

Shawn O'Neil

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EDUCATION

University of Notre Dame, Notre Dame, IN

Ph.D. Candidate, Computer Science and Engineering

Research: Bioinformatics, Ecoinformatics

Advisors: Dr. Scott J. Emrich (Comp. Sci. and Eng.), Dr. Jessica J. Hellmann (Biological Sciences)

M.S., Computer Science and Engineering

Thesis: "Expert Advice and the Newsvendor Problem"

May, 2009

Advisor: Dr. Amitabh Chaudhary

Northern Michigan University, Marquette, MI

B.S., Computer Science

Summa Cum Laude, GPA: 3.9

May, 2005

Minor: Mathematics

RESEARCH INTERESTS

- Bioinformatics for non-model species.
- Transcriptome sequencing and comparative analysis of *de novo* transcriptome assemblies.
- Algorithms for population-level genomic sequence data. Graph algorithms, online algorithms.

PUBLICATIONS

- Shawn T. O'Neil, Jason D. K. Dzurisin, Scott J. Emrich, Neil F. Lobo, Jessica K. Higgins, Jillian M. Deines, Caroline M. Williams, Rory D. Carmichael, Erliang Zeng, Grace C. Wu, Jessica J. Hellmann. "Related insects show extensive but differing localization of transcribed genes in response to climate." *Proceedings of the National Academy of Sciences*, in review.
- Shawn T. O'Neil, Xuying Zhao, Daewon Sun, Amitabh Chaudhary, Jerry C. Wei. "A machine-learning meta-algorithm for newsvendor problems with limited demand information and demand shocks." *Production and Operations Management*, in review.
- Shawn T. O'Neil, Scott J. Emrich. "Haplotype and minimum-chimerism consensus assembly of short sequence data." *BMC Genomics* (ICCABS 2011 Special Issue), in press.
- Shawn T. O'Neil, Amitabh Chaudhary, Danny Z. Chen, Haitao Wang. "The topology aware file distribution problem." *Journal of Combinatorial Optimization*: 11(3), pp 1–15, 2011. (Also presented at The 17th Annual International Computing and Combinatorics Conference (COCOON); LNCS 6842: pp 366–378, 2011.)

PUBLICATIONS (CONTINUED)

- Shawn T. O'Neil, Scott J. Emrich. "Robust haplotype reconstruction of eukaryotic read data with Hapler." 1st International Conference on Computational Advances in Bio and medical Sciences (ICCABS), pp 141–146, 2011.
- Shawn T. O'Neil, Jason D. K. Dzurisin, Rory D. Carmichael, Neil F. Lobo, Scott J. Emrich, Jessica J. Hellmann. "Population-level transcriptome sequencing of non-model organisms *Erynnis propertius* and *Papilio zelicaon*." *BMC Genomics*: 11(1), pp 310+, 2010.
- Shawn O'Neil, Amitabh Chaudhary. "Comparing online learning algorithms to stochastic approaches for the multi-period newsvendor problem." Proceedings of the 9th Workshop on Algorithm Engineering and Experiments (ALENEX), pp 49–63, 2008.

POSTERS AND PRESENTATIONS

- Shawn T. O'Neil, Theresa Brenberg, Allie Colaco, Jason McLachlan, Scott J. Emrich. *Reconstructing Ancient Barcode DNA With Hapler*. Notre Dame CSE Student Research Symposium. November 7, 2011. Chosen best poster by student vote.
- Theresa Brenberg, Allie Colaco, Shawn O'Neil, Jason McLachlan. *New Genetic Tools for Estimating Long Term Changes in Forest Composition*. Ecological Society of America. August 7, 2011.
- Jessica J. Hellmann, Jason D. K. Dzurisin, Shannon L. Pelini, Caroline M. Williams, Shawn O'Neil, Scott J. Emrich, Brent J. Sinclair. *Integrating physiology and genomics in the study of geographic range changes and geographic responses to climate change*. American Physiological Society. August 5, 2010.
- Shawn T. O'Neil, Amitabh Chaudhary, Scott J. Emrich. *Haplotyping population samples of short fragment data*. 18th Annual International Conference on Intelligent Systems for Molecular Biology (ISMB). Poster Presentation. July 12, 2010.
- Shawn T. O'Neil, Jason D. K. Dzurisin, Rory D. Carmichael, Neil F. Lobo, Scott J. Emrich, Jessica J. Hellmann. *Sequencing the transcriptomes of two butterflies at the population level*. Gordon Research Conferences, Evolutionary & Ecological Functional Genomics. Poster Presentation. July 12--17, 2009.

AWARDS AND FELLOWSHIPS

- University of Notre Dame: Eck Institute for Global Health Bioinformatics Fellowship
- University of Notre Dame: Kaneb Center Outstanding Graduate Student Teacher Award
- University of Notre Dame: Arthur J. Schmitt Fellowship
- Northern Michigan University: Merit Excellence Award
- State of Michigan: Merit Award and Competitive Scholarship

ACADEMIC SERVICE AND PROFESSIONAL EXPERIENCE

Society of Schmitt Fellows

Founding Member

The Society of Schmitt Fellows is the student organization representing graduate students receiving the Arthur J. Schmitt fellowships at the University of Notre Dame.

**August, 2009 to
Present**

Notre Dame/Michiana Science Café

Co-Organizer

The Science Café is a monthly venue for scientists and researchers to present interesting topics to the local community.

**May, 2009 to
Present**

Teaching

Primary Instructor – Basic Computing for Bioinformatics

Developed a three-credit course in the Computer Science department offered to Biology graduate students and faculty, focused on developing computer science skills useful for practicing biologists.

**Fall, 2010
Fall, 2011**

Teaching Assistant – Discrete Mathematics and Linear Programming

Ran weekly study sessions, office hours, and graded homework for undergraduate classes. Won a Kaneb Center "Outstanding Graduate Student Teacher Award."

**Fall, 2007
Fall, 2008
Fall, 2009**

Amazon.com

Internship, Software Development Engineer

Supply chain optimization/inventory control team. Developed tools for visibility into Amazon.com's complex supply chain.

**May, 2008 to
August, 2008**