

# CURRICULUM VITAE

## SOPHIA I. PASSY

### POSITIONS

2007-present	Associate Professor in Biology, Dept. Biology, UT Arlington
2001-2007	Assistant Professor in Biology, Dept. Biology, UT Arlington
1999-2001	Post Doctoral Research Associate, Dept. Biology, RPI
1997-1999	Post Doctoral Research Associate, Dept. Cell Biology and Neuroanatomy, University of Minnesota Medical School
1988-1992	Assistant Professor of Plant Systematics, Dept. Botany, Faculty of Biology, Sofia University, Bulgaria

### EDUCATION

1992-1997	Ph.D., Bowling Green State University
1984-1986	M.S., Sofia University, Bulgaria

### AWARDS

2005-2008	Research Excellence Award, University of Texas at Arlington
2005 & 2006	Professional Development Award, University of Texas at Arlington
2010	Faculty Development Leave, University of Texas at Arlington

### TEACHING

#### Graduate adviser:

- Katrina Cohen (Ph.D. student); 2008-2012
- Chad Larson, Ph.D. 2009, dissertation: "*Diversity and community organization in the periphyton of recirculating stream channels are defined by current velocity and nutrient supply*", **US EPA GRO FELLOW 2006-2009**
- Janie Moore, Ph.D. 2010, dissertation: "*Effects of the exotic invader, Tamarix spp. on aspects of the aquatic ecosystem at McComb Creek, Presidio County, Texas*"

#### Postdoctoral mentor:

- Ionel Ciugulea, PhD; 2002-2005
- Chad Larson, Ph.D.; 2010-2012

### **Courses taught**

- Cell and Molecular Biology (1441)
- Phycology (3310/5310)
- Chaos & Fractals (5310)
- Advanced Biometry (5361)
- Landscape Ecology (3310/5310)
- Community Ecology (4338/5315)

## **SCHOLARLY ACTIVITIES**

### **GRANTS**

2010-2012: Algal biodiversity in streams: Exploring the mechanisms of coexistence under resource limitation, Norman Hackerman Advanced Research Program, \$194,780 (sole PI)

2010-2012: Assessment of Acidic Deposition Effects on the Chemistry and Benthos of Streams of the East-Central Adirondack Region—Extension of the Western Adirondack Stream Survey (WASS). New York State Energy Research and Development Authority, \$187,124 (Co-PI with Gregory Lawrence, PI)

2006-2008: Determining the potential for algal bloom in Lake Maurepas: effects of changing nutrient load from freshwater diversion and changes in human population, Southeastern Louisiana University Western Lake Pontchartrain Basin Research Program (funded by the EPA), \$87,512 (Co-PI with Philip Voegel, PI)

2003-2006: Assessment of stream chemistry and benthic communities in the Oswegatchie–Black River Basins of the Adirondack Region. New York State Energy Research and Development Authority, \$486,000 (Co-PI with Gregory Lawrence, PI)

2002-2006: Acquisition of a Confocal Laser Scanning Microscope. National Science Foundation, DBI-0215852, \$287,636 (PI)

2002-2004: Environmental variability underlies spatio-temporal biofilm dynamics. Research Enhancement Program, UTA, \$9,876 (sole PI)

2002-2006: Algal communities as indicators of streambed instability and restoration. New York State Department of Environmental Conservation, \$255,747 (sole PI)

### **PUBLICATIONS (peer reviewed)**

**Passy, S. I.**, 2010. A distinct latitudinal gradient of diatom diversity is linked to resource supply. *Ecology* 91: 36-41. (Journal cover)

- Passy, S. I.** 2009. The relationship between local and regional diatom richness is mediated by the local and regional environment. *Global Ecology and Biogeography* 18: 383-391.
- Passy, S. I.** 2008. Continental diatom biodiversity in stream benthos declines as more nutrients become limiting. *Proceedings of the National Academy of Sciences (USA)* 105: 9663-9667.
- Passy, S. I.** 2008. Species size and distribution jointly and differentially determine diatom densities in US streams. *Ecology* 89: 475-484.
- Burns, D. A., Riva-Murray, K., Bode, R. W. & **Passy, S.** 2008. Biological and Chemical Responses to Reduced Levels of Acid Deposition in the Neversink River Basin, Catskill Mountains, New York, 1987-2003. *Ecological Indicators* 8: 191-203.
- Passy, S. I.** & Blanchet, F. G. 2007. Algal communities in human-impacted stream ecosystems suffer beta-diversity decline. *Diversity and Distributions* 13: 670-679.
- Passy, S. I.** 2007. Differential cell size optimization strategies produce distinct diatom richness–body size relationships in stream benthos and plankton. *Journal of Ecology* 95: 745-754.
- Passy, S. I.** 2007. Community analysis in stream biomonitoring: what we measure and what we don't. *Environmental Monitoring and Assessment* 127: 409-417.
- Passy, S. I.** 2007. Diatom ecological guilds display distinct and predictable behavior along nutrient and disturbance gradients in running waters. *Aquatic Botany* 86: 171-178.
- Passy, S. I.,** Ciugulea, I. & Lawrence, G. B. 2006. Diatom diversity in chronically versus episodically acidified Adirondack streams. *International Review of Hydrobiology* 91: 594–608.
- Passy, S. I.** & Legendre, P. 2006. Are algal communities driven toward maximum biomass? *Proceedings of the Royal Society of London Ser. B* 273: 2667–2674. (Journal cover)
- Passy, S. I.** & Legendre, P. 2006. Power law relationships among hierarchical taxonomic categories in algae reveal a new paradox of the plankton. *Global Ecology and Biogeography* 15: 528-535.
- Passy, S. I.** 2006. Diatom community dynamics in streams of chronic and episodic acidification: the roles of environment and time. *Journal of Phycology* 42: 312-323.
- Larson, C. & **Passy, S. I.** 2005. Spectral fingerprinting of algal communities: a novel approach to biofilm analysis and biomonitoring. *Journal of Phycology* 41: 439-446. (Journal cover)
- Passy, S. I.** & Bode, R. W. 2004. Diatom Model Affinity (DMA), a new index for water quality assessment. *Hydrobiologia* 524: 241-251.
- Passy, S. I.,** Bode, R. W., Carlson, D. M. & Novak, M. A. 2004. Comparative environmental

- assessment in the studies of benthic diatom, macroinvertebrate, and fish communities. *International Review of Hydrobiology* 89: 121-138.
- Passy, S. I.** 2002. Environmental randomness underlies morphological complexity of colonial diatoms. *Functional Ecology* 16: 690-695.
- Passy, S. I.** 2001. Spatial paradigms of lotic diatom distribution: a landscape ecology perspective. *Journal of Phycology* 37: 370-378.
- Passy, S. I., Yu, X., Li, Z., Radding, C. M., Masson J., West S. C. & Egelman, E. H.** 1999. Human Dmc1 protein binds DNA as an octameric ring. *Proceedings of the National Academy of Sciences (USA)* 96: 10684-10688. (Journal cover)
- Passy, S. I., Pan, Y. & Lowe, R. L.** 1999. Ecology of the major periphytic diatom communities from the Mesta River system, Bulgaria. *International Review Hydrobiology* 84 (2): 129-174.
- Passy, S. I., Yu, X., Li, Z., Radding, C. M. & Egelman, E. H.** 1999. Rings and filaments of  $\beta$  protein from bacteriophage  $\lambda$  suggest a new superfamily of recombination proteins. *Proceedings of the National Academy of Sciences (USA)* 96: 4279-4284.
- Passy, S. I., Kociolek, J. P. & Lowe, R. L.** 1997. Five new *Gomphonema* species (Bacillariophyta) from rivers in South Africa and Swaziland. *Journal of Phycology* 33: 455-474.
- Passy-Tolar, S. I. & Lowe, R. L.** 1995. *Gomphoneis mesta* (Bacillariophyta). II. Morphology of the initial frustules and perizonium ultrastructure with some inferences about diatom evolution. *Journal of Phycology* 31: 447-456.
- Passy-Tolar, S. I. & Lowe, R. L.** 1994. Taxonomy and ultrastructure of *Gomphoneis mesta* sp. nov. (Bacillariophyta), a new epilithic diatom from the Mesta River, Bulgaria. *Journal of Phycology* 30: 885-891.

## PRESENTATIONS

- Summer Meeting of the American Society of Limnology and Oceanography 2008, Newfoundland, Canada (invited talk and a paper)
- 55<sup>th</sup> Annual Meeting of the North American Benthological Society 2007, South Carolina, USA (3 papers)
- 54<sup>th</sup> Annual Meeting of the North American Benthological Society 2006, Alaska, USA (paper)
- 58<sup>th</sup> Phycological Society of America Annual Meeting 2004, Virginia, USA (2 papers)
- 87<sup>th</sup> Annual Meeting of the Ecological Society of America 2002, Arizona USA (paper)
- 55<sup>th</sup> Phycological Society of America Annual Meeting 2001, Colorado, USA (paper and poster)

16<sup>th</sup> International Diatom Symposium 2000, Athens, Greece (paper)  
45<sup>th</sup> Annual Meeting of the North American Benthological Society 1997, Texas, USA (paper)  
13<sup>th</sup> North American Diatom Symposium 1995, Iowa, USA (poster)  
12<sup>th</sup> North American Diatom Symposium 1993, Manitoba, Canada (poster)  
The Black Sea Symposium 1991, Istanbul, Turkey (paper)

### **INVITED TALKS**

February 24, 2010: “The origins of biodiversity”, Baylor University, Waco, TX

March 4, 2010: “The origins of species richness”, University of Texas at Arlington, Arlington, TX

### **REVIEWER**

#### **Journals**

- *Annales de Limnologie*
- *Aquatic Microbial Ecology*
- *Archiv für Hydrobiologie*
- *Diatom Research*
- *Ecography*
- *Ecological Applications*
- *Ecological Indicators*
- *Ecological Monographs*
- *Ecology*
- *Ecology Letters*
- *Environmental Monitoring and Assessment*
- *Freshwater Biology*
- *Global Ecology and Biogeography*
- *Hydrobiologia*
- *Journal of Applied Ecology*
- *Journal of Applied Phycology*
- *Journal of Ecology*
- *Journal of the Great Lakes Research*
- *Journal of the North American Benthological Society*
- *Journal of Phycology*
- *Journal of Plankton Research*
- *Oikos*
- *Proceedings of the Royal Society Ser B*

- *Protist*

### **Institutions**

- *National Science Foundation*
- *Israel Science Foundation*