Center for Sustainability and the Global Environment

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### NICHOLAS D. PRESTON

#### Research Goals

I am interested in global health from an ecosystem perspective. My current research leverages advances in web programming, scientific computing, and information management to identify and monitor complex relationships between the environment and health, with an emphasis on disease outbreaks and natural disasters.

# Current Position

University of Wisconsin - Madison, USA

2009-Present. Postdoctoral Scientist (dotSkapes Project).

Building a collaborative web platform for finding, analyzing, sharing, and tagging global health resources, towards an understanding of the environmental determinants of infectious disease emergence. The project involves global health, ecology, geography, scientific computing, and database-driven web programming.

#### Education

University of Wisconsin - Madison, USA

2010. Ph.D., Limnology and Marine Science. Dissertation: External drivers of lakes in forested watersheds: Aeolian organic carbon inputs and ice phenology.

2010. Certificate, Global Health. Course work: epidemiology, international health systems, and health field work in Autlan, Mexico

University of Guelph, Canada

2002. B.Sc., Major: Biological Sciences (Dean's list). Minor: Mathematical Sciences (Statistics, Mathematics, and Computer Science)

University of Joseph Fourier, France

2000. International Studies: Biology of Organisms and Populations (Ontario-Rhone-Alps Bursary)

#### **Publications**

Hanson PC, Hamilton DP, Stanley EH, Preston ND, Langman OC, and Kara EL. 2011. Fate of Allochthonous Dissolved Organic Carbon in Lakes: A Quantitative Approach. *PLoS ONE* 6(7): e21884. doi:10.1371/journal.pone.0021884

- Preston ND and JA Rusak. 2010. Homage to Hutchinson: does interannual climate variability affect zooplankton density and diversity?. *Hydrobiologia* 653: 165–177.
- Biggs, R., MW Diebel, D Gilroy, AM Kamarainen, MS Kornis, ND Preston, JE Schmitz, CK Uejio, MC Van De Bogert, BC Weidel, PC West, DPM Zaks, and SR Carpenter. 2010. Preparing for the future: Teaching scenario planning at the graduate level. Frontiers in Ecology and the Environment 8: 267–273.
- Solomon, CT, JJ Cole, RR Doucett, ML Pace, ND Preston, LE Smith, and BC Weidel. 2009. The influence of environmental water on the hydrogen stable isotope ratio in aquatic consumers. *Oecologia* 161: 313–324.
- Preston, ND, SR Carpenter, JJ Cole, and ML Pace. 2008. Airborne carbon deposition on a remote forested lake. *Aquatic Sciences* 70: 213–224.
- Pace, ML, SR Carpenter, JJ Cole, JJ Coloso, JF Kitchell, JR Hodgson, JJ Middelburg, ND Preston, CT Solomon, and BC Weidel. 2007. Does terrestrial organic carbon subsidize the planktonic food web in a clear-water lake. *Limnology and Oceanography* 52: 2177–2189
- Cassinath N, Ernesto Garcia R, Vargas MH, Bethune D, McCullough J, Wilson M, Lorne J, and ND Preston. 2004. Working Together: Field guide to community participation in water projects (Non reviewed).

## Conference Presentations

- 2011 "Healthscapes: a new web platform for global environmental health research." American Society for Photogrammetry and Remote Sensing. Milwaukee, Wisconsin (USA)
- 2011 "Healthscapes: a web platform for integrating and analyzing health and environmental data across scales." One Health Congress, Melbourne (Australia)
- 2010 "HealthScapes: A new web framework for studying the environmental determinants of global public health." International Association for Ecology and Health (EcoHealth), London, London (UK).
- 2009 "Eco-health service learning in Autlan, Mexico". Global Health Symposium (GHS), Madison, WI (USA).
- 2009 "Healthscapes: a new tool for exploring the environmental determinants of infectious disease". National Environmental Public Health Conference (NEPHC), Atlanta, GA (USA).
- 2008 "Terrestrial support of lakes across the landscape". Ecological Society of America (ESA), Milwaukee, WI (USA).
- 2007 "Driving allochthony: the rain of carbon and airborne deposition on lakes". Advancing the Science of Limnology and Oceanography (ASLO), Santa Fe, NM (USA).

2006 "Climate-Driven Changes in Spring Conditions: the influence of ice cover on spring zooplankton abundance". Advancing the Science of Limnology and Oceanography (ASLO), Victoria, BC (Canada).

Grants and

2010 Amazon Web Services Research Grant

Awards

2009 Vilas Travel Grant 2007 ASLO Student Grant 2006 Anna Grant Birge Award

2006 John Jefferson Davis Travel Award

1999 Ontario-Rhone-Alps bursary

Service to the Profession

Reviewer, Advancing the Science of Limnology and Oceanography (ASLO), Ecological Applications, Hydrobiologia

**Guest Lectures** 

2010 Population Health 740: Health Impact Assessment of Global Environmental Change

2011 Population Health 803: Monitoring Population Health 2011 EcoHealthNet: Disease Mapping and Modeling Workshop

2022 NCAR/CDC: Workshop on Climate and Health

Teaching

Zoology Teaching Assistant: Conservation of Aquatic Resources

Scientific Computing Bootcamp: Biostatistics (Python and R), and web programming

Software Carpentry Bootcamp: Database driven web-design, technical project management, and PostgreSQL

NOAA Earth Systems Research Laboratories: provided training (40 hours) in Web2py, PostreSQL, spatial analysis with R, web design, Javascript, technical project management, and Python

Societies

Advancing the Science of Limnology and Oceanography (ASLO), Ecological Society of America (ESA), Association for Computing Machinery(ACM), and International Association for Ecology and Health (Eco-Health)

Skills

International Scientific Field and Lab Research: 13 years experience

Database-driven web design: 10 years experience

Outdoor Emergency Care: 4 years Certified first responder

Disaster response: 4 years Red Cross Disaster Action Team (fire, flood, logistics, client services, translation, technology, and shelter operations)