

# Curriculum Vitae

## Steven V. Viscido

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### EDUCATION

- 2000            Ph.D. – Biology (Ecology, Evolution, and Organismal Biology)  
University of South Carolina, Columbia, SC (D. S. Wetthey, advisor)
- 1994            M. S. – Biology  
Rutgers University, Camden, NJ (D. E. Stearns, advisor)
- 1991            B. A. – Biology  
Rutgers University, Newark, NJ

### PROFESSIONAL EXPERIENCE

- 2013-present    Associate Professor of Organismal Biology  
Department of Life Sciences, Winston-Salem State University, Winston-Salem, NC
- 2007-2013      Assistant Professor of Organismal Biology  
Department of Life Sciences, Winston-Salem State University, Winston-Salem, NC
- 2004-2007      NRC Post-doctoral Research Associate (Advisor: Eli Holmes)  
Northwest Fisheries Science Center, National Oceanic and Atmospheric  
Administration, Seattle, WA
- 2004            Adjunct Professor of Environmental Science  
Everett Community College, Everett, WA
- 2000-2004      Post-doctoral Research Associate (Advisors: J. Parrish and D. Grünbaum)  
Department of Biology and School of Aquatic and Fishery Sciences,  
University of Washington, Seattle, WA
- 1994-2000      Teaching Assistant/Research Assistant  
Department of Biological Sciences, University of South Carolina, Columbia, SC
- 1997            Summer Graduate Research Fellow  
Belle W. Baruch Institute for Marine Biology and Coastal Research, University of  
South Carolina, Columbia, SC
- 1992-1994      Teaching Assistant/Research Assistant  
Department of Biology, Rutgers University, Camden, NJ

## **GRANTS IN SUPPORT OF RESEARCH**

- 2012-2017 NSF Grant: CAREER: Creating a Unified Framework for the Quantitative Study of Animal Aggregations. (\$530,000)
- 2010-2011 WSSU Research Initiation Program Grant. "Quantitative analysis of animal group movement under field conditions." (\$9,926)
- 1997-2000 NSF Doctoral Dissertation Improvement Grant. "Why animals form groups: predation defense vs. foraging success." (\$9,100)
- 1996 Lerner-Grey Fund for Marine Research. "Flock formation in fiddler crabs." (\$900)

## **TEACHING/EDUCATION EXPERIENCE**

### *Courses Taught (Lecture):*

- ENVS 101. Humans and their Environment (Everett Community College, 2004)
- BIO 1301. Biological Concepts (WSSU, 2007-2009)
- BIO 3436. Developmental Biology (WSSU, 2007-present)
- BIO 2310. Zoology (WSSU, 2008-2011)
- BIO 1320. Environmental Biology (WSSU, 2010-present)
- BIO 2303. Scientific Writing (WSSU, 2011-present)
- BIO 3371. Ecology and Evolution (WSSU, 2014-present)

### *Courses taught (Lab):*

- BIO 101L-102L. General Biology Laboratory (Rutgers University, 1992-1994)
- BIO 353L. General Ecology Laboratory (Rutgers University 1992-1993)
- BIOL 243L. Anatomy and Physiology Laboratory (University of South Carolina, 1994-1996)
- BIOL 301L. Ecology and Evolution Laboratory (University of South Carolina, 1996-2000)
- BIOL 570L. Principles of Ecology Laboratory (University of South Carolina, 1997)
- BIO 1401. Principles of Biology Laboratory (WSSU, 2007)
- BIO 2110. Zoology Laboratory (WSSU, 2008-2010)
- BIO 3136. Developmental Biology Laboratory (WSSU, 2008-present)
- BIO 1101. Biological Concepts Lab (2014-present)

### *Workshops Given*

- Scientific Writing Workshop (co-taught with Dr. Jill Harp, WSSU, Fall 2008, Spring 2010)

### *Invited guest lectures*

"Quantitative analysis of fiddler-crab flock movement: evidence of selfish herd behavior." Applied Mathematics Colloquium, University of Washington. 28 April 2001.

"Fiddler crabs and the selfish herd hypothesis." Applied mathematics, Computer science, Mathematics, and Statistics (ACMS) seminar, University of Washington. 7 November 2003.

"Emergent properties of fish schools: a comparison of observation and theory." Mathematical biology seminar, University of British Columbia. 28 April 2004

## **PROFESSIONAL SOCIETY AFFILIATIONS**

Animal Behavior Society  
Society for Mathematical Biology  
National Marine Educators Association (Mid-Atlantic chapter)

## **ACADEMIC AWARDS**

NRC Research Associateship, Northwest Fisheries Science Center (2004-2007)  
Summer Graduate Fellowship, Belle W. Baruch Institute, University of South Carolina (1997)  
NSF Doctoral Dissertation Improvement Grant (1997)  
Lerner-Grey Fund for Marine Research (1996)  
Graduated with College Honors and Highest Honors, Rutgers University (1991)  
Faculty of Arts and Sciences Dean's Award, Rutgers University (1991)  
John Keosian Memorial Award in Biological Sciences, Rutgers University (1991)  
*Phi Beta Kappa* (elected 1990)  
Dean's List, Rutgers University (1987 – 1991)  
Rutgers Scholar, Rutgers University (1987 – 1991)

## **SERVICE**

Student Success Committee, Department of Biological Sciences, WSSU (2014-present)  
Center for Excellence in Teaching and Learning, Departmental Liaison, WSSU (2013-present)  
Academic Calendar Committee, Co-Chair, WSSU (2014-present)  
Academic Calendar Committee, College Representative, WSSU (2011-2014)  
Poster Session Judge, University Scholarship Day, WSSU (2013)  
Poster Session Judge, grades 6-8, Hanes Magnet School (2012)  
Poster Session Judge, grades 9-12, Winston-Salem Preparatory Academy (2012)  
Faculty Advisor, National Society of College Scholars, WSSU Chapter (2010-2012)  
General Education Task Force (2009-2011)  
Co-coordinator, General Biology/Biological Concepts (2009-present)  
Life Sciences Departmental Awards Committee, WSSU (2009-2011)  
College Awards Committee, WSSU (2008-2010)  
Undergraduate Forum Committee, WSSU (2008-present)  
Faculty Senate, Departmental Representative, WSSU (2008-2010)  
Quality Education Plan Writing Committee, WSSU (2008-2009)  
Quality Education Plan Reader, WSSU (2009-2012)  
Foundations of Excellence Committee, Roles/Purposes team leader, WSSU (2008-2009)  
Graduate Seminar Planning Committee, WSSU (2007)  
Laboratory Report Committee, WSSU (2007)  
*Phi Beta Kappa* Board of Reviewers, UW Chapter (2001 – 2002)

## **Grant reviewer for:**

U. S. National Institutes of Water Research (2002)  
U. K. National Environment Research Council (2003, 2004)  
National Science Foundation Antarctic Organisms and Ecosystems Program (2008)  
Netherlands Organisation for Scientific Research (2010)  
National Science Foundation Animal Behavior (IOS) Program (2011, 2012)  
National Science Foundation Graduate Research Fellowship Program (2013)

**Peer Reviewer for the following journals (22 manuscripts):**

*IEEE Journal of Oceanic Engineering*, *Journal of Theoretical Biology* (3 papers), *Journal of Experimental Marine Biology and Ecology*, *Journal of Fish Biology*, *Ecological Modelling* (5 papers), *Behavioral Ecology* (3 papers), *Ecology*, *Ecography*, *Animal Behaviour* (2 papers), *Zoology*, *PLoS ONE* (2 papers), *Marine Ecology Progress Series*

**PUBLICATIONS**

**Viscido, S.V.** and E.E. Holmes. 2010. LAMBDA: A software tool for statistical modeling of communities and ecosystems. *Environmental Modelling and Software*, **25**: 1905-1908.

Holmes, E.E., J. L. Sabo, **S. V. Viscido**, and W. F. Fagan. 2007. A statistical approach to quasi-extinction forecasting. *Ecology Letters*, **10**: 1182-1198.

**Viscido, S. V.**, D. Grünbaum, and J. K. Parrish. 2007. What factors are important for the formation and maintenance of fish schools? *Ecological Modelling*, **206**: 153-165.

Reluga, T., **S. V. Viscido**. 2005. Simulated evolution of selfish herd behavior. *Journal of Theoretical Biology*, **234**:213-235.

**Viscido, S. V.**, J. K. Parrish, and D. Grünbaum. 2005. The effect of population size and number of influential neighbors on the emergent properties of fish schools. *Ecological Modelling*, **183**: 347-363

Grünbaum, D., **S. V. Viscido** and J. K. Parrish. 2005. Extracting interactive control algorithms from group dynamics of schooling fish. *Cooperative Control Lecture Notes in Control and Information*. V. Kumar, N. E. Leonard and A. S. Morse, eds. Springer-Verlag, **309**:103-117.

Parrish, J. K., and **S. V. Viscido**. 2005. Traffic rules of fish Schools: A review of agent-based approaches. In Hemelrijk, C., ed. *Self-organisation and evolution of biological and social systems*. Cambridge University Press, Cambridge, UK. pp. 50-80.

**Viscido, S. V.**, J. K. Parrish, and D. Grünbaum. 2004. Individual behavior and emergent properties of fish schools: a comparison of observation and theory. *Marine Ecology Progress Series*, **273**: 239-249.

**Viscido, S.V.** 2003. The case for the selfish herd hypothesis. *Comments on Theoretical Biology*, **8**: 665-684.

Parrish, J. K., **S. V. Viscido**, and D. Grünbaum. 2002. Self-organized fish schools: an examination of emergent properties. *Biological Bulletin*, **202**: 296-305.

**Viscido, S. V.**, M. Miller, and D. S. Wetthey. 2002. The dilemma of the selfish herd: the search for a realistic movement rule. *Journal of Theoretical Biology*, **217**: 183-194.

**Viscido, S. V.** and D. S. Wethey. 2002. Quantitative analysis of fiddler crab flock movement: evidence for "selfish herd" behaviour. *Animal Behaviour*, **63**: 735-741.

**Viscido, S. V.**, M. Miller, and D. S. Wethey. 2001. The response of a selfish herd to an attack from outside the group perimeter. *Journal of Theoretical Biology*, **208**: 315-328.

**Viscido, S. V.**, D. E. Stearns, and K. W. Able. 1997. Seasonal and spatial patterns of an epibenthic decapod crustacean assemblage in northwest Atlantic continental shelf waters. *Estuarine, Coastal and Shelf Science*, **45**: 377-392.

**PRESENTED PAPERS** (\* denotes student coauthor)

Kennedy, A., Shrestha, S., and S. V. Viscido. 2014. Using object-oriented programming to develop simulation models of animal aggregation. 51st Annual Conference of the Animal Behavior Society, Princeton NJ.

Shrestha, S. and Viscido, S. V. 2014. Quantitative analysis of fish schooling behavior: an object-oriented approach. 51st Annual Conference of the Animal Behavior Society, Princeton NJ.

Viscido, S. V. and Shrestha, S. 2014. How do we know when an individual is really a member of a group? 51st Annual Conference of the Animal Behavior Society, Princeton NJ.

Smith, B.\*, A. Kennedy\*, K. Hamlet\* and **S. V. Viscido**. 2013. Quantitative analysis of individual trajectories in moving flocks of fiddler crabs. 50th Annual Conference of the Animal Behavior Society. Boulder, CO.

**Viscido, S. V.** 2013. Quantitative analysis of individual, group, and population-level aggregation metrics: a field study. 50th Annual Conference of the Animal Behavior Society. Boulder, CO.

Savage, H. B.\* and **S. V. Viscido**. 2011. Studying Social Behavior in Fiddler Crabs using Computational Methods. University Research Symposium, Winston-Salem State University.

Savage, H. B.\* and **S. V. Viscido**. 2010. Studying Social Behavior in Fiddler Crabs using Computational Methods. Summer Undergraduate Research Experience Symposium, Winston-Salem State University.

Lee, A.N.\*, L. A. Anthony\*, and **S. V. Viscido**. 2009. From individuals to aggregations: How collective behaviors of social invertebrates affect movements of group members. Summer Undergraduate Research Experience Symposium, Winston-Salem State University.

Gaskins, C.\* and **S. V. Viscido**. 2009. Population viability analysis of the western swamp tortoise. College of Arts and Sciences Undergraduate Forum, Winston-Salem State University.

Sparks, S. S.\* and **S. V. Viscido**. 2009. Should Steller sea lions be listed as endangered? College of Arts and Sciences Undergraduate Forum, Winston-Salem State University.

Dean, C.\* and **S. V. Viscido**. 2008. Observational study of Hamadryas Baboons. Summer Undergraduate Research Experience Symposium, Winston-Salem State University.

Holmes, E. E., S. Sabo, **S. V. Viscido**, W. Fagan. 2006. Parsimonious stochastic models for first-passage and extinction dynamics. 91<sup>st</sup> Annual meeting of the Ecological Society of America.

**Viscido, S. V.** and E. E. Holmes. 2006. Multivariate techniques for studying community interaction strengths: using incomplete data to infer process. 91<sup>st</sup> Annual meeting of the Ecological Society of America.

**Viscido, S. V.** and E. E. Holmes. 2005. Estimating population interactions and community stability from long-term datasets. 90<sup>th</sup> Annual meeting of the Ecological Society of America.

Grünbaum, D., **S. V. Viscido** and J. K. Parrish. 2003. Extracting interactive control algorithms from group dynamics of schooling fish. Block Island Workshop on Cooperative Control.

**Viscido, S. V.**, J. K. Parrish, D. Grünbaum. 2003. Individual behavior and emergent properties of fish schools: a comparison of observation and theory. Workshop on Biological and Artificial Swarms, UCLA.

**Viscido, S. V.**, J.K. Parrish, D. Grünbaum. 2003. Emergent properties of fish schools: comparison of experimental and theoretical results. 2003 Aquatic Sciences Meeting, Special Session on Emergent Properties in Complex Systems.

McFarland, I. W.\*, **S. V. Viscido**, D. Grünbaum, and J. K. Parrish. 2002. Computational techniques for analyzing the spatial distribution of animals. 9<sup>th</sup> Congress of the International Society for Behavioral Ecology.

Parrish, J. K., D. Grünbaum, and **S. V. Viscido**. 2002. The traffic rules of fish schools: from individuals to aggregations. Conference on Modeling Issues in Self-organizing and Evolving Systems.

**Viscido, S. V.**, D. Grünbaum, and J. K. Parrish. 2002. Factors influencing the emergent properties of fish schools. Society for Mathematical Biology's Conference on Mathematics and Biology.

**Viscido, S. V.**, D. Grünbaum, and J. K. Parrish. 2002. The effect of social rules and population size on the emergent properties of fish schools. 9<sup>th</sup> Congress of the International Society for Behavioral Ecology.

**Viscido, S.V.**, M. Miller, and D. S. Wethey. 2002. A model for Hamilton's selfish herd hypothesis, with application to fiddler crab behavior. 9<sup>th</sup> Congress of the International Society for Behavioral Ecology.

**Viscido, S.V.**, M. Miller, and D. S. Wethey. 2002. Geometric analysis of flocking behavior Society for Mathematical Biology's Conference on Mathematics and Biology.

Parrish, J. K., D. Grünbaum, and **S. V. Viscido**. 2001. Traffic rules for fish schools: from individuals to aggregations. 2001 Self-organization Conference, Woods Hole Oceanographic Institution.

Parrish, J. K., D. Grünbaum, and **S. V. Viscido**. 2001. Traffic rules for fish schools: from individuals to aggregations. *In*: Symposium on the many facets of gregariousness. International Ethological Conference, Tuebingen, Germany.

**Viscido, S. V.** 2001. Traffic rules for fish schools. 2001 Department of Zoology Post-doctoral Symposium, University of Washington.

**Viscido, S. V.** and D. S. Wetthey. 2001. Evidence for selfish herd behavior in fiddler crabs. Department of Applied Mathematics colloquium, University of Washington.

**Viscido, S. V.** and D. S. Wetthey. 2000. Evidence for selfish herd behavior in fiddler crabs. 2000 Benthic Ecology Meeting.

**Viscido, S. V.** and D. S. Wetthey. 1999. Flock formation in fiddler crabs: a defense against predation or a mechanism for finding food? 1999 Benthic Ecology Meeting.

**Viscido, S. V.** and D. S. Wetthey. 1998. Flock feeding in fiddler crabs: are flock members really safer? 7<sup>th</sup> Congress of the International Society for Behavioral Ecology.

**Viscido, S. V.**, D. W. Schar\*, K. A. Browne, P. B. O'Neil, and R. K. Zimmer-Faust. 1996. The role of prey odor as a chemical stimulus invoking feeding behavior in crustacean predators. 1996 Benthic Ecology Meeting.

Stearns, D. E. and **S. V. Viscido**. 1995. A useful device for discrete, quantitative collection of benthic and epibenthic organisms in specific underwater habitats. *Bulletin of the NJ Academy of Science*. **40**: 16

**Viscido, S. V.**, D. E. Stearns, and K. W. Able. 1995. Spatial and seasonal changes in marine epibenthic decapod crustaceans in inner continental shelf waters. 1995 Benthic Ecology Meeting.

**Viscido, S.V.**, D. E. Stearns, and K. W. Able. 1995. The use of a sandy ridge site off the coast of New Jersey as a benthic recruitment area for selected decapod species. *Bulletin of the NJ Academy of Science*. **40**:10.

**Viscido, S.V.**, D. E. Stearns, and K. W. Able. 1994. Spatial and temporal variation in mobile epibenthic decapod crustaceans at a sandy ridge site off the coast of New Jersey. *Bulletin of the NJ Academy of Science*. **39**:33.

## **PROFESSIONAL REFERENCES**

David S. Wethey (Ph.D. Advisor)  
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University of South Carolina  
Columbia, SC 29208  
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University of Washington  
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