of Geochemistry - American Chemical Society Meeting August 17-21, 2008, Philadelphia, PA."

2008, "Yang, Y-Y., Borch, T., Davis, J.G., Degradation of Steroid Hormones in Pig Manure. The GSA-ASA-CSSA-SSSA Joint Annual Meeting, October 5-9, 2008, Houston, TX."

2008, "Young, R.B., Borch, T., Gray, J.L., Foreman, W.T., Davis, J.G., Yang, Y-Y. Presence and Fate of Steroid Hormones in a Colorado River. The GSA-ASA-CSSA-SSSA Joint Annual Meeting, October 5-9, 2008, Houston, TX."

2008, "Young, R.B., Borch, T., Yang, Y-Y. Occurrence and Fate of Steroid Hormones in the Environment. CSU Global Water Colloquium, March 26-28, 2008, Colorado State University, Fort Collins, CO."

2008, "Young, R.B., Borch, T., Yang, Y-Y., Davis, J.G., Occurrence and Fate of Steroid Hormones in the Environment. CSU Global Water Colloquium. March 25, 2008. Colorado State University, Fort Collins, CO."

OTHER ACTIVITIES/ACCOMPLISHMENTS – PUBLICATIONS/SCHOLARLY RECORD

"Use of inter-electrode catalyst for the oxidation of reduced sulfur species. INVENTION DISCLOSURE FORM submitted to CSURF. 13-051." (Submitted: 2012, Application: 2012, Approved: 2012, Licensed: 2012).

"Use of titanium – mixed metal oxide (Ti-mmo) electrodes for the oxidation of reduced sulfur species. Submitted to CSURF. 13-050." (Submitted: 2012, Application: 2012, Approved: 2012, Licensed: 2012).

"Disclosure of Invention. Novel Handheld Femtosecond RAMAN Laser for Rapid Quantitative Determination of Soil Organic Matter." (Submitted: 2010, Application: 2010, Approved: 2010, Licensed: 2010).

(February 1, 2014 - July 1, 2014). Faculty Fellowship, "Visiting Professor," ETH Zurich, Zurich, Switzerland.

TEACHING:

<u>Year</u>	<u>Semester</u>	<u>Course No./Title</u>	<u>Cr. Hrs.</u>	<u>Enrollment</u>
2016	Spring	CHEM799 - Dissertation	15	132
2016	Spring	CIVE799I - Dissertation: Groundwater	18	6
2016	Spring	SOCR567 - Environmental Soil Chemistry	4	5
2016	Spring	SOCR567 - Environmental Soil Chemistry - Recitation	0	5
2016	Spring	ERHS695C - Independent Study-Toxicology	18	8
2016	Spring	SOCR467 - Soil and Environmental Chemistry	3	1
2016	Spring	SOCR699 - Thesis	18	7
2015	Fall	CHEM799 - Dissertation	15	112
2015	Fall	CIVE799I - Dissertation-Groundwater	18	3
2015	Fall	CHEM495 - Independent Study	3	9
2015	Spring	CHEM799 - Dissertation	15	101
2015	Spring	SOCR567 - Environmental Soil Chemistry	4	9
2015	Spring	SOCR567 - Environmental Soil Chemistry - Recitation	0	9
2015	Spring	SOCR467 - Soil and Environmental Chemistry	3	3
2014	Fall	CHEM799 - Dissertation	15	111
2014	Fall	CHEM795B - Independent Study-Analytical Chemistry	5	4
2014	Spring	CHEM799 - Dissertation	15	107
2014	Spring	SOCR567 - Environmental Soil Chemistry	4	4
2014	Spring	SOCR567 - Environmental Soil Chemistry - Recitation	0	4
2014	Spring	CHEM795B - Independent Study-Analytical Chemistry	5	4
2014	Spring	SOCR467 - Soil and Environmental Chemistry	3	3
2014	Spring	SOCR784 - Supervised College Teaching	18	7
2014	Spring	CHEM699 - Thesis	15	11
2013	Fall	CHEM799 - Dissertation	15	114
2013	Fall	SOCR799 - Dissertation	18	19
2013	Fall	CHEM699 - Thesis	15	7
2013	Spring	CHEM799 - Dissertation	15	93
2013	Spring	SOCR799 - Dissertation	18	17
2013	Spring	SOCR567 - Environmental Soil Chemistry	4	13
2013	Spring	SOCR567 - Environmental Soil Chemistry - Recitation	0	13
2013	Spring	CHEM495 - Independent Study	3	10
2013	Spring	SOCR467 - Soil and Environmental Chemistry	3	3
2012	Fall	CHEM799 - Dissertation	15	110
2012	Fall	SOCR799 - Dissertation	18	17
2012	Fall	SOCR792 - Seminar	1	9
2012	Spring	CHEM799 - Dissertation	15	101
2012	Spring	SOCR799 - Dissertation	18	15
2012	Spring	SOCR567 - Environmental Soil Chemistry	4	14
2012	Spring	SOCR567 - Environmental Soil Chemistry - Recitation	0	14
2012	Spring	CHEM495 - Independent Study	3	5
2012	Spring	SOCR792 - Seminar	1	8
2012	Spring	SOCR467 - Soil and Environmental Chemistry	3	5

2011	Fall	CHEM799 - Dissertation	15	119
2011	Fall	SOCR799 - Dissertation	18	12
2011	Fall	SOCR792 - Seminar	1	10
2011	Fall	SOCR699 - Thesis	18	9
2011	Spring	CHEM799 - Dissertation	15	110
2011	Spring	SOCR799 - Dissertation	18	9
2011	Spring	SOCR567 - Environmental Soil Chemistry	4	5
2011	Spring	SOCR567 - Environmental Soil Chemistry - Recitation	0	5
2011	Spring	SOCR792 - Seminar	1	6
2011	Spring	SOCR467 - Soil and Environmental Chemistry	3	1
2011	Spring	SOCR699 - Thesis	18	13
2010	Fall	CHEM799 - Dissertation	15	132
2010	Fall	SOCR799 - Dissertation	18	12
2010	Spring	CHEM799 - Dissertation	15	102
2010	Spring	SOCR799 - Dissertation	18	7
2010	Spring	SOCR567 - Environmental Soil Chemistry	4	10
2010	Spring	SOCR567 - Environmental Soil Chemistry - Recitation	0	10
2010	Spring	SOCR467 - Soil and Environmental Chemistry	3	4
2010	Spring	CHEM651A - Special Topics in Chemistry-Analytical Chemistry	4	0
2009	Fall	CHEM530A - Advanced Topics in Chemical Analysis-Environmental Chemical Analysis	1	5
2009	Fall	CHEM799 - Dissertation	15	111
2009	Fall	SOCR799 - Dissertation	18	9
2009	Spring	CHEM799 - Dissertation	15	105
2009	Spring	SOCR799 - Dissertation	18	10
2009	Spring	SOCR567 - Environmental Soil Chemistry	4	8
2009	Spring	SOCR567 - Environmental Soil Chemistry - Recitation	0	8
2009	Spring	SOCR467 - Soil and Environmental Chemistry	3	0
2009	Spring	SOCR784 - Supervised College Teaching	18	1
2008	Fall	CHEM799 - Dissertation	15	118
2008	Fall	SOCR799 - Dissertation	18	12
2008	Fall	SOCR792 - Seminar	1	4
2008	Summer	SOCR799 - Dissertation	18	2
2008	Summer	SOCR795 - Independent Study	18	1
2008	Spring	CHEM799 - Dissertation	15	110
2008	Spring	SOCR799 - Dissertation	18	14
2008	Spring	SOCR581A1 - Environmental Soil Chemistry	4	9
2008	Spring	SOCR581A1 - Environmental Soil Chemistry - Recitation	0	9
2008	Spring	SOCR467 - Soil and Environmental Chemistry	3	1
2008	Spring	SOCR784 - Supervised College Teaching	18	2
2007	Fall	SOCR799 - Dissertation	18	12

EXTENSION/ENGAGEMENT ACTIVITIES/ACCOMPLISHMENTS

Workshop

The Summer Soil Institute. Adult, Fort Collins. Total number of participants: 25. Percent Responsible: 20%. 2nd Quarter 2015.

Soil Summer Institute. Percent Responsible: 20%. 2013.

Soil Summer Institute. Percent Responsible: 20%. 2012.

COMMITTEES

President's Sustainability Committee research subcommittee., (January 2016 - Present).

One Health, (December 2015 - Present).

Associate Professor (joint position) Department of Civil and Environmental Engineering Colorado State University, USA, (August 2013 - Present).

Member of Executive Council for the School of Global Environmental Sustainability (SoGES), (2012 - Present).

Faculty Member of The Center for Environmental Medicine (CEM) - Colorado State University, USA, (2010 - Present).

Faculty Member of The Graduate Degree Program in Ecology (GDPE) - Colorado State University, USA, (2010 - Present).

Co-organizer of the Celebrate Undergraduate Research & Creativity (CURC) Showcase at Colorado State University, (2008 - Present).

Member of the School of Global Environmental Sustainability Colorado State University, USA, (2008 - Present).

Joint Appointment as Assistant/Associate Professor Analytical Chemistry Department of Chemistry Colorado State University, USA, (2007 - Present).

Visiting Professor (Kretzschmar Soil Chemistry Group) The Institute of Biogeochemistry and Pollutant Dynamics, Department of Environmental Sciences at ETH Zurich, Switzerland, (February 2014 - July 2014).

Conference Steering Committee of the Natural Gas Symposium at Colorado State University, (2011 - 2013).

Departmental Coordinator of the Graduate Program, (January 1, 2016 - Present).

Faculty Mentor for Steve Fonte, (December 2015 - Present).

Soil and Crop - Self Study, (2012 - 2013).

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

The American Association for the Advancement of Science. (January 1, 2011 - Present).

Soil Science Society of America. (2004 - Present).

The Geochemical Society. (2004 - Present).

American Geophysical Union. (2002 - Present).

The American Chemical Society. (2002 - Present).

The Danish Chemical Society. (2000 - Present).

Chemical and Engineering News (C&EN) Vol. 93 Issue 11 | pp. 8-12, 2015. (March 16, 2015).

Coloradoan. (December 11, 2014).

Colorado Public Radio (CPR). (December 11, 2014).

USA TODAY and many other Major Newspapers. (November 12, 2014).

USA TODAY and many other Major Newspapers. (November 12, 2014).

KUNC (91.5; part of NPR). (July 3, 2008).

Rocky Mountain Chronicle. (April 10, 2008).

Editorial Review Board Member, Editorial Board Member for the Journal Environmental Pollution. (2013 - Present).

Member, ASA-CSSA-SSSA - 2012 Environmental Quality Research Award Committee. (2012 - Present).

Reviewer, Ad Hoc Reviewer, BARD. (2012 - Present).

Reviewer, Journal Article, Chemical Geology. (2012 - Present).

Member, Member of Young Investigator Award Committee for the Soil Science Society of America. (2012 - Present).

Reviewer, Journal Article, Proceedings of the National Academy of Sciences (PNAS). (2012 - Present).

Reviewer, Ad Hoc Reviewer, Swiss National Science Foundation. (2012 - Present).

Reviewer, Journal Article, Applied Geochemistry. (2011 - Present).

Reviewer, Ad Hoc Reviewer, Canadian Light Source. (2011 - Present).

Reviewer, Ad Hoc Reviewer, Clean Energy Super Cluster. (2011 - Present).

Reviewer, Journal Article, GEODERMA. (2011 - Present).

Reviewer, Ad Hoc Reviewer, NSF. (2011 - Present).

Reviewer, Journal Article, Organic Geochemistry. (2011 - Present).

Reviewer, Journal Article, Analytical Chemistry. (2010 - Present).

Reviewer, Ad Hoc Reviewer, Canadian Light Source. (2010 - Present).

Reviewer, Journal Article, Environmental Pollution. (2010 - Present).

Reviewer, Ad Hoc Reviewer, United States-Israel Binational Agricultural Research and Development Fund program. (2010 - Present).

Member, W-2170. (2010 - Present).

Reviewer, Journal Article, Water, Air, & Soil Pollution. (2010 - Present).

Reviewer, Ad Hoc Reviewer, USDA. (2009 - Present).

Reviewer, Ad Hoc Reviewer, Environmental Molecular Sciences Laboratory (EMSL) peer review. (2008 - Present).

Reviewer, Journal Article, *Geochimica et Cosmochimica Acta*. (2008 - Present).

Member, SSSA S374 Glossary of Soil Science Terms Committee. (2007 - Present).

Reviewer, Journal Article, *Environmental Science and Technology*. (2006 - Present).

Reviewer, Ad Hoc Reviewer, Stanford Synchrotron Radiation Lightsource. (2006 - Present).

Editor, Associate Editor, *Journal of Environmental Quality*. (2012 - 2018).

Chairperson, Conference Chair of the EmCon 2016 – 5th International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment in Australia, Sydney. (2014 - 2016).

Session Chair, Conference Symposium Co-Chair of Hydraulic Fracturing Impacts on Water, Soil and Air Quality at the 249th American Chemical Society National Meeting & Exposition in Denver, CO from March 22 – 26, 2015. (March 2015 - 2015).

Session Chair, Conference Symposium Co-Chair of Iron Oxides: Formation, Structure, Reactivity and Applications at the 249th American Chemical Society National Meeting & Exposition in Denver, CO from March 22 – 26, 2015. (March 2015 - 2015).

Chairperson, Chair for the Soil Science Society of America Division S-11 - Soils and Environmental Quality. (January 2013 - December 2015).

Member, W2082. (2010 - 2015).

Reviewer, Grant Panel, Served on geobiology and low temp geochemistry review panel. (April 2015).

Reviewer, Grant Panel, Served on postdoctoral fellowship review panel. (December 2014).

Session Chair, Conference Session Co-Chair of Environmental Impacts of Hydraulic Fracturing, ISR U Mining, and Alternative Energy Production at the ASA, CSSA, and SSSA International Annual Meetings, Nov. 2-5, 2014, in Long Beach, CA. (November 2014 - 2014).

Session Chair, Conference Symposium Co-Chair of Symposium--Climate Change Impacts on Soil Carbon: Understanding and Estimating the Extent and Rates of Reactions, Processes, Interactions and Feedbacks at the ASA, CSSA, and SSSA International Annual Meetings, Nov. 2-5, 2014, in Long Beach, CA. (November 2014 - 2014).

Chairperson, Conference Chair of the EmCon 2014 – 4th International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment August 19-22, 2014. University of Iowa, Iowa City, Iowa, USA. <http://www.iuhr.uiowa.edu/emcon2014/>. (2012 - 2014).

Session Chair, Conference Session Co-Chair of Water Quality in a Changing Climate at the ASA, CSSA, and SSSA Annual Meetings, Nov. 3-6, 2013, in Tampa, FL. Conveners Thomas Borch (CSU) and Gina McKee (CSU). (2013).

Committee Member, Scientific Advisory Board. Monte Verità Conference on Iron Biogeochemistry. Ascona, Switzerland, March 3-8, 2013. (2012 - 2013).

Chairperson, Goldschmidt, Florence, ZZ. (2011 - 2013).

Session Chair, Conference Session Co-Chair of Redox-active metals and the global carbon cycle at Goldschmidt 2012., Montreal, ZZ. (2012).

Committee Member, Expert consultant (paid GS15 position) to EPA's Science Advisory Board (SAB) Radiation Advisory Comm. (2011 - 2012).

Member, Search for S&C Dept. Head. (2011 - 2012).

Workshop Organizer, Telluride Science Research Center, Telluride, CO. (2011 - 2012).

Reviewer, Ad Hoc Reviewer, 2011 Water for Food Institute Competitive Grants Program at University of Nebraska. (2011).

Workshop Organizer, EAG, ESF, and NSF. <http://www.eag.eu.com/education/shortcourse/eag-shortcourse2011/>, Tubingen, ZZ. (2011).

Chairperson, EmCon2011, Copenhagen, ZZ. (2011).

Member, Search for Associated Dir of Development. (2011).

Soges Energy Panel: From Diana Wall: I wanted to send a note of appreciation for Thomas Borch's excellent job as a member of a SoGES panel at Avo's on the evening of November 9th. Wednesday's panel was "The Clean Energy Conundrum: Potential and Pitfalls in Colorado's Energy Future" and had panelists from 3 Colleges. This topic drew one of the largest audiences this semester! (2011).

Task Force Chair, USDA, NSF, Warrenton, VA. (2011).

CSU Scientific Vendors Focus Group Committee. (2010 - 2011).

Member, Soil & Crop Sci Department Chair Search Committee. (2010 - 2011).

Institute for Livestock and the Environment (<http://ile.colostate.edu/>). (2009 - 2011).

Member, SOGES Curriculum Committee. (2009 - 2011).

Information Science & Technology Center (ISTeC) Research Advisory Committee. (2008 - 2011).

Member, National Livestock and Poultry Environmental Learning Center s Pharmaceuticals Committee. (2008 - 2011).

Session Chair, Goldschmidt, Knoxville, TN. (2010).

Workshop Organizer, Pinhead Punk Science presentation in Telluride for 70 children between the ages of 4 - 10 as part of the Smithsonian s Dig It! Come Get the Dirt on Messy Mud and Super Soil. (2010).

Member, USDA Water Science Panel. (2010).

Workshop Organizer, Biogeochemical Processes of the Iron Cycle: From Microbes to Mineral Surfaces: Telluride Science Research Center, Telluride, CO. (2009 - 2010).

Editor, Journal Editor, Environmental Science & Technology. (2009 - 2010).

Member, W1082. (2006 - 2010).

Chairperson, EmCon2009, Fort Collins, CO. (2009).

Member, Faculty Search Committee - Animal Science. (2009).

Session Chair, Goldschmidt, Davos. (2009).

Member, Chemistry Search Committee (3 faculty members). (2008 - 2009).

Session Chair, American Chemical Society Meeting, Philadelphia, PA. (2008).

Member, Department of Soil and Crop Sciences 100th Anniversary Committee. (2008).

OTHER ACTIVITIES/ACCOMPLISHMENTS – SERVICE/OUTREACH

Litigation, Lambdin & Chaney, LLP, Denver, CO, United States. (January 14, 2016 - Present).

Litigation, Barkan & Robon LTD – Law Firm, Oregon, OH. (June 1, 2013 - July 1, 2013).

Litigation, Dufford, Waldeck, Milburn & Krohn, LLP - Law Firm (Grand Junction, CO), Grand Junction, CO, United States. (March 1, 2012 - December 31, 2012).

For Profit Organization, HDR. (November 1, 2011 - March 1, 2012).

For Profit Organization, CH2Mhill. (January 1, 2011 - December 31, 2011).

Government, EPA. (2011).

Expert Testimony, Lambdin & Chaney, LLP – Law Firm (Denver, CO). (January 2016 - Present).

Guest Speaker, Pateros Creek Brewing, FORT COLLINS, CO. (September 28, 2015).

Guest Speaker, Managing the Planet Panel Series, FORT COLLINS, CO. (March 10, 2015).

Guest Speaker, Poudre Library, FORT COLLINS, CO. (February 12, 2015).
