

## BIOGRAPHICAL SKETCH – BARBARA J. TEWKSBURY

Dept. of Geosciences, Hamilton College, Clinton, NY 13323, btewksbu@hamilton.edu

### Professional Preparation

University of Colorado, Geology, PhD 1981

University of Colorado, Geology, MS 1978

St. Lawrence University, Geology, BS 1973

### Appointments

Current: Professor of Geosciences, holder of the Upson Chair at Hamilton College, Clinton, NY; chair of the Department 1996-2004.

1977: visiting assistant professor, The Colorado College, Colorado Springs, Colorado

### Professional Honors and Activities

2010 Science Team, NASA Desert RATS field test of manned lunar roving vehicles

2010 Instructor, field geology training for current NASA astronaut candidate class

2009-present Distinguished Speaker, National Association of Geoscience Teachers

2007-present Member, FEAT (Field Exploration and Analysis Team), tasked with designing and carrying out the geological training for the current NASA astronaut candidates

2007-present Member, Education and Outreach Advisory Board of UNAVCO

2006-present Senior Fellow, SENCER Program (Science Education for New Civic Engagements and Responsibilities)

2006-present Member, Advisory Board, NSF-funded Strong Geoscience Departments Project

2008-2009 Steering Committee, NSF-funded Earth Science Literacy Initiative

2008 Named to Upson Chair of Public Discourse, Hamilton College

2006 Honorary degree, Doctor of Science, St. Lawrence University

2006 named Senior Fellow of the NSF-funded SENCER Project (Science Education for New Civic Engagements and Responsibilities)

2002-2005 Chair, Annual Program Committee, Geological Society of America

2003-2004 President, American Geological Institute

2003 Named to William R. Kenan, Jr. Professorship at Hamilton College

2003 2003 recipient of the national Neil Miner Award from the National Association of Geoscience Teachers for exceptional contributions to the stimulation of interest in the Earth Sciences

2002 My introductory geology course, the Geology and Development of Modern Africa, was selected as one of four introductory undergraduate science courses to be disseminated nationally by the SENCER program of the American Association of Colleges and Universities

1999-2002 Elected member-at-large, Council of the Geological Society of America

1998-2002 Executive Committee Representative, National Association of Geoscience Teachers; NAGT representative to the AGI Council

2001 Elected Fellow of the Geological Society of America

1997-2001 Member, National Visiting Committee, STEMTEC (Science, Technology, Engineering and Mathematics Teacher Education Collaborative) Project (NSF Collaborative for Excellence in Teacher Preparation, University of Massachusetts Collaborative)

1994-2001 Distinguished Speaker, National Association of Geoscience Teachers national speakers program

1998-2001 Editorial Board, *Journal of Geoscience Education*

1997 Named New York State Professor of the Year by the Carnegie Foundation for the Advancement of Teaching

1996-1997 President, National Association of Geoscience Teachers

1991-1994 President, Geology Division, Council on Undergraduate Research

1991 Named to Stephen Harper Kirner Chair of Science at Hamilton College

### 5 Publications Most Closely Related to Current Work in Egypt and Iceland

Tewksbury, Barbara J., Hogan, John P., Kemp, Stephen Michaels, Keren, Tucker T., Tewksbury-Christle, Carolyn M., Schultz, Richard A., and Mehrtens, Charlotte, 2010, Deformation bands and the expression in siliciclastic cover rocks of slip on basement faults in southern Egypt: Geological Society of America, abstracts with programs, v. 41, no. 7.

- Tewksbury**, Barbara, 2010, The role of deformation bands in the collapse of subglacial hyaloclastite ridges: an example from Valahnúkar, Iceland: Geological Society of America Abstracts with Programs, v. 41, no. 7.
- Hogan, John P., **Tewksbury**, Barbara J., El Fakharani, Abdel-Hamid, 2010, Preliminary investigation of the El Kaser structure of the Western Desert of Egypt – implications for the origin of “Desert Eyes”: Geological Society of America Abstracts with Programs, v. 41, no. 7.
- Tewksbury**, Barbara J., Abdelsalam, Mohamed G., Tewksbury-Christle, Carolyn M., Hogan, John P., Pandey, Anoop R., and Jerris, Thomas J, 2009, Reconnaissance study of domes and basins in Tertiary sedimentary rocks in the Western Desert of Egypt using high resolution satellite imagery: Geological Society of America, Abstracts with Programs, v. 40, no. 7; full paper on line at [http://gsa.confex.com/gsa/2009AM/finalprogram/abstract\\_165205.htm](http://gsa.confex.com/gsa/2009AM/finalprogram/abstract_165205.htm)
- Tewksbury**, Barbara, Williamson, Elyse, Kattenhorn, Simon, Barnes, Jane, 2009, Fragile glass: deformation band formation in unconsolidated hyalotuff, Valahnúkar, Iceland, Geological Society of America, Abstracts with Programs, v. 40, no. 7; full paper available on line at [http://gsa.confex.com/gsa/2009AM/finalprogram/abstract\\_162251.htm](http://gsa.confex.com/gsa/2009AM/finalprogram/abstract_162251.htm)

### Synergistic Activities

**Innovations in Teaching and Training:** I have developed an online Tutorial on Designing Effective and Innovative Courses and created a companion web site for faculty developers. The two sites are:

<http://serc.carleton.edu/NAGTWorkshops/coursedesign/tutorial/index.html>  
[http://serc.carleton.edu/NAGTWorkshops/coursedesign/tutorial/for\\_developers.html](http://serc.carleton.edu/NAGTWorkshops/coursedesign/tutorial/for_developers.html)

The Tutorial has been reviewed and accepted for the MERLOT (Multimedia Educational Resource for Learning and Online Teaching) online collection at <http://www.merlot.org/merlot/viewMaterial.htm?id=329336> The approach is also published in

**Tewksbury**, B.J. and Macdonald, R.H., 2007, A practical strategy for designing effective and innovative courses, *in*, Karukstis, K.K. and Elgren, T., eds., *Designing, Implementing, and Sustaining a Research-Supportive Undergraduate Curriculum: A Compendium of Successful Curricular Practices from Faculty and Institutions Engaged in Undergraduate Research*: Washington, DC, Council on Undergraduate Research, p. 127-136.

I have also developed an approach for **teaching geologic map interpretation using Google Earth**. The approach, along with kmz files, is available on line at <http://serc.carleton.edu/NAGTWorkshops/structure/approach.html>

**Dissemination of Innovations in Teaching:** Over the past twelve years, I have given workshops on innovative and effective course design and teaching strategies at national meetings of PKAL, SENCER (Science Education for New Civic Engagements and Responsibilities), POD (The Professional and Organizational Development Network in Higher Education), NRC Math Science Partnerships, DLESE, American Geophysical Union, and Geological Society of America, the 2<sup>nd</sup> International Conference on Geoscience Education, and at over 50 colleges and universities in the United States and abroad.

**Leadership in the Profession:** I have served the geoscience community as President of the American Geological Institute (2003-2004); as President of the National Association of Geoscience Teachers (1996-97); as a Distinguished Speaker of the National Association of Geoscience Teachers (1994-2001); as President of the Geology Division of the Council on Undergraduate Research (1991-1994); as an elected member of the Council of the Geological Society of America (1999-2002); Chair of the Annual Program Committee of the Geological Society of America (2002-2005); in 2004, I was the recipient of the 2003 Neil Miner Award from the National Association of Geoscience Teachers for exceptional contributions to the stimulation of interest in the Earth Sciences; in 2006, I received an honorary doctorate from St. Lawrence University for my work in geoscience education.

**Innovations in Teaching and Development of Course Materials:** In 2002, my introductory geology course, the Geology and Development of Modern Africa, was selected as one of four introductory undergraduate science courses to be disseminated nationally by the NSF-funded SENCER program (Science Education for New Civic Engagements and Responsibilities); full course materials (200 Mb, approximately 300 pages) are available from SENCER.

**Grants for Improving Geoscience Education:** I have been one of four co-PIs on two NSF DUE CCLI-ND grants between 2001 and present for a total of \$7 million that have funded development of the program *On the Cutting Edge* (described above). I was also co-PI on an NSF EHR-UFE grant with a start date in 1997 for \$149,000 to run 4-day workshops for early career faculty in the geosciences on teaching, research, and careers, and co-PI on an NSF EHR-UFE grant with a start date in 1996 to run day-long and summer 4-day workshops on innovative teaching techniques and course design.