

Curriculum Vitae

Steven K. Rice

Department of Biological Sciences

Union College

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EDUCATION:

Post-Doctoral Fellowship 1995, University of North Carolina-Chapel Hill

Project title: The Roanoke River BioReserve: a preliminary assessment of flow modifications on hydrology, geomorphological processes, and vegetation. Robert K. Peet, Principal Investigator.

Ph.D. 1994, Duke University, Department of Botany

Dissertation title: Form, function and phylogeny in aquatic *Sphagnum*. Under the direction of Brent Mishler and Norman Christensen.

M.S. 1991, Duke University, Department of Botany

Thesis title: Soil nutrients and vegetation establishment in relation to fire intensity in a post-fire community. Under the direction of Norman Christensen.

B.S. 1983, Yale University; major in biology

UNIVERSITY TEACHING EXPERIENCE:

Associate Professor; 2004-present

Department of Biological Sciences, Union College, Schenectady, NY

Assistant Professor; 1998-2004

Department of Biological Sciences, Union College, Schenectady, NY

Visiting Assistant Professor; 1995-98

Department of Biology, Wake Forest University, Winston-Salem, NC

Temporary Lecturer; spring 1995

Department of Biology, North Carolina Central University, Durham, NC

Temporary Lecturer; fall 1994

Department of Biology, University of North Carolina-Chapel Hill

Instructor; school year 1993-94

Department of Botany, Duke University

Instructor/Coordinator for Science Education; 1990-93

Program in Education, Duke University

OTHER TEACHING EXPERIENCE:

Teaching Assistant; 1988-93
Department of Botany, Duke University

Science Teacher; 1986-1988
Lake Placid Central School District, Lake Placid, NY

Education Associate and Fellow; 1983-86
Education Department, Museum of Science, Boston, MA

Park Interpreter; summer 1984
Department of Parks and Recreation, State of Massachusetts

AWARDS:

A.J. Sharp Award, honorable mention-student paper; 1994
American Bryological and Lichenological Society

Lewis E. Anderson Instructorship; school year 1993-94
The Graduate School and Department of Botany, Duke University

Best Student Paper; 1992
Ecological Section, Botanical Society of America

Dean's Award for Excellence in Teaching; school year 1990-91
Duke University, one of two annual awards

Arthur Vining Davis Fellowship; school year 1983-84
Education Department, Museum of Science, Boston, MA

EXTERNAL GRANTS:

National Science Foundation; Course, Curriculum and Laboratory Instruction, 2000-03
Project title: Computer Simulation Modeling Using STELLA to Enhance Investigative Learning in a Biology Curriculum (with co-PIs Grant Brown and Paul Willing)

Graduate and Post-Graduate Research Grant; E.N. Huyck Preserve and Biological Research Station, 2000. Project title: Understanding Bryophyte Water Relations: Field Validation of a Canopy Exchange Model

National Science Foundation; Dissertation Improvement Award, 1992
Project title: Form, Function and Phylogeny in Aquatic *Sphagnum*

Friends of the Farlow Fellowship; Farlow Herbarium, Harvard University, 1992
Project title: Character Analysis and Phylogeny of *Sphagnum*

Grant-in-Aid Research Award; Sigma Xi, 1991
Project title: Common Garden Experiments in Aquatic *Sphagnum*

PUBLICATIONS:

- Malcolm, G.M., D.S. Bush and S.K. RICE 2008. Soil nitrogen conditions approach pre-invasion levels following restoration of nitrogen-fixing black locust (*Robinia pseudoacacia*) stands in a pine-oak. Restoration Ecology, in press--published online September 10, 2007, due in print form March 2008.
- RICE, STEVEN K. 2006. Towards an integrated understanding of bryophyte performance: the dimensions of space and time. *Lindbergia* 31: 42-53.
- RICE, STEVEN K., C. Gutman and N. Krouglicof 2005. Laser scanning reveals bryophyte canopy structure. *New Phytologist* 166: 695-704.
- RICE, STEVEN K. and N. Schneider 2004. Cushion size, surface roughness and the control of water balance and carbon flux in the cushion moss *Leucobryum glaucum* (Leucobryaceae). *American Journal of Botany* 91: 1164-1172.
- RICE, STEVEN K., B. Westerman, and R. Federici 2004. Impacts of the exotic, nitrogen-fixing black locust on nitrogen-cycling in a pine-oak ecosystem. *Plant Ecology* 174: 97-107.
- RICE, STEVEN K., D. Collins and A.M. Anderson 2001. Functional significance of variation in bryophyte canopy structure. *American Journal of Botany* 88: 1568-1576.
- RICE, STEVEN K. 2000. Variation in carbon isotope discrimination within and among *Sphagnum* species in a temperate wetland. *Oecologia* 123: 1-8.
- RICE, STEVEN K. and L. Giles 1996. The effects of leaf anatomy and water content on carbon isotope discrimination and photosynthesis in *Sphagnum*. *Plant, Cell and Environment* 19: 118-124.
- RICE, STEVEN K. 1995. Patterns of allocation and growth in aquatic *Sphagnum* species. *Canadian Journal of Botany* 73: 349-359.
- RICE, STEVEN K. and P.H. Schuepp 1995. On the ecological and evolutionary significance of branch and leaf morphology in aquatic *Sphagnum* (Sphagnaceae). *American Journal of Botany* 82: 833-846.
- RICE, STEVEN K. and L.J. Giles 1994. Climate in the Pleistocene. *Nature* 371: 111.
- RICE, STEVEN K. 1993. Vegetation establishment in post-fire *Adenostoma* chaparral in relation to fine-scale pattern in fire intensity and soil nutrients. *Journal of Vegetation Science* 4: 115-124.
- Proctor, M.C.F., J.A. Raven and S.K. RICE 1992. Stable carbon isotope discrimination in *Sphagnum* and other bryophytes: physiological and ecological implications. *Journal of Bryology* 17: 193-202.

MANUSCRIPTS IN REVIEW:

RICE, STEVEN K. Bryophytes. In review for: G.E. Likens (ed.), *Encyclopedia of Inland Waters*. Elsevier, Ltd., Oxford, UK.

RICE, STEVEN K., D.T. Hanson and L. Aclander. Relationships among tissue, canopy and photosynthetic characteristics in *Sphagnum* mosses. Submitted to *New Phytologist*.

TECHNICAL REPORTS:

RICE, STEVEN K. and N. Schneider 2003. Size Dependence of Boundary Layer Conditions and its Ecological Significance in the White Cushion Moss *Leucobryum glaucum*. Proceedings of the Plant Biomechanics 2003 Conference, East Lansing, MI.

RICE, STEVEN K. and R.K. Peet 1997. Vegetation of the lower Roanoke River floodplain. The Nature Conservancy, Arlington, VA, 154 pp.

BOOK REVIEWS:

RICE, STEVEN K. 2007. Review of Rydin, H. and J. Jeglum, *The Biology of Peatlands*. The Bryologist.

PRESENTED PAPERS [ABSTRACTS]:

RICE, STEVEN K., D.T. Hanson and L. Aclander 2007. Relationships among tissue-, canopy- and photosynthetic characteristics in *Sphagnum* mosses, a comparative study. Invited talk at symposium on Physiology of Algae and Bryophytes, Botanical Society of America, Chicago, IL [Abstract].

RICE, STEVEN K., S. Glover and L. Aclander 2007. Vertical distribution of light, chlorophyll, nitrogen and photosynthesis in *Sphagnum* canopies. American Bryological and Lichenological Society, annual meeting, Xalapa, MX [Abstract].

RICE, STEVEN K., D.T. Hanson and L. Aclander 2006. Functional traits of *Sphagnum* moss canopies as they relate to photosynthetic performance evaluated using phylogenetically independent contrasts. American Bryological and Lichenological Society, annual meeting, Chico, CA [Abstract].

RICE, STEVEN K. 2005. An integrated model of bryophyte canopy water and carbon dynamics. XVII International Botanical Congress, Vienna, Austria [Abstract].

RICE, STEVEN K. C. Gutman and N. Kroughlicof 2004. Laser scanning reveals bryophyte canopy structure. American Bryological and Lichenological Society, annual meeting, Snowbird, UT [Abstract].

RICE, STEVEN K. and N. Schneider 2003. Canopy size and the control of water balance in Leucobryum glaucum. American Bryological and Lichenological Society, annual meeting, Mobile, AL [Abstract].

- RICE, STEVEN K. and R.P. Willing 2003. Students investigate forest succession by combining field data collection and simulation modeling using STELLA software. Botanical Society of America, annual meeting, Mobile, AL [Abstract].
- RICE, STEVEN K. 2003. Models and experiments in the plant biology teaching laboratory. Plant Biomechanics 2003 Conference, East Lansing, MI.
- RICE, STEVEN K. 2002. Impacts of the exotic, nitrogen-fixing black locust on nitrogen-cycling in a pitch-pine-scrub oak community. Northeast Natural History Conference, New York State Museum, Albany, NY [Abstract].
- RICE, STEVEN K. and J. Wells 2002. Evaluating strategies to restore nitrogen limitation following black locust invasion using simulation modeling. Northeast Natural History Conference, New York State Museum, Albany, NY [Abstract].
- RICE, STEVEN K., G. Brown and P. Willing 2001. Computer modeling exercises enhance investigative laboratory experiences in plant biology. Botanical Society of America, Albuquerque, NM [Abstract].
- RICE, STEVEN K. and S. Robinson 2001. Canopy exchange and functional tradeoffs in bryophytes. Symposium talk in "Form and Function in Bryophytes", American Bryological and Lichenological Society, Albuquerque, NM [Abstract].
- RICE, STEVEN K. and D. Collins 2000. Living within boundary layers: the functional significance of variation in bryophyte canopy structure. Botanical Society of America, Portland, OR. [Abstract].
- RICE, STEVEN K. 2000. Understanding bryophyte water relations: field validation of a canopy exchange model. Science Symposium, E.N. Huyck Preserve and Biological Research Station.
- RICE, STEVEN K. and R. Federici 2000. Fire and site history affect N-mineralization in pitch pine-scrub oak communities. New York State Natural History Conference, Albany, NY [Abstract].
- RICE, STEVEN K. 1999. Variability in carbon isotope discrimination in *Sphagnum*. XVI International Botanical Congress, St. Louis, MO [Abstract].
- RICE, STEVEN K. and R.K. Peet, 1998. Altered hydrology and vegetation change on the lower Roanoke River floodplain I: Size class distribution of forest trees, 83rd Annual Meeting of the Ecological Society of America, Baltimore, MD. [Abstract].
- Townsend, P.A., S.K. RICE, R.K. Peet and S.J. Walsh 1997. Complementary vegetation classifications of the lower Roanoke River floodplain, NC derived from plot data and remotely-sensed imagery. Ecological Society of America, Albuquerque, NM [Abstract].
- RICE, STEVEN K. 1996. Beyond Hypothesis Testing: Using models in the investigative process. Biology in Action Conference, Radford University, Radford, VA.

- RICE, STEVEN K. and L.J Giles 1994. Short-term carbon isotope discrimination measurements in *Sphagnum*. Ecological Society of America, Knoxville, TN [Abstract].
- RICE, STEVEN K. and P.H. Schuepp 1994. The influence of branch and leaf morphology on boundary layer resistance in *Sphagnum trinitense* and *S. recurvum*. American Bryological and Lichenological Society, Knoxville, TN [Abstract].
- RICE, STEVEN K. 1992. The effect of leaf structure on plant resistances to CO₂ uptake in bryophytes. Botanical Society of America, Honolulu, HI [Abstract].
- RICE, STEVEN K. 1992. Morphological character analysis and a phylogenetic hypothesis in *Sphagnum* L. (Musci). American Society of Plant Taxonomists, Honolulu, HI [Abstract].
- RICE, STEVEN K. 1992. Morphometrics of the *Sphagnum recurvum* complex. The Anderson Symposium, June 1992, Duke University.
- Thrall, P. and S.K. RICE. 1992. Simulation models as tools to develop understanding in biology. National Science Teachers Association, Charlotte, NC.
- RICE, STEVEN K. 1991. Patterns of morphological variation of *Sphagnum* with respect to the water gradient. American Bryological and Lichenological Society, San Antonio, TX [Abstract].

INVITED TALKS:

- Department of Biology, Skidmore College. October 2006. Consequences of black locust invasion on nitrogen-cycling and restoration in the Albany Pine Bush.
- Department of Biology, Vassar College. April 2006. Why size matters in mosses: influence of canopy structure on boundary layer properties in bryophytes.
- Bryophyte Ecology, State of the Art 2005, Bryoplanet, Kéked, Hungary. Towards an integrated understanding of bryophyte performance: the dimensions of space and time.
- Appalachian Laboratory, Institute for Environmental Sciences, University of Maryland. April 2005. Why size matters in mosses: influence of canopy structure on boundary layer properties in bryophytes.
- Department of Biology, University of New Mexico. December 2004. Why size matters in mosses: influence of canopy structure on boundary layer properties in bryophytes.
- Department of Biology, SUNY Albany. Winter 2003. Ecological consequences of black locust invasion in the Albany Pine Bush.
- New York State Museum. Spring 2002. The effects of alien tree invasion: rooting out black locust. Public lecture in series entitled "Biology and Conservation of a Suburban Oasis."

Department of Botany, University of Wisconsin. Fall 2001. Functional trade-offs between bryophyte canopy structure and surface roughness. Presented talk at symposium and workshop on *Sphagnum* biology.

Department of Biology, SUNY Albany. Winter 2000. Community consequences of altered hydrology in a floodplain forest.

Department of Biology, Siena College. Fall 1999. Living within boundary layers: why size matters in mosses.

Department of Biology, Michigan Technological University. Spring 1993. Form and function in Aquatic *Sphagnum*.

PROFESSIONAL SERVICE:

Albany Pine Bush Preserve Commission
Commissioner, 2005-present

American Bryological and Lichenological Society
Executive Committee, 2004-07
Book Review Editor, 2004-present

Environmental Clearinghouse of Schenectady
Board of Directors, 2003-06

Botanical Society of America.
Scientist Mentor, Planting Science, 2005-present
Education Committee and Karling Awards Committee Member, 1998-2001.
Karling Awards Committee Member, 2001.

Association for the Protection of the Adirondacks.
Education Committee Member and Secretary, 1999-2001.

PROFESSIONAL MEMBERSHIPS:

Botanical Society of America
American Bryological and Lichenological Society
Ecological Society of America
Sigma Xi