

## **AMY JO BURGIN**

Aquatic Ecosystem Ecologist  
Kansas Biological Survey and University of Kansas  
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### **PROFESSIONAL APPOINTMENTS AND TRAINING**

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January 2016	Associate Professor and Associate Scientist Environmental Studies and Ecology & Evolutionary Biology Departments, Kansas Biological Survey, University of Kansas
2011-2015	Assistant Professor, Associate Professor School of Natural Resources, UNL
2009-2011	Assistant Professor, Earth & Environmental Science, Wright State University
2007-2009	Postdoctoral Researcher, Cary Institute of Ecosystem Studies
2002-2007	Ph.D., Zoology and Ecology, Evolutionary Biology and Behavior Program of Michigan State U. and the Kellogg Biological Station
1998-2002	B.A. <i>magna cum laude</i> Biology and Environmental Science, Coe College

### **AWARDED GRANTS**

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2015-2018:	Connecting Soil O <sub>2</sub> and Greenhouse Gas Fluxes. Co PI with T. Loecke (lead-PI). <b>NSF-DEB-Ecosystems</b> (\$699,241)
2014-2016:	Biogeochemical controls on saline wetland plant establishment in Nebraska's Eastern Saline Wetlands. Sole PI. <b>Saline Partnership and NE Game &amp; Parks</b> (\$119,720)
2014-2016:	Do phosphorus cycling time lags delay the response of lakes to ecological restoration? Sole PI. <b>Nebraska Department of Environmental Quality</b> (\$93,007)
2013-2016:	Co-Aerial Ecologist: Robotic Water Sampling and Sensing in the Wild. Co-PI with lead PI C. Detweiler (Computer Science, UNL). <b>USDA-NIFA</b> (\$956,210)
2012-2013:	RAPID: Using a drought-enhanced nitrate pulse to understand stream N retention and processing. Lead PI with co PIs T. Loecke, D. Riveros-Iregui, S. Thomas (UNL), A. Ward (UI) and M. St. Clair (Coe). <b>NSF-Ecosystems</b> (\$197,568)
2013	Assessing the impact of nutrient enrichment on ecosystem services provided by surface waters in Nebraska and beyond. Co-PI with lead PI S. Thomas. <b>UNL Hatch</b> (\$66,000)
2012-2014:	Use RUSLE2 to Assess Sedimentation and Water Quality Conditions in the Rainwater Basin's Playa Wetlands. Co PI with Lead PI Zhenghong Tang (UNL) Regional Wetland Program Development Grants via the <b>EPA</b> (\$135,722).
2012-2014:	Fremont State Lakes Renovation Study: The Effects of Alum Application and Fishery Renovation on Water Quality; Role: Lead PI with coPIs S. Thomas, M. Pegg and K. Pope. <b>NE Dept. Environ. Quality</b> : \$240,448 direct costs, \$166,069 UNL match (total = \$406,517)
2011-2014:	Converting aglands to wetlands: How do created wetlands affect global warming potential? <b>US Dept of Agriculture (USDA)/NASA Carbon Cycle Science</b> Role: Lead PI with TD Loecke (Co-PI); Award: \$648,887
2011-2012:	Does Alum Addition Affect Benthic Communities and Metal and Nutrient Cycling? <b>Ohio Water Resources Center 104b program</b> . Role: Co-PI with C Hammerschmidt and G Nogaró; Award: \$29,695
2010-2013:	Coupled C, N and S cycling in coastal plain wetlands: how will climate change and saltwater intrusion alter ecosystem dynamics? <b>NSF Ecosystems</b> Role: Co-PI with E Bernhardt and G Poole; Award: \$1.2M total; UNL \$340,051
2010	Global Warming Potential of a Wetland Mitigation Bank in Southwest Ohio (\$10,000). <b>Wright State University Research Council</b>
2007	<b>Smithsonian Post-doctoral Fellowship</b> Award: \$42,000 (Funded, declined)
2002-2007	Graduate Awards and Fellowships: <b>Marine Biological Lab</b> Scholarships (\$3350) to attend Microbial Diversity; <b>MSU Educational Enhancement Award</b> (\$2200) to attend Microbial

2001 Diversity; **Long-Term Ecological Research (LTER)** Cross-site Synthesis Grant (\$7500); **NSF Doctoral Dissertation Improvement Grant** (DDIG; \$12,000); **Kellogg Biological Station LTER** Graduate Student Grant (\$1500); **MSU Zoology** Shaver Award (\$1700) for travel to the University of Texas Marine Science Institute (UTMSI) for research  
**Morris K. Udall** Scholarship for Environmental Science and Policy (\$5000)

#### HONORS AND AWARDS

2015 UNL College of Ag. Sci. and Nat. Resources **Holling Family Junior Teaching Award**  
 2014-2016 Co-Chair for 2016 Annual Meeting of the Society for Freshwater Science  
 2015-2016 **Chair, Aquatic Ecology Section**, Ecological Society of America  
 2013-2014 **Vice-Chair, Aquatic Ecology Section**, Ecological Society of America  
 2013 Excellence in Reviewing Recognition, **Top 25 Reviewers** for *Biogeochemistry*  
 2012 **Young Alum Award**, Coe College  
 2012-2014 **Chair (Elect, Current, Past) Global Change Section**, Society of Wetland Scientists  
 2009 **New Phytologist** award from the Biogeosciences section of ESA  
 2008 **Eco-DAS VIII** (Ecological Dissertations in Aquatic Sciences, formerly DIALOG)

#### TEACHING EXPERIENCE

2012-2015 Limnology (U/G) and Writing Science (G) at UNL  
 Microbial Biogeochemistry (G), Classic Papers in Aquatic Ecology (G)  
 2009-2011 Environmental Microbiology (U/G); Global Biogeochemical Cycles (U/G); Wetlands and  
 Global Change (G) at Wright State University  
 2002-2007 Biological Sciences 110 Laboratory (U); Field Ecology and Evolution ZOL 440 (U);  
 Eminent Ecologist Seminar Series (U/G; 2 semesters) Marine Biology ZOL 353 (U)

#### CURRENT AND FORMER STUDENTS

Current *Postdoc Associate*: Keunyea Song, April 2014 - present  
 Former Kaycee Reynolds, M.S. Sept 2013 – April 2015 (UNL Recruiting Fellowship)  
 Karla Jarecke, M.S. Sept 2012 – April 2015 (co-advised with T. Loecke)  
 Valerie Schopfer, M.S. UNL 2013; Awarded WSU Graduate Fellowship (2 yrs)  
 Christa Webber, M.S., May 2012 – October 2014  
*Undergraduates*: Max Gade, Jocelyn Olney, Nick Jenkins, Alicia Lenner, Emily Waring,  
 Dayton Horton, Katie Schlafke (REU), Cain Silvey (UCARE), David Moskecki, Lindsey  
 Potter, Carrie Adkisson, Adam Buchli, Ellen Dolph, Cassie Chicorz  
 2010-2011 WSU undergraduates: Sarah Harvey (REU), Erin Cull; Melanie Stall  
 2005-2008 Evan Palmer-Young (Cary REU, 2008); Philip Riekenbert (UT intern, 2007); Erin Payne  
 (Kalamazoo College REU, 2006, 2007); Scott Crowley (Kalamazoo C., 2005)

#### PUBLICATIONS (\* = invited; !=ISI Highly Cited, *postdocs*, *grad* or # undergrads; gain is Jan2014-Nov2014)

34. Jarecke, K.M., T.D. Loecke and A.J. Burgin. 2015. Coupled soil oxygen and greenhouse gas dynamics under variable hydrology. Accepted for *Soil Biology & Biochemistry*.
33. Detweiler, C., J.P. Ore, D. Anthony, S. Elbaum, A. Burgin and A. Lorenz. 2015. Bringing Unmanned Aerial Systems Closer to the Environment. *Environmental Practice* 00: 1-13.
32. Herbert, E.R., P. Boon, A.J. Burgin, S.C. Neubauer, R.B. Franklin, M. Ardon, K.N. Hopfensperger, L. Lamers and P. Gell. 2015. Salinization of freshwater wetlands: A cross-ecosystem synthesis. Accepted at *EcoSphere*.
31. Ore, J.P., S. Elbaum, A.J. Burgin and C. Detweiler. 2015. Autonomous Aerial Water Sampling. *Journal of Field Robotics* 0:00 1-19. DOI: 10.1002/rob21591.

30. *Schoepfer, V.A., E.S. Bernhardt, and A.J. Burgin.* 2014. Iron-Clad Wetlands: Soil iron-sulfur buffering determines coastal wetland response to salt water incursion. *JGR-Biogeosciences*. DOI 10.1002/2014JG002739
29. *Payn, R., A.M. Helton, G.C. Poole, C. Izurieta, A.J. Burgin and E.S. Bernhardt.* 2014. A generalized mechanistic model for applying thermodynamic, kinetic and stoichiometric ecological theory to the biogeochemistry of aquatic microbial systems. *Ecological Modeling* 294: 1-18. [Impact Factor (IF) = 2.326; Web of Science (WoS) citations = 0]
28. *Nogaro, G., and A.J. Burgin.* 2014. Influence of bioturbation on denitrification and dissimilatory nitrate reduction to ammonium (DNRA) in freshwater sediments. *Biogeochemistry* 120: 279-294. [IF= 3.73; Web of Science (WoS) citations = 0]
27. *Davis, C.A., A.S. Ward, A.J. Burgin, T.D. Loecke, D.A. Riveros-Iregui, D. Schnoebelen, D. Just, S.A. Thomas, L. Weber, and M. St. Clair.* 2014. Antecedent moisture controls on stream nitrate flux in an agricultural watershed, Clear Creek, Iowa. *Journal of Environmental Quality* 43: 1494-1503. [IF= 2.345; Web of Science (WoS) citations = 0]
26. *Hopfensperger, K.N., A.J. Burgin, V.A. Schoepfer, A.M Helton.* 2014. Impacts of saltwater incursion on plant communities, anaerobic microbial metabolism and resulting relationships in a restored freshwater wetland. *Ecosystems* 17: 792-807. [IF= 3.531; Web of Science (WoS) citations = 1]
25. *Ore, J., S. Elbaum, A. Burgin, B. Zhao, C. Detweiler,* Autonomous Aerial Water Sampling. The 9th Intl. Conf. on Field and Service Robots (FSR). Brisbane, Australia, Dec. 2013.
24. *Dodds, W.K., J.R. Webster, C.L. Crenshaw, A. M. Helton, J. M. O'Brien, E. Martí, A.E. Hershey, J. L. Tank, A.J. Burgin, N. B. Grimm, S. K. Hamilton, D. J. Sobota, G. C. Poole, J.J. Beaulieu, L.T. Johnson, L.R. Ashkenas, R. O. Hall Jr., S. L. Johnson, W. M. Wollheim, and W. B. Bowden.* (Accepted) Strategies for successful collaborative ecological research: the Lotic Intersite Nitrogen Experiments. *Journal of Freshwater Science* 33: 700-710. [Impact Factor = 1.43; Web of Science (WoS) citations = 0]
23. *Bertilsson, S., A.J. Burgin, C.C. Carey, S.B. Fey, H.P. Grossart, L. Grubisic, I. Jones, G. Kirillin, J.T. Lennon, A. Shade, R. L. Smyth.* (2013) The under-ice microbiome of seasonally frozen lakes. *Limnology & Oceanography* 58 (6): 1998-2012. [IF = 3.615 ; WoS = 1; +1 gain]
22. *Kulkarni, M. V., A. J. Burgin, P. M. Groffman, and J. B. Yavitt* (2013), Direct Flux and <sup>15</sup>N tracer methods for measuring denitrification in forest soils. *Biogeochemistry* 117: 359-373. [IF = 3.73; WoS = 0]
21. *Nogaro, G., A.J. Burgin, V.A. Schoepfer, M.J. Konkler, K.L. Bowman, C.R. Hammerschmidt.* (2013) Aluminum sulfate (alum) application interactions with coupled metal and nutrient cycling in a hypereutrophic lake ecosystem. *Environmental Pollution* 176: 267-274. [IF = 3.902 ; WoS = 1; +1]
20. *Burgin, A.J., J Hyman, P.M. Groffman, A.J. Gold and D.Q. Kellogg.* (2013) Balancing nitrogen retention ecosystem services and greenhouse gas disservices at the landscape scale. *Ecological Engineering* 56: pp. 26-35 DOI: 10.1016/j.ecoleng.2012.05.003. [IF = 3.11; WoS = 6; +5 gain]
19. *Burgin, A.J., S.K. Hamilton, S.E. Jones and J.T. Lennon.* (2012) Denitrification by sulfur oxidizing bacteria in a eutrophic lake. *Aquatic Microbial Ecology* 66: 283-293. [IF = 2.39; WoS = 5; +4 gain]
18. *Izurieta C, G. Poole, R.A. Payn, I. Griffith, R. Nix, A. Helton, E. Bernhardt, and A.J. Burgin.* (2012) Development and Application of a Simulation Environment (NEO) for Integrating Empirical and Computational Investigations of System-Level Complexity. 2012 International Conference on Information Science and Applications Proceedings.
17. *Burgin A.J. and P.M. Groffman.* (2012) Soil O<sub>2</sub> controls denitrification rates and N<sub>2</sub>O yield in a riparian wetland. *JGR-Biogeosciences* 117: G01010. [IF = 3.03; WoS citations = 13; + 8 gain] doi:10.1029/2011JG001799
16. *\*Burgin A.J., S.K. Hamilton, W. Yang, and W. Silver.* (2011) Beyond C and N: How the microbial energy economy couples elemental cycles in diverse ecosystems. *Frontiers in Ecology and the Environment* 9: 44-52. [IF = 6.92; WoS citations = 27; +8 gain]
15. *Raciti, SM., A.J. Burgin, P.M. Groffman, D. Lewis, T.J. Fahey.* (2011) Denitrification in suburban lawn soils. *Journal of Environmental Quality* 40: 1932-40. [IF = 2.24; WoS citations = 12; +6 gain]

14. Findlay SEG, PJ Mulholland, SK Hamilton, JL Tank, MJ Bernot, **AJ Burgin**, CL Crenshaw, WK Dodds, NB Grimm, WH McDowell, JD Potter, and DJ Sobota. (2011) Cross-stream comparison of substrate specific denitrification potential. *Biogeochemistry* 104: 381-92. [IF = 2.67; WoS citations = 16; +7 gain]
- !13. Beaulieu, JJ and 27 others with **A.J. Burgin**. (2011) Nitrous oxide emission from denitrification in stream and river networks. *PNAS* 108: 214-219. [IF = 9.77; WoS citations = 77; +23 gain]
12. **Burgin** A.J, PM Groffman and D.N. Lewis. (2010) Factors regulating denitrification in a riparian wetland. *Soil Science Society of America Journal* 74: 1826-1833. [IF = 1.22; WoS = 15; +4 gain]
11. Larsen LG, S. Moseman, A. Santoro, K. Hopfensperger, and **A.J. Burgin**. (2010) A complex systems approach to predicting effects of sea level rise and N loading on N cycling in coastal wetland ecosystems. pg 67-92 in P.F. Kemp (ed.) *Eco-DAS VIII Symposium Proceedings*. ASLO.
10. Harms TK, BL Reid, DJ Sobota, and **AJ Burgin**. (2010) Biogeochemical reaction and transport within hydrologic landscapes: crossing disciplinary and ecosystem boundaries. pg 146-165 in P.F. Kemp (ed.) *Eco-DAS VIII Symposium Proceedings*. ASLO.
- !9. Bernot MJ, and 27 others including **Burgin** AJ. (2010) Inter-regional comparison of land-use effects on stream metabolism. *Freshwater Biology* (55): 1874-1890. [IF = 3.08; WoS = 65; +19 gain]
8. \*Groffman PM, C Stylinski, M. Nisbet, C. Duarte, R. Jordan, A.J. **Burgin**, A. Previtali, and J. Coloso. (2010) Restarting the conversation: Challenges at the interface between ecology and society. *Frontiers in Ecology and the Environment* (8): 284-291. [IF = 6.92; WoS = 40; +12 gain]
7. #Payne, E.K., A.J. **Burgin** and S.K. Hamilton. (2009) Nitrate stimulation of sulfur oxidation in freshwaters: evidence from sediment nitrate manipulation using porewater equilibrators. *Aquatic Microbial Ecology* 54:233-241. [IF = 2.09; WoS = 5; +1]
6. Hall RO, & 27 others with AJ **Burgin**. (2009) Nitrate removal in stream ecosystems measured by <sup>15</sup>N addition experiments: Total uptake. *Limnology and Oceanography* 54: 653-665. [IF = 3.55; WoS = 48; +14 gain]
5. Mulholland PJ, & 27 others with AJ **Burgin**. (2009) Nitrate removal in stream ecosystems measured by <sup>15</sup>N additions: Denitrification. *Limnology & Oceanography* 54: 666-80. [IF = 3.55; WoS=60; +16 gain]
4. **Burgin**, A.J. and S.K. Hamilton. NO<sub>3</sub> driven SO<sub>4</sub><sup>2-</sup> production in freshwater ecosystems: implications for N and S cycling. 2008. *Ecosystems* 11:908-922. [IF = 3.68; WoS = 26; +6 gain]
3. E.S. Kane, E.F. Betts, A.J. **Burgin**, H.M. Clilverd, C.L. Crenshaw, J.B. Fellman, I.H. Myers-Smith, J.A. O'Donnell, D.J. Sobota, W.J. Van Verseveld, J.B. Jones. Precipitation control over nitrogen retention: a synthesis of Long-Term Ecological Research. 2008. *Ecohydrology* 1: 105-117. [IF = 1.84; WoS = 9; +0 gain]
- !2. Mulholland, P.J., and 27 others with **A.J. Burgin**. (2008) Stream denitrification across biomes and its response to anthropogenic nitrate loading. *Nature* 452: 202-206. [IF = 30.98; WoS = 337; +111 gain]
- !1. **Burgin**, A.J. and S.K. Hamilton. (2007) Have we overemphasized the role of denitrification in aquatic ecosystems? A review of nitrate removal pathways. *Frontiers in Ecology and the Environment* 5(2): 89-96. [IF = 6.92; WoS = 224; +51 gain]

**PUBLICATIONS IN REVIEW, REVISION, OR PLANNED 2016 SUBMISSION (FULL-TEXT AVAILABLE ON REQUEST)**

1. Loecke, T.D., **A.J. Burgin**, D.A. Riveros-Iregui, S.A. Thomas, A. S. Ward, C.A. Davis and M.A. St. Clair. Weather whiplash in agricultural regions creates unforeseen changes in water quality.
2. Loecke, T.D., K.M. Jarecke, and **A.J. Burgin**. Abiotic and biotic controls on soil O<sub>2</sub> at the aquatic terrestrial interface. In review at *JGR-Biogeosciences*.
3. Reynolds, K.N., Loecke, T.D., **A.J. Burgin**, C.A. Davis, D.A. Riveros-Iregui, S.A. Thomas, M.A. St. Clair, and A. S. Ward. Optimizing Water Quality Sampling Strategy Using High-Frequency Nitrate Data. In review at *Environmental Science & Technology*.

## INVITED SEMINARS AND PRESENTATIONS

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2015	New Nitrogen Knowledge, University of Kansas, March 2015
2014	U of Iowa, "Interaction of agricultural and climate change: Implications for water quality" NE Dept. of Environmental Quality "Alum as a tool for improving water quality" UNL Population Bio. Symposium "Putting Birds and Chemistry into Common Units"
2013	U Maine "Wetlands and Global Change", Washington State U "Climate change implications for water quality in agricultural regions"
2012	U Connecticut "Wetlands and Global Change"
2011	"Wetlands and Global Change" Sam Houston State (Biology Dept), Kansas State U (Biology Dept.), Duke U (Biology Dept.), Indiana U (School of Envi. Sci.) "Microbial linkages in the N and S cycles" Virginia Tech, U of Nebraska-Lincoln
2010	Bowling Green State U, Miami U, U of Ohio, Northern Kentucky U

## FIRST-AUTHOR CONFERENCE PRESENTATIONS (\*denotes an invited talk, dates since Ph.D. awarded):

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- Burgin, A.J.**, T. Loecke, D. Riveros-Iregui, S. Thomas, A. Ward, C. A. Davis, and M. St. Clair. Weather whiplash in agricultural regions creates unforeseen changes in water quality. Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- \***Burgin, A.J.**, T. Loecke, C. A. Davis, M. St. Clair, A. Ward, D. Riveros-Iregui, and S. Thomas. 2013. Drought-induced enrichment of soil nitrogen leads to record high nitrate loading to agricultural river networks. American Geophysical Union, San Francisco, CA, 8-14 December 2013.
- \***Burgin, A.J.** C.A. Davis, T. Loecke, D. Riveros-Iregui, D. Schnoebelen, M. St. Clair, S. Thomas, A. Ward, and L. Weber. 2013. Flood and drought-enhanced variations in streamwater nitrate flux in agricultural watersheds. Ecological Society of America, Minneapolis, MN 2-8 August 2013.
- Burgin, A.J.**, V.A. Schoepfer, A.M. Helton, E.S. Bernhardt. 2013. Saltwater driven alteration of microbial metabolism distribution in a coastal wetland. Society of Wetland Scientists, Duluth, MN. 2-7 June 2013.
- Burgin, A.J.**, V.A. Schoepfer, A.M. Helton, M. Ardón, E.S. Bernhardt, R.A. Payn, G.C. Poole. 2012. How does saltwater intrusion alter anaerobic microbial metabolism in a freshwater wetland? 9th INTECOL International Wetlands Conference. Orlando, FL. June 2012.
- \***Burgin, A.J.** and P.M. Groffman. Soil O<sub>2</sub> controls denitrification rates and N<sub>2</sub>O yield in a riparian wetland. Society of Wetland Scientists (SWS) 3-8 July 2011, Prague CR.
- Burgin, A.J.** and P.M. Groffman. Oxygen controls denitrification rates and greenhouse gas production in a riparian wetland. Ecological Society of America (ESA) meeting, 1-6 August 2010, Pittsburgh, PA.
- Burgin, A.J.** and P.M. Groffman. Oxygen controls denitrification rates and end-products in a riparian wetland. Joint meeting of the American Society of Limnology and Oceanography (ASLO) and North American Benthological Society (NABS). 8 June 2010, Santa Fe, NM.
- \***Burgin, A.J.** and S.K. Hamilton. Microbial linkages in the N and S cycles: experimental evidence from lakes and wetlands. Ecological Society of America (ESA) meeting, 3-8 August 2009, Albuquerque, NM. (New Phytologist Award from ESA Biogeosciences)
- \***Burgin, A.J.**, S.K. Hamilton, and P.M. Groffman. Ecosystem controls on N cycling: experimental evidence from lakes and wetlands. Society of Wetland Scientists (SWS) meeting, 17-22 June 2009, Madison, WI.
- Burgin, A.J.**, S.K. Hamilton, S.E. Jones and J. Lennon. Nitrate use by sulfur bacteria in a stratified lake. North American Benthological Society (NABS) meeting, 17-22 May 2009, Grand Rapids, MI.
- Burgin, A.J.** and S.K. Hamilton. Carbon and sulfide as controls on nitrogen cycling in freshwater sediments. Ecological Society of America (ESA) meeting, 3-8 August 2008, Milwaukee, WI.
- \***Burgin, A.J.** Alternative pathways of nitrate removal from freshwater ecosystems. Research Coordination Network (RCN) for Denitrification across Landscapes and Waterscapes. Horn Point Laboratory, MD, 27-30 May 2008.
- Burgin, A.J.**, S.K. Hamilton, W. Gardner, and M. McCarthy. The relative importance of denitrification, dissimilatory nitrate reduction to ammonium (DNRA) and anaerobic ammonium oxidation

(anammox) to overall nitrate removal in freshwater ecosystems. International Society of Limnology (SIL), Montreal, QC, Canada, 12-18 August 2007.

**Burgin**, A.J. and S.K. Hamilton. Carbon and sulfide as controls on dissimilatory nitrate reduction to ammonium (DNRA) in freshwater sediments. North American Benthological Society (NABS) meeting, 3-9 June 2007, Columbia, SC.

\***Burgin**, A.J., and S.K. Hamilton. Evidence for sulfur-driven nitrate removal in freshwater wetlands. 10<sup>th</sup> International Symposium on **Wetland Biogeochemistry**. Annapolis, MD. 1-4 April 2007. *Awarded best student presentation.*

#### 2015 CO-AUTHORED PRESENTATIONS (\*denotes an invited talk, *postdocs*, *grad* or # undergrad students):

**Jarecke**, K.M., K. Song, T.D. Loecke, A.J. Burgin. Microbial response to environmental change: Implications for wetland restoration. Oral Presentation, University of Nebraska Applied Ecology Seminars. Lincoln, NE. April, 2015.

**Jarecke**, K.M., K. Song, T.D. Loecke, A.J. Burgin. Microbial response to environmental change: Implications for wetland restoration. Oral Presentation, University of Nebraska Applied Ecology Seminars. Lincoln, NE. April, 2015.

**Jarecke**, K.M., T.D. Loecke, A.J. Burgin. Coupling soil oxygen and greenhouse gas dynamics using high frequency sensor data. Poster Presentation, Future of Big Data Meeting. Lincoln, NE. November, 2014.

Ward: presented Kaycee's poster, *High-frequency Nitrate Monitoring to Quantify Uncertainties of Sampling Strategies in Agricultural Watersheds*, as well as one by Carrie Davis (citation below) at our NSF Site Visit meeting for the IML-CZO.

Davis, Ward, Burgin, Loecke, Riveros-Iregui, Schnoebelen, Just, Thomas, Weber, St. Clair. Antecedent moisture conditions control mobilization of nutrients in Clear Creek Watershed.

**Reynolds**, K.N.; Loecke, T.D.; Burgin, A.J.; Davis, C.A.; Riveros-Iregui, D.; Thomas, S.A.; Ward, A.S.; St. Clair, M.A. (November 2014). *High-frequency Water Quality Monitoring to Quantify Uncertainties of Sampling Strategies in Agricultural Watersheds*. The Future of Big Data: From Data to Knowledge. Lincoln, Nebraska. -- Awarded Second Place Poster

**Reynolds**, K.N.; Loecke, T.D.; Burgin, A.J.; Davis, C.A.; Riveros-Iregui, D.; Thomas, S.A.; Ward, A.S.; St. Clair, M.A. (March 2015). *High-frequency Nitrate Monitoring to Quantify Uncertainties of Sampling Strategies in Agricultural Watersheds*. School of Natural Resources Graduate Student Association Poster Contest. Lincoln, Nebraska

**Reynolds**, K.N.; Loecke, T.D.; Burgin, A.J.; Davis, C.A.; Riveros-Iregui, D.; Thomas, S.A.; Ward, A.S.; St. Clair, M.A.; (March 2015). *Water Quality in Agricultural Watersheds: Exploring Patterns, Fluxes and Uncertainties of Nitrate Using High-Resolution Data*. Invited Seminar: Coe College. Cedar Rapids, IA.

**Reynolds**, K.N.; Loecke, T.D.; Burgin, A.J.; Davis, C.A.; Riveros-Iregui, D.; Thomas, S.A.; Ward, A.S.; St. Clair, M.A. (May 2015). *High-Frequency Nitrate Sampling to Determine Sufficient Monitoring Strategies in Agricultural Watersheds*. Society for Freshwater Science Annual Meeting. Milwaukee, WI.

#### 2014 CO-AUTHORED PRESENTATIONS (\*denotes an invited talk, *postdocs*, *grad* or # undergrad students):

**Prior**, K., Ward, A.S., Davis, C.A., **Burgin**, A.J., Loecke, T.D., Riveros-Iregui, D.A., Thomas, S.A., St. Clair, M.A. In-stream Nitrogen Processing and Dilution in an Agricultural Stream Network. Abstract submitted for AGU 2014.

Ward, A.S., CA Davis, **AJ Burgin**, TD Loecke, DA Riveros-Iregui, DA Schnoebelen, CL Just, SA Thomas, LJ Weber, MA St. Clair, KE Dalrymple, Y LI and K Prior. In-stream nitrate responses integrate human and climate systems in an intensively managed landscape. Abstract submitted for AGU 2014.

**Reynolds**, K.N., T.D. Loecke, A.J. **Burgin**, C.A. Davis, D. Riveros-Iregui, S.A. Thomas, A.S. Ward and M.A. St. Clair. Using a high-frequency monitoring network to quantify uncertainties of sampling strategies in agricultural watersheds. Poster Presentation for UNL "Big Data" Symposium, Nov 2014.

K.M. **Jarecke**, T.D. Loecke, and A.J. **Burgin**. Coupling soil oxygen and greenhouse gas dynamics using

- high-frequency sensor data. Poster Presentation for UNL “Big Data” Symposium, Nov. 2014.
- K.M. Jarecke, T.D. Loecke, and A.J. Burgin.* Coupling soil oxygen and greenhouse gas dynamics at the aquatic-terrestrial interface. Oral presentation at the Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- C.M. Webber, C. Chizinski, R.J. Alexander and A.J. Burgin.* Phytoplankton community response to alum lake restorations in the Midwestern US. Oral presentation at the Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- M.A. Trowbridge, M. Pegg and A.J. Burgin.* The response of primary production to nutrient and fish community restoration techniques in eutrophic sandpit lakes. Oral presentation at the Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- K.N. Reynolds, T.D. Loecke, D.A. Riveros-Iregui, A.J. Burgin, S.A. Thomas, A.S. Ward, C.A. Davis and M.A. St. Clair.* Using a high-frequency monitoring network to quantify optimal sampling strategies in agricultural watersheds. Oral presentation at the Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- #*K.E. Schlafke, C.M. Webber and A.J. Burgin.* Sedimentation controls zooplankton community dynamics following restoration in Midwestern (USA) sandpit lakes. Poster presentation at the Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- #*D. J. Moscicki, V.A. Schoepfer, C.M. Webber, M.A. Trowbridge and A.J. Burgin.* The response of internal phosphorus loading to alum addition and rough fish removal in Midwestern sandpit lakes. Poster presentation at the Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- #*C. Silvey, K.M. Jarecke, T.D. Loecke, and A.J. Burgin.* Species specific plant-mediate greenhouse gas transport from wetland mesocosms. Poster presentation at the Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- #*E.R. Waring, V.A. Schoepfer, A.J. Burgin, J.P. Ore, C. Detweiler and S. Elbaum.* Using unmanned aerial vehicles (UAVs) to map sources of groundwater in a saline wetland. Poster presentation at the Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- V.A. Schoepfer, K.E. Schlafke, A.J. Burgin, T. D. Loecke.* The influence of sea water inundation on soil heterogeneity in a coastal freshwater wetland. Oral presentation at the Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- C.J. Adams, A.J. Burgin, T.D. Loecke, S.A. Thomas, M.A. St. Clair, C.A. Davis, K.N. Reynolds, A.S. Ward, and D.A. Riveros-Iregui.* The effect of discharge on phosphorus loading to the Iowa-Cedar Basins. Poster presented at the Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- T.D. Loecke, K.M. Jarecke, and A.J. Burgin.* Greenhouse gas balance of a wetland interrupted by 120 years of agriculture. Oral presentation at the Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- Davis, C.A., A.S. Ward, A.J. Burgin, T.D. Loecke, D.A. Riveros-Iregui, D. Schnoebelen, D. Just, S.A. Thomas, L. Weber, and M. St. Clair.* Antecedent moisture controls on stream nitrate flux in an agricultural watershed, Clear Creek, Iowa. Poster presented at the Joint Aquatic Sciences Meeting, Portland, OR 18-23 June 2014.
- \**A.J. Burgin, C. Webber and M. Trowbridge.* The effectiveness of alum as a tool for improving water quality: Case studies from Grand Lake St. Marys (OH) and the Fremont Lakes Recreation Area (NE). Presented at the Nebraska Department of Environmental Quality, Lincoln, NE, 9 May 2014.
- #*C. Silvey, K.M. Jarecke, T.D. Loecke, and A.J. Burgin.* Species specific plant-mediate greenhouse gas transport from wetland mesocosms. Poster presentation UNL-UCARE Research Symposium. Also presented at the SNR Elevator Speech Competition (17 April 2014) and voted **Best Undergraduate Poster**.
- K.M. Jarecke, T.D. Loecke, and A.J. Burgin.* Does soil aggregation affect carbon storage in a restored wetland? Poster presented at the SNR Elevator Speech Competition (17 April 2014) and voted **Best Graduate Student Poster**.
- T.D. Loecke, A.J. Burgin, and K.M. Jarecke.* Soil organic carbon in a wetland interrupted by a century of

agriculture. Geological Society of America - North-Central Section 48<sup>th</sup> Annual Meeting. Lincoln, NE, 24-25 April 2014.

Jarecke, K.M., T.D. Loecke, and **A.J. Burgin**. Coupling greenhouse gas emissions to soil O<sub>2</sub> dynamics at the aquatic-terrestrial interface. Geological Society of America - North-Central Section 48<sup>th</sup> Annual Meeting. Lincoln, NE, 24-25 April 2014.

Schoepfer, V.A., K. Schlafke, **A.J. Burgin**, and T.D. Loecke. Characterizing spatial and temporal heterogeneity of iron-sulfur interactions in a coastal freshwater wetland. Geological Society of America - North-Central Section 48<sup>th</sup> Annual Meeting. Lincoln, NE, 24-25 April 2014.

## **PROFESSIONAL SERVICE**

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**Member, Board of Directors, Friends of the Kaw (Kansas River)**

**Organizing Co-Chair, 2016 Annual Meeting of the Society for Freshwater Science (2016)**

**Chair, Global Change Ecology Section of the Society of Wetland Scientists (2013)**

**Chair, Aquatic Ecology Section, Ecological Society of America (2016-2017)**

**Chair-Elect, Aquatic Ecology Section, Ecological Society of America (2014-2015)**

**Early Career Committee Member, Joint Aquatic Sciences Meeting (2014)**

**Environmental Defense Fund Low-Carbon Farming project, Advisory Committee Member**

**Proposal Reviewer:** NSF Ecosystems DDIG panelist (Spring 2014), NSF Ecosystems Panelist (Spring 2011, Fall 2012), NSF Bio Oceanography, NSF Office of Polar Programs / ARC, NSF-LTREB, NSF DEB-Ecology, NSF DEB-Ecosystems, Estonian Science Foundation, LA, OH and RI Sea Grant

**Manuscript Reviewer:** *Biogeochemistry, JGR Biogeosciences, Journal of the North American Benthological Society, Wetlands, Environmental Science and Technology, Estuaries and Coasts, Environmental Management, Limnology and Oceanography, Hydrologic Processes, Ecological Applications, Water Resources, Environmental Microbiology, Water Research, Journal of Environmental Quality, Soil Science Society of America Journal, Microbial Ecology, Freshwater Biology*

**Organized Special Sessions** at National and International conferences: Joint Aquatic Science Meeting May 2014; SWS/INTECOL 2012 Salinization of Freshwater Wetlands; ASLO/NABS 2010; Alternative Nitrogen Cycling Pathways Special Session SIL 2007; LTER All-Scientists Meeting 2007 and the 2<sup>nd</sup> LTER Graduate Student Symposium

### **Departmental/University Service:**

UNL-SNR Seminar Committee Chair, April 2014-2015

UNL- SNR Graduate Committee, Member, Sept 2014- 2015

Search Committee member for Water Quality Extension Educator and SNR Recruiting Coordinator

Research Technologist Search Committee Member, UNL SNR (2011 x2)

Admissions Committee, WSU Environmental Sciences Ph.D. Program (2009-2011)

Undergraduate Curriculum Committee, WSU EES Department (2010-2011)