

**CURRICULUM VITAE
CHRISTOPHER G. PETERSON**

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EDUCATION

- Ph.D., Aquatic Biology; University of Louisville - May, 1989. Dissertation: "Timing of disturbance and development of epilithic algal communities."
- M.Sc., Aquatic Biology; University of Nevada, Las Vegas - December, 1984. Thesis: "Benthic diatom community dynamics in the Colorado River: Interactive effects of periodic desiccation and current regime."
- B.Sc., Fisheries Science; University of Arizona (w/ distinction) - May, 1982.

RESEARCH INTERESTS

- Effects of disturbance & ecological history on community structure and dynamics.
- Physical, chemical, and biological processes controlling succession.
- Landscape influences on algal community structure, function, and distribution
- Role of algal species identity & community structure on ecosystem processes.

Courses Taught

- Plants & Civilization, Evolution & Genetics, Human Impact on the Environment, Principles of Ecology, Integrative Environmental Seminar

POSITIONS HELD

- **Associate Dean of Academics, School of Environmental Sustainability, Loyola University Chicago.** 8/20 - present
- **Associate Dean of Academics, Institute of Environmental Sustainability, Loyola University Chicago.** 1/17 – 8/20
- **Academic Program Director, Institute of Environmental Sustainability, Loyola University Chicago.** 7/13 – 12/16.
- **Chair, Environmental Science Department, College of Arts & Sciences, Loyola University Chicago.** 1/11 – 6/13.
- **Director, Environmental Studies/Science Program, College of Arts & Sciences, Loyola Univ. Chicago.** 7/05 – 12/10.
- **Professor** 8/03-present, **Associate Professor** 8/97-8/03, **Assistant Professor** 8/91-8/97. Department of Natural Science [pre-2011]/Environmental Science Department [2011-2013]/IES [2013 – 2020]/SES [2020 – present], Loyola University Chicago. Courses Taught: *Principles of Ecology, Evolution & Genetics, Plants & Civilization, Human Impact on the Environment, Integrative Environmental Seminar.*
- **Post-Doctoral Research Associate** 4/89-8/91. Department of Zoology, Arizona State Univ. National Science Foundation Grant to S. G. Fisher: Stability of a stream ecosystem to disturbance by flooding and drying.
- **Pre-Doctoral Fellow** 1/85-3/89. Department of Biology, Univ. Louisville. Research: Effects of disturbance timing on resistance and recovery of algal communities. Susceptibility and digestibility of lotic diatoms to caddisfly grazing. Spatial and temporal factors affecting riverine phytoplankton assemblages. Effects of light regime on algal community development and response to disturbance. Effects of nutrient enrichment on rates and patterns of succession in lotic diatom communities. Diatom drift and colonization dynamics.
- **Tutor** 8/86-12/88. Univ. Louisville. Tutored student athletes in Anatomy & Physiology and General Biology.
- **Teaching Assistant & Lecturer** 6/86-7/86. Cedar Point Biol. Station. Assisted in Limnology laboratories and prepared and presented lectures on stream ecology.
- **Research Associate** 7/85-8/85. Army Corps of Engineers Research Grant to R. J. Stevenson: Effects of barge traffic on Ohio River plankton.

- **Research Assistant** 5/85-7/85. Nebraska Water Resources Research Grant to K. D. Hoagland: Source of algal colonizers on rock substrates in a freshwater impoundment.
- **Graduate Teaching Assistant** 8/82-12/84. Univ. Nevada, Las Vegas. Labs in Human Biology for non-majors and Human Anatomy & Physiology.

PROFESSIONAL SOCIETIES

- Ecological Society of America (since 1987) - Society for Freshwater Science (formerly NABS - since 1986)
- Phycological Society of America (since 1984)

REFEREED PUBLICATIONS (Bold = Undergraduates)

- 37.** BINH, C. T. T., E. Adams, **E. Vigen**, T. TONG, M. A. Alsina, J.-F. GAILLARD, K. A. GRAY, C. G. PETERSON & J. J. KELLY (2016) Chronic addition of a common engineered nanomaterial alters biomass, activity and composition of stream biofilm communities. *Environmental Science – Nano* **3**: 619 - 630
- 36.** BINH, C. T. T., C. G. PETERSON, T. TONG, K. A. GRAY, J.-F. GAILLARD, & J. J. KELLY (2015) Comparing acute effects of a nano-TiO₂ pigment on cosmopolitan freshwater phototrophic microbes using high-throughput screening. *PLOS-One*. DOI:10.1371/journal.pone.0125613
- 35.** KALSCHUR, K. N., M. ROJAS, C. G. PETERSON, J. J. KELLY, & K. A. GRAY (2012) Algal Exudates and Stream Organic Matter Influence Structure and Function of Denitrifying Bacterial Communities. *Microbial Ecology* **64**(4): 881-892 DOI: 10.1007/s00248-012-0091-1
- 34.** KALSCHUR, R. R. PENSAR, A. D. DALEY, S. M. PECHAUER, J. J. KELLY, C. G. PETERSON & K. A. GRAY (2012) Effects of anthropogenic inputs on the organic quality of urbanized streams. *Water Research* **46**: 2515-2524 DOI: 10.1016/j.watres.2012.01.043
- 33.** PETERSON, C. G., A. D. DALEY, S. M. PECHAUER, K. N. KALSCHUR, **M. J. SULLIVAN**, **S. L. KUFTA**, M. ROJAS, K. A. GRAY, & J. J. KELLY (2011) Development of associations between microalgae and denitrifying bacteria in streams of contrasting anthropogenic influence. *FEMS Microbiology Ecology* **77**: 477 – 592.
- 32.** VALETT, H. M., S. A. THOMAS, P. J. MULHOLLAND, J. R. WEBSTER, C. N. DAHM, C. S. FELLOWS, C. L. CRENSHAW, & C. G. PETERSON (2008) Endogenous and exogenous control of ecosystem function: N cycling in headwater streams. *Ecology* **89**: 3515-3527.
- 31.** ISHIDA, C. A., S. ARNON, C. G. PETERSON, J. J. KELLY, & K. A. GRAY (2008) Influence of algal community structure on denitrification rates in periphyton cultivated on artificial substrates. *Microbial Ecology* **56**:140-152.
- 30.** ARNON, S., C. G. PETERSON, K. A. GRAY, & A. I. PACKMAN (2007) Influence of flow conditions and system geometry on nitrate use by benthic biofilms: Implications for nutrient mitigation. *Environmental Science & Technology*. **41**: 8142-8148.
- 29.** ARNON, S., A. I. PACKMAN, C. G. PETERSON, & K. A. GRAY (2007) The effects of overlying flow velocity on periphyton structure and denitrification. *Journal of Geophysical Research - Biogeosciences*. **112**: G01002
- 28.** THOMAS, S. A., VALETT, H. M., MULHOLLAND, P. J., FELLOWS, C. S., WEBSTER, J. R., DAHM, C. N., & PETERSON, C. G. (2003) A regression approach to estimating reactive solute uptake in advective and transient storage sub-compartments of stream ecosystems. *Advances in Water Resources*. **26**: 954-976.
- 27.** PETERSON, C. G., & **T. L. JONES**. (2003) Diatom viability in insect feces: comparison between two benthic species, *Achnantheidium lanceolatum* and *Synedra ulna*. *Hydrobiologia* . **501**: 93-99.

26. THOMAS, S. A., VALETT, H. M., WEBSTER, J. R., MULHOLLAND, P. J., FELLOWS, C. S., DAHM, C. N., & PETERSON, C. G. (2001) Nitrogen retention in headwater streams: the influence of groundwater-surface water interaction. *In: Optimizing Nitrogen Management in Food and Energy Production and Environmental Protection: Proceedings of the 2nd International Nitrogen Conference on Science and Policy. TheScientificWorld. 1: 623-631.*
25. PETERSON, C. G., HORTON, M., MARSHALL, M. C., VALETT, H. M., & DAHM, C. N. (2001) Spatial and temporal variation in the influence of grazing macroinvertebrates on epilithic algae in a montane stream. *Archiv für Hydrobiologie 153: 29-54.*
24. PETERSON, C. G., H. M. VALLET, & C. N. DAHM . (2001) Shifts in habitat templates for lotic microalgae linked to interannual variation in snowmelt intensity. *Limnology & Oceanography. 46: 858-870.*
23. PETERSON, C. G., H. M. VALETT, C. N. DAHM, & M. C. MARSHALL. (2000) Heterogeneity in algal-grazer associations in a small montane stream. *Internationale Vereinigung für theoretische und angewandte Limnologie, Verhandlungen. 27:2453-2460.*
22. PETERSON, C. G., & A. J. BOULTON. (1999) Stream permanence influences food availability to grazing tadpoles in arid-zone streams. *Oecologia. 118:340-352.*
21. PETERSON, C. G., K. A. VORMITTAG, & H. M. VALETT. (1998) Ingestion and digestion of epilithic algae by larval insects in a heavily grazed montane stream. *Freshwater Biology. 40:607-623.*
20. JOHNSON, R. E., N. C. TUCHMAN, & C. G. PETERSON. (1997) Changes in vertical microdistribution of diatoms during periphyton mat development. *Journal of the North American Benthological Society. 16:503-519.*
19. PETERSON, C. G. (1996) Mechanisms of lotic microalgal colonization following space-clearing disturbances acting at different spatial scales. *Oikos. 77:417-435.*
18. PETERSON, C. G., A. C. WEIBEL, N. B. GRIMM, & S. G. FISHER (1994) Mechanisms of benthic algal recovery following spates: Comparison of simulated and natural events. *Oecologia 98:280-290.*
17. PETERSON, C. G., T. L. DUDLEY, K. D. HOAGLAND, & L. M. JOHNSON (1993) Infection, growth, and community-level consequences of a diatom pathogen in a Sonoran Desert stream. *Journal of Phycology 29:442-452*
16. BOULTON, A. J., C. G. PETERSON, N. B. GRIMM, & S. G. FISHER (1992) Stability of an aquatic macroinvertebrate community in a multi-year hydrologic disturbance regime. *Ecology 73:2192-2207.*
15. PETERSON, C. G. & R. J. STEVENSON (1992) Resistance and resilience in lotic algal communities: Importance of disturbance timing and current. *Ecology 73:1445-1461*
14. PETERSON, C. G. & N. B. GRIMM (1992) Temporal variation in enrichment effects during periphyton succession in a nitrogen-limited desert stream ecosystem. *Journal of the North American Benthological Society 11:20-36*
13. STEVENSON, R. J. & C. G. PETERSON (1991) Emigration and immigration can be important determinants of benthic diatom assemblages in streams. *Freshwater Biology 26:279-294.*
12. STEVENSON, R. J., C. G. PETERSON, D. B. KIRSCHTEL, C. C. KING, & N. C. TUCHMAN (1991) Density-dependent growth, ecological strategies, and effects of nutrients and shading on benthic diatom succession in streams. *Journal of Phycology 27:59-69.*
11. PETERSON, C. G. & R. J. STEVENSON (1990) Post-spate development of epilithic algal communities in different current environments. *Canadian Journal of Botany 68:2092-2102.*
10. HOAGLAND, K. D. & C. G. PETERSON (1990) Effects of light and wave disturbance on vertical zonation of attached microalgal communities in a large reservoir. *Journal of Phycology 26:450-457.*

9. PETERSON, C. G., K. D. HOAGLAND, & R. J. STEVENSON (1990) Timing of wave disturbance and the resistance and recovery of a freshwater epilithic microalgal community. *Journal of the North American Benthological Society* **9**:54-67.
8. PETERSON, C. G. & K. D. HOAGLAND (1990) Effects of wind-induced turbulence and algal mat development on epilithic diatom succession in a large reservoir. *Archiv für Hydrobiologie* **118**:47-68.
7. PETERSON, C. G. & R. J. STEVENSON (1989) Substratum conditioning and diatom colonization in different current regimes. *Journal of Phycology* **25**:790-793.
6. PETERSON, C. G. & R. J. STEVENSON (1989) Seasonality in river phytoplankton: Multivariate analyses of data from the Ohio River and six Kentucky tributaries. *Hydrobiologia* **182**:99-114.
5. STEVENSON, R. J. & C. G. PETERSON (1989) Variation in benthic diatom (Bacillariophyceae) immigration with habitat characteristics and cell morphology. *Journal of Phycology* **25**:120-129.
4. PETERSON, C. G. (1987) Gut passage and insect grazer selectivity of lotic diatoms. *Freshwater Biology* **18**:455-460.
3. PETERSON, C. G. (1987) Influences of flow regime on development and desiccation response of lotic diatom communities. *Ecology* **68**:946-954.
2. PETERSON, C. G. (1986) Effects of discharge reduction on diatom colonization below a large hydroelectric dam. *Journal of the North American Benthological Society* **5**:278-289.
1. HOAGLAND, K. D., A. ZLOTSKY, & C. G. PETERSON (1986) The source of algal colonizers on rock substrates in a freshwater impoundment. Pages 21-39 in: L. V. Evans and K. D. Hoagland (eds.). *Algal Biofouling*. Elsevier Press, Amsterdam.

BOOK CHAPTERS

- PETERSON, C. G. (2007) The Ecology of Non-Marine Algae: Streams. Pages 434-558 In: (T. Orchard, J. Huisman, & T. Entwisle, eds.) *The Algae of Australia*. Australian Biological Resources Study, Canberra.
- . PETERSON, C. G. (1996) Response of benthic algal communities to natural physical disturbance. Pages 375-402 In: (R. J. STEVENSON, M. L. BOTHWELL, & R. L. LOWE, eds) *Algal Ecology in Freshwater Benthic Ecosystems*. Academic Press, San Diego, CA.

NON-REFEREED PUBLICATIONS

- PETERSON, C. G., & N. C. TUCHMAN. (1996) Substratum-associated microbiota. (solicited review of 1995 literature). *Water Environment Research* **68**:755-768.
- TUCHMAN, N. C. & C. G. PETERSON. (1995) Substratum-associated microbiota. (solicited review of 1994 literature). *Water Environment Research* **67**:702-713.
- PETERSON, C. G. & N. C. TUCHMAN. (1994) Substratum-associated microbiota. (solicited review of 1993 literature). *Water Environment Research* **66**:602-611.
- TUCHMAN, N. C., & C. G. PETERSON (1993) Substratum-associated microbiota. (solicited review of 1992 literature). *Water Environment Research* **65**:548-558.
- PETERSON, C. G. (1992) Meeting review - 40th North American Benthological Society Meeting. *Phycological Newsletter* **28**:4-5.

- PETERSON, C. G., & N. C. TUCHMAN (1992) Substratum-associated microbiota. (solicited review of 1991 literature). *Water Environment Research* 64:625-632.
- STEVENSON, R. J., J. M. MOLLOY, C. G. PETERSON, & J. J. LEWIS (1985) Laboratory simulation of navigation traffic physical effects on river plankton. Report to U.S. Corps of Engineers, Louisville, KY.

FIRST-AUTHORED ABSTRACTS & PAPERS PRESENTED (Bold = Undergraduates)

- PETERSON, C. G., M. ROJAS, K. N. KALSCHUR, A. D. DALEY, S. M. PECHAUER, K. A. GRAY, & J. J. KELLY. (2012) Links between bacteria and algal Species Composition in Stream biofilms: Possible relevance to ecosystem processes. Annual Meeting, Society for Freshwater Science, Louisville, KY. May 2012.
- PETERSON, C. G., A. D. DALEY, K. N. KALSCHUR, S. M. PECHAUER, K. A. GRAY, & J. J. KELLY (2011) Relevance of diatom species composition to biofilm-based stream ecosystem processes: Possible mechanisms and rampant speculation. 21st North American Diatom Symposium. Flathead Lake Biological Station. 14-16 Sept. 2011.
- PETERSON, C. G., A. D. DALEY, S. M. HELL, K. N. KALSCHUR, **M. SULLIVAN, S. L. KUFTA**, K. A. GRAY, & J. J. KELLY (2010) Development of benthic micro-algal and denitrifying-bacterial community structure during biofilm establishment in streams of contrasting attributes. Joint Meeting, Amer. Soc. Limnol. Oceanogr./N. Amer. Benthol. Soc., Santa Fe, NM
- PETERSON, C. G. (2004) Nutrient transfer between benthic microalgae and their consumers: Does algal species identity matter? Annual Meeting, N. Amer. Benthol. Soc., Vancouver, B.C.
- PETERSON, C. G. (2002). Algal species composition: Ecological relevance beyond bioassessment. Annual Meeting, N. Amer. Benthol. Soc., Pittsburg, PA.
- PETERSON, C. G., P. J. MULHOLLAND, S. A. THOMAS, H. M. VALETT, J. R. WEBSTER, & C. N. DAHM (2001). Effects of taxonomic structure and biomass on nitrate uptake by lotic epilithon: a stable isotope approach. Annual Meeting, N. Amer. Benthol. Soc., LaCrosse, WI
- PETERSON, C. G. (2000) Context-dependent variation in microalgal species performance in lotic systems. *Invited Paper*. Annual Meeting, N. Amer. Benthol. Soc., Keystone, CO.
- PETERSON, C. G., VALETT, H. M., & DAHM, C. N. (1999) Interannual variation in snowmelt intensity and benthic microalgal dynamics in a montane stream. Annual Meeting, N. Amer. Benthol. Soc., Duluth, MN.
- PETERSON, C. G., **MARSHALL, M.**, VALETT, H. M. & DAHM, C. N. (1998) Convergence of benthic assemblages on reintroduced and permanently inundated cobbles in a montane stream. XXVII Societas Internationalis Limnologiae Congress, Dublin, Ireland.
- PETERSON, C. G. & A. J. BOULTON (1997) Ingestion and digestion of lotic diatoms by grazing tadpoles in episodic, arid-zone streams: variation tied to reach permanence. 14th North American Diatom Symposium, Univ. Michigan Biol. Stn, Pelston, MI.
- PETERSON, C. G. & **K.VORMITTAG** (1997) Selection and differential digestion of epilithic algae by caddisfly and mayfly larvae in a heavily grazed montane stream. Annual Meeting, N. Amer. Benthol. Soc., San Marcos, TX
- PETERSON, C. G. & A. J. BOULTON (1997) Tadpole selectivity and gut passage of epilithic algae: implications for algal dispersal in episodic, arid-zone streams. *Invited Paper*. Winter Meeting, Amer. Soc. Limnol. Oceanogr., Santa Fe, NM.

- PETERSON, C. G., H. M. VALETT, M. B. BERG, **D. MOYER, M. HORTON**, & C. N. DAHM (1996) Periphyton and macroinvertebrate response to snowmelt and post-snowmelt variation in hydrology and nutrient supply in a montane stream. Annual Meeting, N. Amer. Benthol. Soc., Kalispell, MT.
- PETERSON, C. G. (1995) Temporal and interspecific variation in benthic algal drift and colonization dynamics in a desert stream. 13th North American Diatom Symposium. Iowa Lakeside Laboratory, Milford, IA
- PETERSON, C. G., N. B. GRIMM, & S. G. FISHER (1995) Algal drift and colonization dynamics in a Sonoran Desert stream before and after a spate. Annual Meeting, N. Amer. Benthol. Soc. Keystone, CO
- PETERSON, C. G., N. B. GRIMM, & S. G. FISHER (1994) Variation in rates of benthic algal accrual in a desert stream: influence of initial biomass, season, & taxonomic composition. Annual Meeting, N. Amer. Benthol. Soc. Orlando, FL
- PETERSON, C. G. (1993) Causes and consequences of differential resistance of benthic algal communities to physical disturbance. *Invited Paper*. Annual Meeting, N. Amer. Benthol. Soc. Calgary, Alberta
- PETERSON, C. G., T. L. DUDLEY, N. B. GRIMM, & S. G. FISHER (1992) Infection, growth, and consequences of an algal pathogen in a Sonoran Desert stream. Annual Meeting, Phycol. Soc. Amer. Honolulu, HI
- PETERSON, C. G., **A. C. WEIBEL**, N. B. GRIMM, & S. G. FISHER (1992) Effects of enrichment and scour on post-spate recovery of benthic algal communities. Annual Meeting, Ecol. Soc. Amer. Honolulu, HI
- PETERSON, C. G., T. L. DUDLEY, N. B. GRIMM, & S. G. FISHER (1992) Effects of an algal pathogen in a Sonoran Desert stream. Annual Meeting, N. Amer. Benthol. Soc. Louisville, KY.
- PETERSON, C. G. & N. B. GRIMM (1991) Effects of nitrogen limitation and grazing on lotic periphyton succession and community structure. *Invited Paper*. Annual Meeting, N. Amer. Benthol. Soc. Santa Fe, NM.
- PETERSON, C. G. & R. J. STEVENSON (1990) Resistance and recovery of lotic algal communities: Effects of disturbance timing, disturbance history, and habitat characteristics. Annual Meeting, Ecol. Soc. Amer. Snowbird, UT
- PETERSON, C. G. & R. J. STEVENSON (1990) Post-spate development of epilithic algal communities: Influence of species autecologies, biotic interactions, and current. *Invited Paper*. Annual Meeting, N. Amer. Benthol. Soc. Blacksburg, VA.
- PETERSON, C. G. (1989) Autogenic and allogenic factors affecting epilithic diatom succession in Lake McConaughy. Annual Meeting, N. Amer. Benthol. Soc. Guelph, Ontario.
- PETERSON, C. G. (1988) Succession and the importance of timing of disturbance in a wave-disturbed epilithic algal community. Annual Meeting, Ecol. Soc. Amer. Davis, CA
- PETERSON, C. G. (1987) Gut passage and insect grazer selectivity of lotic diatoms. 9th N. Amer. Diatom Symp. Tomahawk, WI.
- PETERSON, C. G. (1986) Effects of discharge reduction on diatom colonization in different flow regimes below a large hydroelectric dam. Annual Meeting, N. Amer. Benthol. Soc. Lawrence, KS.
- PETERSON, C. G. (1985) Influences of flow regime on development and desiccation response of lotic diatom assemblages. 8th N. Amer. Diatom Symp. Murray, KY.
- PETERSON, C. G. (1985) The effect of periodic desiccation and current regime on periphyton community development and diatom diversity. Annual Meeting, Ecol. Soc. Amer. Minneapolis, MN.

-PETERSON, C. G. (1984) A method for examining the influence of current regime and disturbance frequency on lotic periphyton communities. Annual Meeting, Ariz.-Nev. Acad. Sci. Tucson, AZ.

ABSTRACTS AS JUNIOR AUTHOR

- MOLARO, J. M., C. G. PETERSON and T. C. HOANG (2022) Effects of microplastics on phytoplankton communities in freshwater mesocosms. 32nd Society of Environmental Toxicology & Chemistry, Europe Annual Meetings. May, Copenhagen, Denmark.
- MOLARO, J. M., C. G. PETERSON AND T. C. HOANG (2022) Effects of microplastics on phytoplankton communities in freshwater mesocosms. 29th Annual Midwest Society of Environmental Toxicology & Chemistry Meetings. April, Madison, WI.
- MOLARO, J. M., C. G. PETERSON AND T. C. HOANG (2021) Effects of microplastics on phytoplankton communities in freshwater mesocosms. 42nd North American Annual Meetings, Society of Environmental Toxicology & Chemistry. November 14-18, Virtual.
- CHU, T. T. B., C. G. PETERSON, E. VIGEN, T. TONG, K. A. GRAY, J.-F. GAILLARD and J. J. KELLY (2015) Effects of nanotitania on benthic microbial communities in artificial streams. Annual Meetings, Society for Freshwater Research. Milwaukee, WI. May 17 – 21, 2015.
- CHU, T. T. B., C. G. PETERSON, T. TONG, K. A. GRAY and J. J. KELLY (2014) Freshwater phototrophic microbes vary in their acute responses to titanium-dioxide nanomaterials. Joint Aquatic Sciences Meeting, Portland, OR, May 18 – 23, 2014.
- ROJAS, M., K.N. KALSCHUR, K.A. GRAY, C.G. PETERSON, and J.J. KELLY. (2012) Algal species identity influences the development of denitrifying bacterial communities in periphytic biofilms. General Meeting of the American Society for Microbiology, June 16 - 19, 2012, San Francisco, CA.
- PETERSON, C.G., A.D. DALEY, S.M. PECHAUER, K.N. KALSCHUR, M.J. SULLIVAN, S.L. KUFTA, M. ROJAS, K.A. GRAY, J.J. KELLY. (2011) Development of associations between microalgae and denitrifying bacteria in streams of contrasting anthropogenic influence. General Meeting of the American Society for Microbiology, New Orleans, LA, May 21-24, 2011.
- DALEY, A. D., S.M. HELL, K. KALSCHUR, **S. L. KUFTA**, **M. SULLIVAN**, **R. BEDNARCZYK**, **J. S. SALIBA**, **S. BIGLEY**, K. A. GRAY, J. J. KELLY, C. G. PETERSON (2009) Linkage Among Algal/Bacterial Community Structure, Organic Exudates and Denitrification Potential in Stream Biofilms. Annual Meeting, N. Amer. Benthol. Soc., Grand Rapids, MI
- HELL, S. M., A. D. DALEY, K. KALSCHUR, **J. S. SALIBA**, **M. SULLIVAN**, **R. BEDNARCZYK**, **S. L. KUFTA**, **S. BIGLEY**, K. A. GRAY, C. G. PETERSON, J. J. KELLY (2009) The development of denitrifying biofilms in urban streams. Annual Meeting, Amer. Soc. Microbiol., Philadelphia, PA.
- KOSHOREK, J. L., M. B. BERG, & C. G. PETERSON (2006) Chironomid diet and algal community structure in a tropical pond. Annual Meeting, N. Amer. Benthol. Soc., Anchorage, AK
- ARNON, S., C. G. PETERSON, A. I. PACKMAN, & K. A. GRAY (2006) Flow conditions and substrate geometry strongly influence benthic denitrification. Annual Meeting, N. Amer. Benthol. Soc., Anchorage, AK
- VALETT, H. M., S. A. THOMAS, P. J. MULHOLLAND, J. R. WEBSTER, C. N. DAHM, & C. G. PETERSON (2004) Assessing transient storage influences on nutrient spiraling: an updated approach. Annual Meeting, N. Amer. Benthol. Soc., Vancouver, B.C.

- VALETT, H. M., S. A. THOMAS, P. J. MULHOLLAND, J. R. WEBSTER, C. N. DAHM, & C. G. PETERSON (2003) Assessing transient storage influences on nutrient spiraling: an updated assessment. Annual Meeting, Geological Society of America. Seattle, WA
- VALETT, H. M., S. A. THOMAS, P. J. MULHOLLAND, J. R. WEBSTER, C. N. DAHM, & C. G. PETERSON (2003) Nitrate spiraling in headwater streams: the importance of temporal variation. Annual Meeting, N. Amer. Benthol. Soc., Athens, GA.
- KOMINOSKI, J. S., N. C. TUCHMAN, P. A. MOORE, C. G. PETERSON, & R. G. WETZEL (2003) DOC derived from elevated CO₂-altered leaf litter: impacts on stream periphyton growth and community structure. Annual Meeting, N. Amer. Benthol. Soc., Athens, GA.
- EARL, S. R., H. M. VALETT, S. A. THOMAS & C. G. PETERSON (2002) Nitrogen retention in streams spanning a gradient of ambient streamwater nitrogen concentration. Annual Meeting, N. Amer. Benthol. Soc., Pittsburg, PA
- JONES, T. L., & C. G. PETERSON (2001). Interspecific differences in diatom viability after gut passage. XVI North American Diatom Symposium. Burntside Lake, MN.
- THOMAS, S. A., H. M. VALETT, P. J. MULHOLLAND, J. R. WEBSTER, C. N. DAHM, & C. G. PETERSON (2001). Nitrogen retention in headwater streams: the influence of surface-subsurface hydraulic exchange. 2nd International Nitrogen Conference. Potomac, MD 14-18 October.
- VALETT, H. M., S. A. THOMAS, J. R. WEBSTER, P. J. MULHOLLAND, C. N. DAHM, & C. G. PETERSON (2001). Nitrate processing and retention in streams (NPARS): parsing benthic and interstitial contributions to energy flow and nutrient retention. 49th Annual Meeting, N. Amer. Benthol. LaCross, WI
- HARPER, B. J., J. B. JONES, & C. G. PETERSON (1998) Large-scale nutrient dynamics in a southwestern desert stream ecosystem. Annual meeting, N. Amer. Benthol. Soc., Charlottetown, Prince Edward Island, Canada.
- BOULTON, A. J. & C. G. PETERSON (1997) The inside story: stream permanence controls food availability to grazers in an arid-zone spring. Annual Meeting, Australian Society for Limnology, Albury, New South Wales.
- MARSHALL, M. C., H. M. VALETT, C. G. PETERSON, and D. L. MOYER. (1996) Snowmelt influences on periphyton biomass in a montane headwater stream. Annual Meeting, North American Benthological Society. Kalispell, MT. June 1996.
- McCORMICK, P. V., R. J. STEVENSON, C. G. PETERSON, & J. CAIRNS Jr. (1991) Developing a general model of benthic algal succession. Annual Meeting, North American Benthological Society. Santa Fe, NM.
- KIRSCHTEL, D., N. BROOKS, C. KING, C. PETERSON, & R. J. STEVENSON. (1987) Periphyton succession: Community responses to nutrient enrichment. IX North American Diatom Symposium. Tomahawk, WI.
- STEVENSON, R. J, D. KIRSCHTEL, N. BROOKS, C. KING, & C. PETERSON (1987) Periphyton succession: Can population accumulation patterns be used to assign species to guilds? IX North American Diatom Symposium. Tomahawk, WI.
- STEVENSON, R. J. & C. G. PETERSON. (1987) Interspecific variation in benthic diatom immigration and emigration in streams. Annual Meeting, Ecological Society of America. Columbus, OH.
- KING, C. C., C. G. PETERSON, N. C. BROOKS, D. B. KIRSCHTEL, & R. J. STEVENSON. (1987) Effects of nutrient enrichment and shading on diatom succession in artificial stream channels. Annual Meeting, North American Benthological Society. Orono, ME.
- STEVENSON, R. J. & C. G. PETERSON (1986) Algal drift and recolonization of substrates in streams. Annual Meeting, Ecological Society of America. Syracuse, NY.

- STEVENSON, R. J., C. G. PETERSON, & J. M. MOLLOY. (1986) Effects of turbulence and turbidity on summer phytoplankton in the Ohio River. Annual Meeting, American Society of Limnology and Oceanography. Kingston, RI.
- STEVENSON, R. J. & C. G. PETERSON (1986) Algal drift and recolonization of substrates in streams. Annual Meeting, North American Benthological Society. Lawrence, KS.
- ROWLAND, S. M., N. R. KANIM, M. S. PARKER, C. G. PETERSON, & S. S. VAN VACTOR (1984) Onshore-offshore patterns in Cambrian shelly taxa in the western United States. Annual Meeting, Geological Society of America. Reno, NV.

GRANTS, CONTRACTS, & AWARDS

- **National Science Foundation** – ‘EAGER: Movement of microplastics within and between ecosystems: influences on zooplankton feeding behavior, primary productivity and nutrient availability in freshwater systems’. Co-PI with Tham Hoang (PI) and Martin Berg (Co-PI). \$299,939. 9/01/2020 – 8/31/2022
- **United States Department of Agriculture** – ‘Sustainable Urban Agricultural Education for a Food Secure and Sustainable Future: A Workshop Series, from Loyola University of Chicago.’ # 2012-02730 Co-PI with N. Tuchman (PI), L. Vail, S. Lishawa, S. Mitton. \$28,504. (1 year)
- **National Science Foundation**- “The Unintended Ecological Consequences of Nanomaterials: Effects of nanotitania in benthic systems.” w/ PI: John Kelly, Collaborative with Kimberly Gray & Jean-Francois Gaillard, Dept. Civil & Environmental Engineering, Northwestern University. Loyola Budget: \$242,167, 3/11 – 3/14.
- **Illinois Sea Grant** – “Impacts of nanomaterials on aquatic microbial communities.” \$10,000 w/ PI: John Kelly. 1/11-1/12.
- **National Science Foundation** - "Collaborative Research: “Mediation of denitrification by algal/bacterial interactions in stream periphyton: role of successional development and species identity" (DEB 07-0640716) \$263,400. Co-PI: John J. Kelly. 8/07-7/09. **Research Experience for Undergraduates (REU) Supplement.** 6/08-8/08, \$7000; 6/09-8/09, \$7000.
- **Center for Urban Environmental Research & Policy (CUERP) Research Fellow** - 8/07-12/07.
- **Summer Stipend for Research** - “Links between microalgal species diversity, species identity and functional attributes of stream ecosystems.” Loyola Univ. Chicago - 11/03. \$8000.
- **Summer Stipend for Research** - "Influences of variation in microalgal community structure on nitrogen retention in headwater streams." Loyola Univ. Chicago - 1/02. \$6000.
- **Master Teacher** - College of Arts & Sciences, Loyola University Chicago. 4/01.
- **National Science Foundation** - "Collaborative Research: *NO₃-N Retention in Headwater Streams: Riparian Vegetation, Metabolism and Subsurface Processes*" (DEB 98-16091) \$98,000. 5/99-5/03. **Research Experience for Undergraduates (REU) Supplements.** \$5000, 5/00-4/01; \$5000, 5/01-4/02; \$6000, 5/02-4/03.
- **Summer Stipend for Research** - "Biotic Response to Interannual Variation in Snowmelt Intensity in Montane Streams." Loyola Univ. Chicago - 1/98. \$6000.
- **National Science Foundation** - "*Stream/Groundwater Ecotones: Hydrology, Biogeochemistry and Ecology - Algal Ecology Subcontract*". \$25,296. 1/95-1/98.
- **Visiting Scientist** - National Inst. of Water & Atmospheric Research, Christchurch, New Zealand. 2/95. \$500NZ.
- **Visiting Scholar** - Univ. New England, Armidale, New South Wales, Australia. 1/95-2/95. \$1200A.
- **Paid Leave of Absence for Research.** Loyola Univ. Chicago. 1/95-5/95.
- **Summer Stipend for Research** - "Interactions between biological and physical mechanisms controlling dynamics of attached algal communities." Loyola Univ. Chicago - 1/93. \$5500.
- **Research Support Grant / Summer Stipend for Research** - "Mechanisms of sloughing in stream algal communities." Loyola Univ. Chicago - 4/92. \$6700.
- **Graduate Dean's Citation**, Univ. Louisville - 5/89.

- **Grant-in-Aid of Research** - "Diatom community response to flow disturbance in lotic and lentic systems." Sigma Xi. 6/87 \$200.
- **Graduate Research Grant** - "Maintenance of dominance hierarchies in diatom communities." Commission on Academic Excellence, Univ. Louisville. 12/86 \$500.
- **Pre-Doctoral Fellowship**, Univ. Louisville - 1/85-3/89. \$30,500 (plus tuition remission)
- **Graduate Research Scholarship** - "The effect of water fluctuations on periphyton diversity in the Colorado River." Graduate Student Association, Univ. Nevada, Las Vegas. 5/83. \$543.

PROFESSIONAL ACTIVITIES

- **External Academic Program Reviewer** – Evaluation of Environmental Science Interdisciplinary Program at St. Thomas University, St. Paul, MN. On-site visit 13 – 15 December, 2017. Final report submitted March 2018.
- **Member** – Nutrient Science Advisory Committee, Illinois Water Resources Center (9/2016 – 10/2018)
- **Panel Member** - Office of Exploratory Research, U.S. EPA (2/94); Joint EPA/NSF/USDA Water & Watersheds, National Science Foundation (8/99); Office of Research & Development, U.S. EPA, STAR Graduate-Student Fellowship Proposal Review Panel, Oceanography & Coastal Processes, (3/05), Freshwater Ecology (3/07, 3/08); Division of Environmental Biology – Ecosystem Science (10/24).
- **National Service Committees/Contributions** – Conservation & Environmental Issues Committee (CEIC), Member, Society for Freshwater Science (2013 - 2016). Environmental Stewardship Subcommittee, Society for Freshwater Science (2014 – 2016). Educational Testing Service, Question Reviewer/Contributor, Praxis Biology Test (2004-05, 2008, 2012 - 2016), Selection Committee for Rosemary Mackay Fund articles, *J. N. Amer. Benthol. Soc.* (1999-2001). Literature Review Committee, Water Environment Federation (1992-1996). Program Committee, 39th Annual Meeting, N. Amer. Benthol. Soc., Santa Fe, NM (1991). Organizing Committee, 8th N. Amer. Diatom Symp., Hancock Biol. Station, Murray, KY. (1985).
- **Associate Editor** - *Journal of the North American Benthological Society*, 3/95 - 6/01; *Marine & Freshwater Research*, 6/08 – 12/12.
- **Ad-Hoc Reviewer: Journals** - *American Midland Naturalist* (2005), *Aquatic Botany* (2006), *Aquatic Sciences* (2003-04), *Archiv für Hydrobiologie* (1992, 2003), *Canadian Journal of Fisheries & Aquatic Sciences* (1995, 2004, 2006), *Diatom Research* (1996), *Diversity & Distributions* (2011), *Ecological Applications* (2007, 2010), *Ecological Monographs* (2002, 2007), *Ecology* (1989-94, 2001, 2003, 2006 [2], 2009, 2013, 2017 [2]), *Ecosystems* (2000), *Environmental Monitoring & Assessment* (2012), *Environmental Science & Technology* (2015), *FEMS Microbiology Ecology* (2011, 2012, 2017, 2018, 2020. 2024), *Freshwater Biology* (2004, 2010), *Freshwater Science* (2017 [2]), *Hydrobiologia* (2002, 2004-05, 2009, 2024 [2]), *Inland Waters* (2023), *International Review of Hydrobiology* (2003[2]), *Journal of the North American Benthological Society* (1992 [2], 1993 [2], 1994[4], 1998, 2001, 2002[2], 2003[3], 2004-05, 2006 [2], 2007[2], 2008[2], 2009, 2011), *Journal of Phycology* (1990[3], 1992-94, 1996[2], 2000 [2], 2003, 2011), *Limnology & Oceanography* (1994, 1999-2002, 2005, 2016), *Marine & Freshwater Research* (2000, 2003, 2008), *New Zealand Journal of Marine & Freshwater Research* (2002 [2], 2003, 2005), *Oecologia* (1994, 2000, 2005, 2007. 2020), *Oikos* (1998, 2001[2]), *Peer-J* (2017), *Phycological Research* (2004), *Plos-One* (2018), *Proceedings of the 2nd International Conference on Groundwater Ecology* (1994[2]), *Regulated Rivers Research & Management* (1993, 1999), *Wetlands* (2008)
- **Ad-Hoc Reviewer: Textbooks** - Prentice Hall, *Algae*, Graham & Wilcox (1997 - Chapters 1-11, 1998 - Chapters 16-23). McGraw-Hill, *Evolution - Darwin Today*, Kardong (2002). McGraw-Hill, *Introduction to Biological Evolution*, Kardong (2003). Thomson - Brooks/Cole, *Introductory Botany: Plants, People, & the Environment*, Berg (2004 - Chapters 17-18, 25-27). W. H. Freeman & Co., *Environmental Science*, Friedland (2004 - Chapters 9-10, 14-16; 2006 – Concluding Chapter, 2nd ed.). John Wiley & Sons, *R-Evolution*, MacNeill (2007 - Prospectus, Chapter 1). W. H. Freeman & Co., *The Environment: Understanding and Responding to Global Changes* (2007 – Chapter 8).

- **Ad-Hoc Reviewer: Funding Agencies** - National Science Foundation (1990-91, 1994, 1995[2], 1996-99, 2000 [4], 2001[2], 2002[4], 2003 [3], 2004, 2007-08, 2010, 2012, 2016), Glen Canyon Environmental Studies II (1995), U.S. Geological Survey (1997), Joint U.S. EPA/NSF (1997 [2])
- **Short-Course Instructor** - Algal-Taxonomy/Ecology Section, *Biomonitoring of Streams & Rivers*, Kellogg Biological Station, 5/96, 5/98, 5/00, 5/02, 5/07.
- **Phycological Consultant** - Integrated Lakes Management (1994-96), Greeley & Hansen Engineering (1996), Lockheed Corp. (1984).
- **Session Chair** – 21st North American Diatom Symposium, Flathead Lake Biological Station, MT, 9/2011, Annual Meeting, N. Amer. Benthol. Soc., (Louisville, KY, 5/2012; Duluth, MN, 5/99; Calgary, Alberta, 5/93; Louisville, KY, 5/92; Santa Fe, NM, 5/91). Annual Meeting, Phycol. Soc. Amer., Honolulu, HI (8/92). VIII N. Amer. Diatom Symp., Hancock Biological Station, Murray, KY (10/85).
- **Student-Awards Judge** - Annual Meeting, N. Amer. Benthol. Soc. (1991-94, 1997, 2000-01)
- **Invited Research Seminars** – Ohio State University (4/15), University of Wisconsin – Oshkosh (11/10), Benedictine University (11/10), University of Illinois at Chicago (4/07), Center for Urban Environmental Research & Policy, Loyola University Chicago (1/07), Univ. Michigan Biol. Station (8/02), Univ. Idaho (12/01), Virginia Polytechnic & State Univ. (3/99), Univ. New Mexico (4/94, 3/96), Boise State Univ. (4/95), Univ. New England (2/95), Royal Botanical Gardens, Melbourne (2/95), Univ. Adelaide (1/95), DePaul Univ. (10/92), Kellogg Biol. Station, Michigan State Univ. (3/92). Arizona State Univ. (4/91). Loyola Univ. Chicago (3/91, 10/96, 1/07). Univ. Nevada, Las Vegas (10/89, 3/98). Cedar Point Biol. Station, Univ. Nebraska (7/85).

STUDENT ADVISING

- **Graduate Student Major Professor** - Stevan Earl, Ph.D. student, Virginia Polytechnic & State University, 1999-2004 (Co-Advisor with Dr. H.M. Valett). Jennifer Koshorek, M.Sc. student, Loyola University Chicago, 2003-07 (Co-Advisor with Dr. M. B. Berg). Allison Daley, M.S. student, Loyola University Chicago, 2007-2012. Jenna Molaro 2020 – 2023, Sam Daughbenbaugh 2021 – 2023, MESS students, Loyola University Chicago
- **Graduate Student Thesis Committees** - *Loyola Biology Master's Students*: Jeffery Panella, 1991-94; Patricia Kremma, 1992-94; Ronald Johnson, 1994-95; Patrick Donovan, 1993-97; Nia Haller, 1996-2006; Nicole Vidales, 1996-2001; Jeffery Coath, 1997-98; Kirk Wahtera, 1998-2001; Lincoln Bradford, 2000-2007; Holly Arrigoni, 2000-05; Pricila Andrade, 2001-06; John Kominoski, 2002-2003; Eric Brown, 2002-06; Jennifer Smith, 2002-05; Monika Freyman, 2005-08; Jillian Pokelsek, 2005-08; Paul Hoppe, 2005-09; Holly Wellard, 2006-09; Antoine Aubeneau, 2006-2010; Lyle Dandridge, 2006-2010; Sarah Zahn, 2007- 10; Shannon Pechauer, 2007-2011; Katherine Vallis, 2008-2012, Mark Mitchell, 2008-10; Miguel Rojas, 2010 – 2016; Samantha Hertel 2011 – 2016; Chantel Caldwell, 2010 – 2016; Michael Hassett, 2011 – 2015; Alexandra Ozaki, 2012 – 2013; Hanna Karic 2020 – 2022. *Others*: Patrice Spindler, Dept. Botany, Arizona State Univ., 1990-93; Jill Kostel, 2006, Katherine Kalschauer, 2007-2012, Doctoral Students, Dept. Civil & Environ. Engineering, Northwestern Univ.
- **Direction of Undergraduate Research** - Loyola Students: Julie Malone (6/92-12/92), Bryan Wunar (6/92-12/92), Hillary Nasso (9/93-12/93), Susan Kwan (6/94-12/94), Jennifer Lixey (8/94-12/94), Megan Horton (7/95-12/95), Robert George (9/95-12/95), Kara Vormittag - WISER (5/96-8/96), Rachel Newton (1/2000-5/00), Tracy Jones - Mulcahy Scholar (8/00- 5/01), Kurt Leifheit - NSF REU (1/01- 5/01), Sean Wherry - NSF REU (1/01- 5/02), Reena Patel - NSF REU (8/01 - 5/02), Daniel Costantini - NSF REU (9/02 - 5/03), Katherine Hartman - NSF REU (9/02 - 5/03), Kelly Loster - NSF REU (9/02 - 5/03), J. Samuel Saliba – CUERP Fellow (6/08 – 9/08), Julie Kenkel (1/08-5/08), Samantha Kufta (NSF REU (6/08 – 12/08), John Sprague (1/08 – 5/08), Ashley Kanak – NSF REU (6/09 – 9/09), Jacqueline Harvey (8/09 – 5/10), Tyler White – Provost Fellow, CUERP Fellow, Mulcahy Scholar (5/09- 5/11). Adam Senese – Mulcahy Scholar (8/11 – 5/12), Erika Vigen – Mulcahy Scholar (1/13 – 8/14). *Others*: Amy Weibel [ASU] (5/90-9/90).

REFERENCES

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