

## CURRICULUM VITAE

### 1. PERSONAL INFORMATION

**John (Jack) W. Williams**  
 Limnological Research Center  
 Department of Geology and Geophysics  
 University of Minnesota Twin Cities

Research Interests

Paleoecology, Paleoclimatology, Earth System Science, Biogeography

### 2. CONTACT INFORMATION

WORK

Department of Geology and Geophysics  
 University of Minnesota Twin Cities Campus  
 310 Pillsbury Drive SE  
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1651 Randolph Ave  
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### 3. EDUCATION

PH.D. Geology	<b>Brown University</b>	August, 1999
M.Sc. Geology	<b>Brown University</b>	May, 1996
B.A. Geology, High Honors	<b>Oberlin College</b>	May, 1993

### 4. PROFESSIONAL EXPERIENCE

<b>Research Associate</b> Limnological Research Center Department of Geology and Geophysics University of Minnesota Twin Cities Campus	2003-
<b>Postdoctoral Fellow</b> National Center for Ecological Analysis and Synthesis University of California, Santa Barbara	1999-2003
<b>Visiting Scholar</b> Department of Ecology Lund University	1997
<b>Doctoral Student</b> Department of Geological Sciences Brown University	1994-1999

## 5. PUBLICATIONS

- Smith, M. D., **Williams, J. W.**, Andelman, S. J., Chalcraft, D. R., Waide, R. B., Willig, M. R. (in review) Ecology by design: Synoptic networks to advance ecological understanding.
- Jennings, M. D., **Williams, J. W.**, Stromberg, M. R. (in review) Diversity and productivity across plant communities of the inland northwest, USA. *Ecology*.
- Chalcraft, D. R., **Williams, J. W.**, Smith, M. D., Willig, M. R. (in press) Scale dependence in the relationship between diversity and productivity: assessing the role of spatial and temporal turnover. *Ecology*.
- Jackson, S. T. and **Williams, J. W.** (in press) Modern analogs in Quaternary paleoecology: Here today, gone yesterday, gone tomorrow? *Annual Review of Earth and Planetary Sciences*.
- Williams, J. W.** (in press) Quaternary Vegetation Distributions. *Encyclopedia of Paleoclimatology and Ancient Environments*. Edited by V. Gornitz. Kluwer Academic Publishers.
- Williams, J. W.**, Shuman, B. N., Webb, T., III, Bartlein, P. J., Leduc, P. (2004) Late Quaternary vegetation dynamics in North America: Scaling from taxa to biomes. *Ecological Monographs* 74: 309-334.
- Webb, T., Shuman, B. N., **Williams, J. W.** (2003) Climatically forced vegetation dynamics in North America during the late Quaternary period. *The Quaternary Period in the United States*. Edited by Gillespie, A. R., Porter, S. C., Atwater, B. F. Elsevier, pp. 459-478.
- Gavin, D. G., Oswald, W. W., Wahl, E. R., **Williams, J. W.** (2003) A statistical approach to evaluating distance metrics and analog assignments for pollen records. *Quaternary Research* 60: 356-367.
- Williams, J. W.** and Jackson, S. T. (2003) Palynological and AVHRR observations of modern vegetational gradients in eastern North America. *The Holocene* 13: 485-497.
- Williams, J. W.** (2003) Needleleaved and broadleaved tree cover distributions in North America since the Last Glacial Maximum. *Global and Planetary Change* 35: 1-23.
- Williams, J. W.**, Post, D. M., Cwynar, L. C., Lotter, A. F., Levesque, A. J. (2002) Rapid vegetation responses to past climate change. *Geology* 30: 971-974.
- Shuman, B. N., Webb III, T., Bartlein, P. J., **Williams, J. W.** (2002) The anatomy of a climatic oscillation: Vegetation change in eastern North America during the Younger Dryas chronozone. *Quaternary Science Reviews*. 21: 1777-1791.
- Williams, J. W.**, Shuman, B. N., Webb III, T. (2001) Dissimilarity analyses of late-Quaternary vegetation and climate in eastern North America. *Ecology*. 82: 3346-3362. (*Editor's Choice in Science* (2002) 295: 409)
- Williams, J. W.**, Webb III, T., Richard, P. J. H., Newby, P. (2000) Late Quaternary biomes of Canada and the eastern United States. *Journal of Biogeography* 27: 585-607.
- Edwards, M. E., Anderson, P. M., Brubaker, L. B., Ager, T., Andreev, A. A., Bigelow, N. H., Cwynar, L. C., Eisner, W. R., Harrison, S. P., Hu, F.-S., Jolly, D., Lozhkin, A. V., McDonald, G. M., Mock, C. J., Ritchie, J. C., Sher, A. V., Spear, R. W., **Williams, J. W.**, and Yu, G. (2000) Pollen-based biomes for Beringia 18,000, 6000, and 0 14C yr. B.P. *Journal of Biogeography* 27: 521-554.
- Williams, J. W.**, Bartlein, P. J., and Webb III, T. (2000) Data-model comparisons for eastern North America - inferred biomes and climate values from pollen data. *Proceedings of the 3<sup>rd</sup> Paleoclimate Modeling Intercomparison Project Workshop*, Oct.

4-8, 1999. Montreal, Canada. Edited by P. Braconnot. WCRP-111, WMO/TD-No. 1007, pp. 77-86.

**Williams, J. W.**, Webb III, T., Shuman, B. N., and Bartlein, P. J. (2000) Do low CO<sub>2</sub> concentrations affect pollen-based reconstructions of LGM climates? A response to 'Physiological significance of low atmospheric CO<sub>2</sub> for plant-climate interactions' by Cowling and Sykes. *Quaternary Research* **53**: 402-404.

Jackson, S. T., Webb, R. S., Anderson, K. H., Overpeck, J. T., Webb III, T., **Williams, J. W.**, and Hansen, B. C. S. (2000) Vegetation and environment in eastern North America during the last glacial maximum. *Quaternary Science Reviews* **19**: 489-508.

**Williams, J. W.**, Summers, R., and Webb III, T. (1998) Applying plant functional types to construct biome maps from eastern North American pollen data: comparisons with model results. *Quaternary Science Reviews* **17**: 607-627.

Leduc, P. L., **Williams, J. W.**, and Webb III, T. (1998) Programs for site selection, tabular display, and interpolation of data from Paradox-based pollen databases. *INQUA Newsletter* **17**.

**Williams, J. W.** (1995) Factors controlling the formation of fossiliferous beds in the Devonian Columbus limestone at Marblehead Quarry, Marblehead, Ohio. *Ohio Journal of Sciences* **95**: 325-330. (*Paper of the Year*)

## 6. CONTRACTS AND GRANTS

### FUNDED

NSF Paleoclimate Program: "Collaborative Research: Surface-Atmosphere Feedbacks and Holocene Climate Variations in Eastern North America: Linkages, Impacts, and Governing Mechanisms" 2003-2007  
\$177,761

American Geophysical Union: Travel support to International Union of Geophysics and Geodesy 2003 Annual Meeting \$1,500 2003

National Center for Ecological Analysis and Synthesis, Postdoctoral Fellowship: "Integrating satellite and pollen data with biogeochemical modeling to reconstruct long-term trends in the productivity and carbon sequestration of terrestrial ecosystems" \$86,000 1999-2001

NSF Bioinformatics, Postdoctoral Fellowship: "Reconstructing millennial-scale trends in terrestrial productivity and carbon sequestration" \$100,000 (*declined by investigator*) 1999-2001

Sigma Xi Grant-In-Aid-Of-Research: "Taphonomic processes and the formation of fossil-rich sediment horizons" \$500 1992

## 7. TEACHING EXPERIENCE

Lecturer, University of Minnesota Twin Cities. 2003-  
Earth System Science and History, 25 students, including graduate and undergraduate students. Two lectures and a lab/discussion section per week. A writing-intensive course.

Individual Teaching Consultant, Brown University. 1998-1999  
At the Center for the Advancement of College Teaching, attended and observed other graduate students' lectures, labs, or discussion sessions, and provided constructive feedback. Covered a wide range of disciplines from the sciences and humanities.

Departmental Teaching Liaison, Brown University 1997-1998  
Organized teaching orientation sessions for department, and served as information conduit between the Geology Department and the Center. Led follow-up discussions to university-wide teaching seminars

Teaching Assistant, Brown University. 1998  
Advanced sedimentology class. On my own initiative, raised funds, organized, and led 15-person field trip to Florida Keys to study modern carbonate platform sedimentary systems.

Teaching Assistant, Brown University. 1996  
Introductory geology class. Ran laboratory sections and graded homework and tests.

#### 8. OUTREACH ACTIVITIES

Kids Do Ecology, National Center for Ecological Analysis and Synthesis. 1999-2000  
Introduced 5<sup>th</sup> grade students to basic ecological concepts and helped them design and perform their own scientific experiment.

Global warming: Not if, how much? Opinion article published in *Santa-Barbara News-Press* July 23, 2000. 2000

#### 9. PAPERS PRESENTED

##### SEMINARS

Antioch University, Environmental Studies Department, Keene, NH. May, 2003.

University of California Santa Barbara, Department of Geography, Santa Barbara, CA. January, 2003.

University of Utah, Department of Geography, Salt Lake City, CA. January, 2003.

University of California Santa Cruz, Department of Earth Sciences, Santa Cruz, CA. May, 2002.

American Meteorological Society, Central Coast Chapter, Santa Barbara, CA. April, 2002.

DePaul University, Department of Geography, Chicago, IL. January, 2002.

Washington State University, Environmental Science and Regional Planning Program, Pullman, WA. March, 2001.

Denver University, Department of Geography, Denver, CO. February, 2001.

Lehigh University, Department of Earth and Environmental Sciences, Lehigh, PA. January, 2001.

University of Alberta, Department of Earth and Atmospheric Sciences, Edmonton, AB. January, 2001.

University of South Carolina, Department of Geological Sciences, Charleston, SC. January, 2001.

University of Minnesota, Department of Ecology, Evolution, and Behavior, Minneapolis, MN. November, 2000.

University of Chicago, Department of Geophysical Sciences, Chicago, IL. October, 2000.

University of California Santa Barbara, Department of Ecology, Evolution, and Marine Biology, Santa Barbara, CA. October, 2000.

Brown University, Department of Ecology and Evolutionary Biology, Providence, RI. March, 1997.

#### INVITED

**Williams, J. W.** and Jackson, S. T. (2003) Quantitative reconstructions of Late Quaternary tree cover from modern pollen-AVHRR calibrations. International Union for Quaternary Research (INQUA), Reno, NV.

**Williams, J. W.** (2002) Vegetation-Atmosphere Interactions During the Late Quaternary: Current Advances and Future Directions. *American Geophysical Union Fall Meeting*, San Francisco, CA.

**Williams, J. W.** (2000) Land Cover Change in Boreal and Eastern North America Since the Last Glacial Maximum. *American Geophysical Union Fall Meeting*, San Francisco, CA.

**Williams, J. W.**, Shuman, B. N., Webb III, T. (2000) No-Analog Biomes and Climate in Eastern North America. *American Geophysical Union Spring Meeting*, Washington, DC.

**Williams, J.W.**, Bartlein, P. J., and Webb III, T. (1999) Data-model comparisons for eastern North America: Inferred biomes and climate values from pollen data. *3<sup>rd</sup> Paleoclimate Modeling Intercomparison Project Workshop*, Montreal, Canada.

**Williams, J. W.** (1998) Past biome distributions in boreal and eastern North America: observations and simulations. *Biome 6000 Workshop*, Jena, Germany.

Killilea, M., **Williams, J. W.**, Webb III, T., Hall, C., and Leopold, D. (1998) Community reconstruction and gradient analysis at varying spatial, temporal, and taxonomic resolutions: pollen and tree inventory data from New York State. *Geological Society of America Penrose Conference: Linking spatial and temporal scales in ecology and paleoecology*, Solomons Island, MD.

**Williams, J. W.**, and Webb III, T. (1997) Reconstructing eastern North American biomes from pollen data for today and 6 kya. *European Science Foundation Conference*, Il Ciocco, Italy.

#### CONTRIBUTED

**Williams, J. W.**, Shuman, B. N., Webb III, T., Bartlein, P. J. (2003) North American vegetation and climates from 21,000 years ago to present: Useful data sets for testing earth system models. International Union for Quaternary Research (INQUA), Reno, NV.

**Williams, J. W.** (2003) Holocene variations in tree cover and leaf area index in North America. International Union of Geophysics and Geodesy, Sapporo, Japan.

**Williams, J. W.**, Hunt, E. R., and Jackson, S. T. (2002) Integrating AVHRR and paleoecological data to reconstruct past variations in tree cover and the terrestrial carbon cycle. *American Quaternary Association Biennial Meeting*, Anchorage, AK.

**Williams, J. W.**, Post, D. M., Cwynar, L., Lotter, A., Levesque, A. (2002) Rapid and widespread vegetation responses to late-glacial climate change in the North Atlantic region. *Ecological Society of America Annual Meeting*, Tucson, AZ.

**Williams, J. W.**, Post, D. M., Cwynar, L. C., Lotter, A. F., Levesque, A. J. (2001) Fast vegetational responses to late-glacial climate change. *American Geophysical Union*

*Fall Meeting, San Francisco, CA.*

- Williams, J. W.** (2001) Late-Quaternary land cover change in boreal and eastern North America. *Ecological Society of America Annual Meeting, Madison, WI.*
- Williams, J. W.** and Jackson, S. T. (2000) Fossil pollen records and AVHRR: Complementary sensors of the vegetation. *Ecological Society of America Annual Meeting, Snowbird, UT.*
- Williams, J. W.,** Bartlein, P. J., Shafer, S., and Webb III, T. (1999) BIOME1 and BIOME3 Simulations of Mid-Holocene Vegetation: Testing the Models. *American Geophysical Union Fall Meeting, San Francisco, CA.*
- Williams, J. W.,** Shuman, B. N., Webb III, T., Bartlein, P. J., and Leduc, P. L. (1999) Millennial-scale vegetation dynamics in eastern and northern North America since the last glacial maximum: pollen-based vegetation maps at 1000-year intervals. *Ecological Society of America Annual Meeting, Spokane, WA.*
- Williams, J. W.,** Shuman, B. N., Webb III, T., Bartlein, P. J., and Leduc, P. L. (1999) North American vegetation dynamics during the late Quaternary at a 1000-year resolution. *Geological Society of America, Northeastern Section, Providence, RI.*
- Williams, J. W.,** Bartlein, P.J., Leduc, P., Shafer, S., and Webb III, T. (1998) Evaluating simulated mid-Holocene climates and biomes in North America against pollen data. *American Geophysical Union Fall Meeting, San Francisco, CA.*
- Shuman, B.N. **Williams, J. W.,** Leduc, P. Webb III, T. (1998) Vegetation maps at 1000-year intervals in eastern North America back to the last glacial maximum. *American Geophysical Union Fall Meeting, San Francisco, CA.*
- Williams, J. W.,** Webb III, T., Richard, P. J. H., Newby, P., and Leduc, P. (1998) Biome distributions and composition in Canada and eastern North America during the late Quaternary. *PAGES Open Science Meeting, London, United Kingdom.*
- Williams, J. W.,** Bartlein, P.J., Webb III, T., and Richard P.J.H. (1998) BIOME3 and BIOME1 Simulations of North American Vegetation at 6 rka: Validation Against Pollen Data. *American Geophysical Union Spring Meeting, Boston, MA.*
- Williams, J. W.,** Summers, R., and Webb III, T. (1996) Using pollen data to estimate terrestrial carbon storage in eastern North America at 0, 6, 12, and 18 rka. *American Geophysical Union Fall Meeting, San Francisco, CA.*
- Williams, J. W.,** Summers, R., and Webb III, T. (1996) A new method to estimate from pollen data changes in terrestrial carbon storage in eastern North America since the last glacial maximum 1996. *Ecological Society of America Annual Meeting, Providence, RI.*
- Summers, R., **Williams, J. W.,** and Webb III, T. (1996) Biome patterns in Late Quaternary eastern North America inferred from pollen data using plant functional types. *American Quaternary Association Biennial Meeting, Flagstaff, AZ.*
- Summers, R., **Williams, J. W.,** and Webb III, T. (1995) Pollen-derived estimates of Late Quaternary biome patterns in eastern North America: the use of plant functional types. *American Geophysical Union Fall Meeting, San Francisco, CA.*

## 10. HONORS AND AWARDS

Cooper Award, Ecological Society of America	2004
Corinna Borden Keen Dissertation Fellowship, Brown University	1999
Teaching Certificate, Center for the Advancement of College Teaching	1996
Paper of the Year, Ohio Journal of Sciences	1995
Brown University Fellowship	1994-1995
Oberlin Geology Wharton Award	1993

Phi Beta Kappa

1992

**11. PROFESSIONAL AFFILIATIONS, ACTIVITIES, AND SERVICE**AFFILIATIONS AND ACTIVITIES

Knowledge Network for Biocomplexity, NCEAS Working Group	2002-present
BIOME 300 Workgroup	2000-2001
Paleoclimate Modeling Intercomparison Project (PMIP)	1999-2000
BIOME 6000 Paleovegetation Mapping Workgroup	1995-2000

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

American Association for the Advancement of Science  
 American Geophysical Union  
 American Quaternary Association  
 Association of American Geographers  
 Ecological Society of America  
 National Association of Geoscience Teachers

SERVICE

Chair, Paleoecology Section, Ecological Society of America	2001-2002
Vice-Chair, Paleoecology Section, Ecological Society of America	2000-2001
NCEAS Open House Coordinator	2000-2001
Departmental Student Representative, Brown University	1998-1999
Geoclub President, Brown University	1995-1996

SYMPOSIA AND MEETINGS ORGANIZED

Williams, J. W. and Cowling, S. (2002) Gasping for CO<sub>2</sub>: Ecological impacts of past variations in atmospheric carbon dioxide. *Ecological Society of America Annual Meeting*. Tucson, AZ.

BOOK REVIEWS

<b>Conservation Ecology</b> "Old Forests and Fire" Review of <i>America's Ancient Forests: From the Ice Age to the Age of Discovery</i> by T. M. Bonnicksen	2000
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LETTERS

Shurin, J., Gergel, S., Kaufman, D., Post, D., Seabloom, E., **Williams, J.** (2001) In Defense of Ecology. *The Scientist* 15: 6.

**11. RECENT COLLABORATORS**

S. Andelman (NCEAS), P. Bartlein (U. Oregon), D. Chalcraft (NCEAS), S. Cowling (U. Toronto), L. Cwynar (U. New Brunswick), S. Jackson (U. Wyoming), D. Gavin (U. Illinois Urbana-Champaign), E.R. Hunt (USDA-ARS), M. Jennings (USGS), D. Kaufman (Kansas State), A. Lotter (U. Utrecht), D. Post (Yale), E. Seabloom (NCEAS), B. Shuman (U. Oregon), D. Slayback (NASA-Goddard), M. Smith (NCEAS), M. Stromberg (UC Berkeley), B. Waide (LTER Network Office), T. Webb (Brown U.), M. Willig (Texas Tech)