Curriculum Vitae

BARBARA J. TEWKSBURY
Professor of Geosciences
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Professional Experience

1978 to present	faculty member, Department of Geosciences at Hamilton College; currently Full Professor of Geoscience
2008 to present	holder of Upson Chair of Public Discourse, Hamilton College
1996 to 2004	Chair, Geology Department, Hamilton College
2004-2007	holder of William R. Kenan, Jr. Chair of Science at Hamilton College
1991 to 2004	holder of Stephen Harper Kirner Chair of Science at Hamilton College
1987-1992	Chair, Geology Department at Hamilton College
summer 1981	School for Field Studies, group geologist and co-leader for 4-week course on the geology of Iceland
fall 1977	visiting lecturer, Department of Geology, The Colorado College

Professional Honors

2011	recipient of NASA Group Achievement Award, as a member of the 2010 Desert Research and Technology Studies Science Team, for outstanding contributions in developing and testing science operations for NASA human explorations missions to the Moon, Mars, and beyond
2008	named to Upson Chair, 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)
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
2001	elected Fellow of the Geological Society of America
1997	New York State Professor of the Year Award from the Carnegie Foundation for the Advancement of Teaching
1991	named to Stephen Harper Kirner Chair of Science at Hamilton College

Other Professional Activities

2015-present	Member, Geological Society of America Professional Development Committee
2014-present	Research advisor for Mahmoud Hanafy, MS student at Damanhour University, Damanhour, Egypt
2009-present	Instructor for NASA astronaut geoscience training, both classroom and field
2013-present	Speaker for the Travelling Workshop Program of the National Association of Geoscience Teachers
2010-2015	Associate Editor, *Geosphere* (Geological Society of America)
2010-2014	Primary research advisor for Asmaa A.K. Dokmak, MS student at Alexandria University, Alexandria, Egypt
2010 & 2011	Member, Science Team for NASA Desert RATS (Research and Technology Studies) field simulation tests of a science mission to the Moon (2010) and an asteroid (2011)

2009-2010	Distinguished Speaker, National Association of Geoscience Teachers
2008-2009	Steering Committee, NSF-funded Earth Science Literacy Initiative
2007-2010	Member, Education and Outreach Advisory Board of UNAVCO
2006-2012	Member, Advisory Board, NSF-funded Strong Geoscience Departments Project
2005-2006	Chair, Education Committee, American Geological Institute
2003-2004	President, American Geological Institute
2002-2003	President-elect, American Geological Institute
2002-2005	Chair, Annual Program Committee, Geological Society of America
1999-2005	Member, Professional Development Committee, Geological Society of America
1998-2004	Member, National Selection Committee for selection of Bingham Teaching Scholars at Transylvania University; Chair of Selection Committee for 2002-03.
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
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
1999-2001	EarthComm Advisory Committee, American Geological Institute
2000-2001	Nominating Committee, American Geological Institute
1998-2001	Editorial Board, *Journal of Geoscience Education*
1996-1997	President, National Association of Geoscience Teachers
1995-1996	Vice President, National Association of Geoscience Teachers
1995-1998	Member, Advisory Board, Columbia University/Barnard College undergraduate curriculum initiative in environmental science
1994-1995	Second Vice President, National Association of Geoscience Teachers
1994	Member, Program Review Panel, EHR Program of the Earth Sciences Division, Geosciences Directorate, National Science Foundation
1992-1994	Councilor-at-Large, Executive Committee, National Association of Geoscience Teachers
1991-1994	President, Geology Division, Council on Undergraduate Research
1991-1995	Member, Advisory Board, Department of Geological Sciences, University of Colorado
1992 to 1993	Member, Advisory Board of Project Kaleidoscope
1989-1994	Councilor, Geology Division, Council on Undergraduate Research

Academic History

Ph.D., Geology, University of Colorado, 1981
M.S., Geology, University of Colorado, 1978
B.S., Geology, St. Lawrence University, 1973

Research

Egypt: The remote Western Desert of central and southern Egypt is part of the Stable Platform of Late Mesozoic and Cenozoic North Africa and is not an area that immediately pops to mind as a place to look for interesting bedrock structures. High resolution satellite imagery in Google Earth, though, reveals spectacular and previously unstudied fold and fault structures in rocks as young as Middle Eocene exposed over literally tens of thousands of square kilometers by a unique combination of very low topographic relief, minimal surficial cover, and no vegetation. Faults are equally well exposed over great distances in many areas and include a unique set of polygonal faults near Farafra Oasis that were not only previously unrecognized but also are the only terrain of polygonal faults extensively exposed on land anywhere in the world. I am lead PI on an NSF-funded project to begin to map these features, establish the spatial and temporal relationships among them, and work out their origin and evolution. I am privileged to work in collaboration with talented

colleagues and students from both the US and Egypt. Our work involves a combination of field work, thin section analysis, remote sensing, geochemical analysis, and shallow geophysical surveys. I served as the primary research advisor of an MS student at Alexandria University in Egypt. She received her MS in 2014, and our work combined satellite image interpretation and field work in the Western Desert. I am currently co-advising two other Egyptian MS students, Mahmoud Hanafy and Marwa Hamdy.

Iceland: Subglacially erupted basaltic hyalotuffs in many parts of Iceland contain sets of light-colored, resistant fins and ribs standing above the surrounding soft palagonitized hyalotuff. My work has revealed that, although these structures look superficially like veins, they are actually deformation bands - structures that form in porous materials in lieu of through-going fractures and that allow fault-like offset along quasi-planar zones of pore space collapse and, commonly, cataclasis. Although deformation bands do occur in association with faults in hyalotuff on Reykjanes in southwest Iceland, the subglacial ridge at Valahnúkar in south central Iceland displays sets of deformation bands whose formation is clearly not fault-related. Multiple lines of evidence indicate that these deformation bands formed in unconsolidated tuff as the subglacial edifice was forming and locally collapsing as the pile accumulated. The presence of large, fragile, highly vesicular grains of basaltic glass not protected by a buffering matrix of finer grains appears to be the key to formation of deformation bands in these unconsolidated materials.

Geoscience education: For over 20 years, I have been involved in significant national efforts to improve geoscience education at the college/university level. In January, 2002, three colleagues[1] and I received a five-year, $4.2 million grant from the Division of Undergraduate Education at NSF to develop a professional development program for geoscience faculty with the aim of continuing efforts that the four PIs had been engaged in since 1994 to improve geoscience education at the undergraduate level in the US. The program, called *On the Cutting Edge*, has three components: workshops, web resources, and research on teaching practice in the United States. The program web site is at http://serc.carleton.edu/NAGTWorkshops/, and one of my primary responsibilities has been development of an online tutorial on effective and innovative course design, with a companion site for faculty developers wishing to adapt or adopt our workshop and tutorial in other disciplines, including those outside the geosciences (http://serc.carleton.edu/NAGTWorkshops/coursedesign/tutorial/index.html). In 2006, we received an additional $2 million over three years from NSF to continue and expand the project, and, in 2010, we received $3 million to continue the project for another five years. We are in the process of transferring the critical components of *On the Cutting Edge* to management by the National Association of Geoscience Teachers. I am also now working with another NSF-funded project (GEODE) to develop new ways to use Google Earth for online and distance education.

Teaching

I have been deeply involved for many years in creative course design in geology. For the past twenty years, I have been particularly interested in improving learning environments in the classroom and in integrating innovative, non-lecture-based teaching techniques into my courses. I have both published and spoken widely on the success of these techniques. I also teach a unique introductory geology course on the Geology and Human Events in North Africa and the Middle East, which the focuses on the underlying influence of geology on human events. I currently teach semester-length courses in structural geology, GIS for Geoscientists, plate tectonics, planetary geology, and introductory geology, plus a two-week field course in Iceland.

Publications

Eppler, Dean, Evans, Cynthia, Tewksbury, Barbara, Helper, Mark, Bleacher, Jacob, Fossum, Michael, Ross, Duane, Feustel, Drew, *in press*, Geologic training for America's astronauts: GSA Today.

[1] Heather Macdonald (College of William and Mary), Cathy Manduca (Carleton College), and Dave Mogk (Montana State University).

Tewksbury, Barbara J., Tarabees, Elhamy A., and Mehrtens, Charlotte J., 2016, Is hypogene karst a plausible model for formation of extensively developed non-tectonic synclines in Eocene limestone of the Western Desert, Egypt? in Proceedings of the DeepKarst 2016 International Conference, Carlsbad, NM, National Cave and Karst Research Institute.

DePaor, Declan G., Dordevic, Mladen M., Karabinos, Paul, Tewksbury, Barbara J., and Whitmeyer, Steven J., 2016, The fold analysis challenge: a virtual globe-based educational resource: Journal of Structural Geology.

Tewksbury, Barbara J., Hogan, John P., Kattenhorn, Simon A., Mehrtens, Charlotte J., and Tarabees, Elhamy A., 2014, Polygonal faults in chalk: insights from extensive exposures of the Khoman Formation, Western Desert, Egypt: Geology, v. 42, no. 6, p. 479-482 and Data Repository Item 2014165. *Also Research Focus piece on our work: Cartwright, Joe., 2014, Are outcrop studies the key to understanding the origins of polygonal fault systems? Geology, v. 42, no. 6, p. 559-560.*

Tewksbury, Barbara J., Hogan, John P., Kattenhorn, Simon A., Mehrtens, Charlotte J., and Tarabees, Elhamy A., 2014, Forum reply to Polygonal faults in chalk: insights from extensive exposures of the Khoman Formation, Western Desert, Egypt: Geology, v. 42, p. e345.

Tewksbury, Barbara J., Manduca, Cathryn A., Macdonald, R. Heather, and Mogk, David G., 2013, Geoscience education for the Anthropocene: Geological Society of America Special Paper 501, 125th Anniversary Volume, p. 189-201.

Tewksbury, Barbara J., Dokmak, Asmaa A.K., Tarabees, Elhamy A., and Mansour, Ahmed S., 2012, Google Earth and geologic research in remote regions of the developing world: an example from the Western Desert of Egypt: *in,* Whitmeyer, Steven J., Bailey, John E., De Paor, Declan G., and Ornduff, Tina, eds., Google Earth and Virtual Visualizations in Geoscience Education and Research: Boulder, CO, Geological Society of America Special Paper 492, Chapter 2, p. 23-36.

Tewksbury, Barbara J., 2012, Lessons from Apollo: what do you want your students to be able to do, and how will you get them there? *in*, Williams, Ernest H. Jr., ed., Pathways to Excellence in Teaching: Clinton, NY, Couper Press, p. 21-33.

Wysession, Michael, Taber, John, Budd, David, Campbell, Karen, Conklin, Martha, LaDue, Nicole, Lewis, Gary, Raynolds, Robert, Ridky, Robert, Ross, Robert, Tewksbury, Barbara, and Tuddenham, Peter, 2009, Earth Science Literacy Principles: NSF-funded, community-based initiative to develop a set of Earth Science Literacy Principles; the principles were published in spring 2009 and widely distributed (http://www.earthscienceliteracy.org/); the authors listed above are the Steering Committee for the project.

Tewksbury, Barbara J., 2008, Course design tutorial: reviewed and accepted for the MERLOT (Multimedia Educational Resource for Learning and Online Teaching) online collection (the equivalent of a published paper); http://www.merlot.org/merlot/viewMaterial.htm?id=329336

Tewksbury, Barbara J., 2008, More than just a workforce issue: teaching geoscience for the future: Leading Edge, 27, no. 10, p. 1372-1375

Bralower, Timothy, Easterling, William, Geissman, John, Savina, Mary, Tewksbury, Barbara, Feiss, Geoffrey, Macdonald, Heather, Rhodes, Dallas D., 2008, Accreditation; wrong path for the geosciences: GSA Today, v.18, no. 10, p. 52-53.

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.

Macdonald, R.H., Manduca, C.A., Mogk, D.W., Tewksbury, B.J., 2005, On the Cutting Edge: Improving learning by enhancing teaching in the geosciences: *in* About Invention and Impact: Building Excellence in Undergraduate STEM (Science, Technology, Engineering, and Mathematics) Education: Proceedings of an April 2004 Conference, Co-sponsored by the National Science Foundation (NSF) Division of Undergraduate Education (DUE) and the American Association for the Advancement of Science (AAAS).

Macdonald, R.H., Manduca, C.A., Mogk, D.W., Tewksbury, B.J.,, 2005, Teaching methods in undergraduate geoscience courses: results of the 2004 *On the Cutting Edge* survey of U.S. faculty: Journal of Geoscience Education, v. 53, p. 237-252.

Macdonald, R.H, Manduca, C.A., Mogk, D.W., and. Tewksbury, B., 2004, On the Cutting Edge: Leadership Development in the Geosciences: Project Kaleidoscope Volume IV: What Works, What Matters, What Lasts,

posted July 23 in The work of disciplinary societies in identifying and nurturing faculty leaders http://www.pkal.org/template2.cfm?c_id=1364;

http://www.pkal.org/documents/manduca-et-al_on-the-cutting-edge.pdf

Tewksbury, Barbara J. 2002, The geology and development of modern Africa (course materials for a SENCER model course): American Association of Colleges and Universities; 200 Mb (approximately 300 pages) on CD-ROM.

Tewksbury, Barbara J, 1999, Recruiting geoscience majors for the 21st century: Geotimes, v. 44, no. 9, p. 19-22.

Tewksbury, Barbara J., 1999, Beyond hazards and disasters – teaching students geoscience by probing the underlying influence of geology on human events: Science and Education, v. 8, p. 645-663.

Prothero, Bill, Ghiorso, Mark, Ramamurthy, Mohan, Richardson, Randy, Stanesco, Jack, Sternberg, Rob, Stout, Dorothy, and Tewksbury, Barbara, 1996, How should we teach Earth system Science? *in*, Ireton, M. Frank Watt, Manduca, Cathryn A., and Mogt, David W., eds., 1997, Shaping the future of undergraduate Earth Science education: Washington, DC, American Geophysical Union, p. 25-28.

Tewksbury, Barbara J, 1996, Teaching without exams – the challenges and benefits: Journal of Geoscience Education, v. 44, no. 4, p. 366-372.

Tewksbury, Barbara J., 1996, Using graphics programs to help students understand strain, in, DePaor, Declan, ed., Computer applications for teaching structural geology: NY, Elsevier Science, Inc., p. 54-73.

Tewksbury, Barbara J., 1996, Innovative teaching techniques for more effective science education – ways to actively engage students to improve learning: United Arab Emirates University, Al Ain, Abu Dhabi, UAE, Proceedings of Conference on New Methodologies and Technologies in Teaching Science.

Tewksbury, Barbara J., 1996, Teaching without exams – the challenges and benefits: United Arab Emirates University, Al Ain, Abu Dhabi, UAE, Proceedings of Conference on New Methodologies and Technologies in Teaching Science.

Tewksbury, Barbara J., 1995 Connecting the geology of Africa with the pre-historic, historical, political, and economic evolution of the continent as a strategy for teaching introductory geology and attracting minority students to geology: Journal of Geological Education, v. 43, no. 5, p. 492-496.

Tewksbury, Barbara J., 1995, Specific strategies for successfully using the "jigsaw" technique for working in groups in non-lecture-based courses: Journal of Geological Education, v. 43, no. 4, p. 322-326.

Tewksbury, Barbara J., 1993, Rethinking Grenville-age deformation in the Northwest Lowlands, New York State, *in*, Bursnall, John, ed., Field trip guidebook, 65th annual meeting of the New York State Geological Association, p. 167-201.

Tewksbury, Barbara J., 1993, Evolution of major structures in the Lowlands, *in*, Grant, Norman K., Origin and structure of the Hyde School Gneiss and sequence in the Carthage-Colton Mylonite Zone: Friends of the Grenville, Annual International Field Trip Guidebook, p. 19-23.

Tewksbury, Barbara J. and Allers, Robert H., 1992, Geology of the Mohawk and Black River Valleys, *in*, April, Richard H., ed., Field trip guidebook, 64th annual meeting of the New York State Geological Association, p. 121-154.

Tewksbury, Barbara J., 1992, Using the geology of the Indonesian Region as a basis for introductory geology labs: Journal of Geological Education, v. 40, p.

Tewksbury, Barbara J., 1991, An illustrated general model for the plate tectonic evolution of New York and New England from 1200Ma to the present, *in*, Isachsen, Y.W., Landing, E., Lauber, J.M., Rickard, L.V., and Rogers, W.B., eds., Geology of New York, a simplified account: New York State Museum/Geological Survey Educational Leaflet No. 28, p. 250-261.

Tewksbury, Barbara J., 1990, Creating HyperCard applications for interactive instruction, *in*, The Macintosh Computer in the University Curriculum, Proceedings of the 1990 Macademia Conference at the University of Vermont, p. 49-52.

Grambling, J. and Tewksbury, B., eds., 1989, Proterozoic geology of the southern Rocky Mountains: Boulder, CO, Geological Society of America Special Paper #235 (contains 15 refereed articles).

Tewksbury, B., 1989, Proterozoic geology of the Needle Mountains; a summary, *in*, Grambling, J. and Tewksbury, B., eds., Proterozoic geology of the southern Rocky Mountains: Boulder, CO, Geological Society of America Special Paper #235.

Tewksbury, B., 1986, Conjugate crenulation cleavages in the Uncompahgre Formation, Needle Mountains, Colorado: Journal of Structural Geology, v. 8, no. 2, p. 145-155.

Tewksbury, B., 1985, Revised interpretation of the age of allochthonous rocks of the Uncompahgre Formation, Needle Mountains, Colorado: Geological Society of America Bulletin, v. 96, p. 224-232.

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Tewksbury, B. and Allers, R., 1984, Geology of the Mohawk and Black River Valleys: Field Trip Guidebook for Field Trip for Earth Science Teachers held in conjunction with the 56th Annual Meeting of the New York State Geological Association, 120p.

Other Published Materials

Tewksbury, Barbara J. and Macdonald, R. Heather, 2005, *On the Cutting Edge* tutorial for designing effective and innovative courses:

http://serc.carleton.edu/NAGTWorkshops/coursedesign/tutorial/index.html

Tewksbury, Barbara and Newsome, Matthew, 2008, Making a traditional box-pleated kilt: Deansboro, NY, Celtic Dragon Press, 37p.

Tewksbury, Barbara and Stuehmeyer, Elsie, 2007, The art of kiltmaking: step-by-step instructions for making a traditional Scottish kilt (2nd printing with revisions and updates): Deansboro, NY, Celtic Dragon Press, 142p.

Tewksbury, Barbara and Stuehmeyer, Elsie, 2001, The art of kiltmaking: step-by-step instructions for making a traditional Scottish kilt: Deansboro, NY, Celtic Dragon Press, 142p.

Tewksbury, Barbara J., 2000, Geology Q & A knowledge cards: Rohnert Park, CA, Pomegranate Press, 52 cards.

Tewksbury, Barbara J., 2000, Space travel Q & A knowledge cards: Rohnert Park, CA, Pomegranate Press, 52 cards.

Papers Presented at Professional Meetings (Abstracts Refereed)

Note: student co-authors are listed in *italics*.

Tewksbury, Barbara J., Tarabees, Elhamy A., *Hanafy, Mahmoud I.*, and Mehrtens, Charlotte J., 2015, Extensively developed network of non-tectonic synclines in Eocene limestone of the Western Desert, Egypt: Geological Society of America, Abstracts with Programs, v. 47, no. 7, p. 370.

Tewksbury, Barbara J. and *McLean, Theodore J.,* 2015 Accommodating layer shrinkage and fault slip in a polygonal fault system: meso-scale structures in the Khoman Formation, Western Desert, Egypt: Geological Society of America, Abstracts with Programs, v. 47, no. 7, p. 148.

Tewksbury, Barbara J., 2015, Using high resolution imagery in Google Earth for research in remote regions: AAAS 2015 Annual Meeting, San Jose, CA, Abstract #13585 (https://aaas.confex.com/aaas/2015/webprogram/Paper13585.html)

DePaor, Declan G., Whitmeyer, Steven J., Bentley, Callan, and Team GEODE (Tewksbury is a member of Team GEODE), 2015, Interactive digital learning for geoscience students: Earthquiz and other web-hosted challenges: Geological Society of America, Abstracts with Programs, v. 47, no. 7, p. 109.

Beane, Rachel J., Hill, Tessa M, Macdonald, Heather, Tewksbury, Barbara J., Allen-King, R.M., and Yuretich, Richard F., 2015, Workshop for early career geoscience faculty: strategic planning and support at the beginning of academic careers: Geological Society of America, Abstracts with Programs, v. 47, no. 7, p. 686.

Tewksbury, Barbara J., 2014, University-level geoscience education for the 21st century: 32nd National and 1st International Geoscience Congress, Tehran, Iran (keynote address, delivered virtually, with questions answered in real time using Skype).

Tewksbury, Barbara J., Tarabees, Elhamy, Mehrtens, Charlotte, *Wolpert, Joshua A., DeGennaro, Lauren L., Dennison-Leonard, Gaela S.*, and *McLean, Theodore J*., 2014, Extensive syncline network in Eocene limestone of the Western Desert, Egypt: Regional folding? Collapsed paleokarst? Mobilization of underlying shale?: Geological Society of America, Abstracts with Programs, v. 46, no. 6, p. 154.

Tewksbury, Barbara J., Hogan, John P., and Mehrtens, Charlotte, 2014, Using online video conferencing and file sharing to run multi-institutional seminars and to bring guest speakers to the classroom: Geological Society of America, Abstracts with Programs, v. 46, no. 6, p. 736.

Tewksbury, Barbara J., 2014, Orbit to outcrop and outcrop to orbit: using the world's great sites for teaching structural geology and geologic mapping: Geological Society of America, Abstracts with Programs, v. 46, no. 6, p. 243.

Manduca, Cathryn A., Iverson, Ellen, McConnell, David A., Bruckner, Monica A., Greenseid Lija, Macdonald, R. Heather, Tewksbury, Barbara J., and Mogk, David W., 2014, On the Cutting Edge: Combining workshops and on-line resources to improve geoscience teaching: Geological Society of America, Abstracts with Programs, v. 46, no. 6, p. 600.

Tewksbury, Barbara J. and Tewksbury, David A., 2014, Land of ice and fire: summer field study in Iceland: Geological Society of America, Abstracts with Programs, v. 46, no. 6, p. 49.

Bleacher, J.E., Eppler, D.B., Tewksbury, B.J., and Helper, Mark A., 2014, Astronaut geology training: Annual Meeting of the Lunar Exploration Analysis Group, Abstracts with Programs, abs #3033.

Tewksbury, Barbara J., Hogan, John P., Kattenhorn, Simon A., Mehrtens, Charlotte J., and Tarabees, Elhamy, 2014, Insights about polygonal faults and related structures from extensive exposures of the Cretaceous Khoman Formation, Western Desert, Egypt: 3rd Biennial Structural Geology and Tectonics Forum, Colorado School of Mines, Golden, CO.

Tewksbury, Barbara J., Tarabees, Elhamy, Hogan, Kattenhorn, Simon A., and Mehrtens, Charlotte, 2013, The Desert Eyes Project part I: polygonal faults in Cretaceous chalk and enigmatic fold structures in Eocene limestones, Western Desert, Egypt: Geological Society of America, Abstracts with Programs, v. 45, no. 7, p. 160.

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Keren, Tucker T., and Tewksbury, Barbara J., 2013, Investigation of folds and faults in Eocene carbonates of the Serai Formation using satellite imagery, Western Desert, Egypt: Geological Society of America, Abstracts with Programs, v. 45, no. 7, p. 161.

Abdelsalam, Mohamed, and Tewksbury, Barbara J., 2013, Egypt: the gift of geology: Geological Society of America, Abstracts with Programs, v. 45, no. 7, p. 160.

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Tewksbury, Barbara J., Granshaw, Frank D., and Duggan-Haas, Don, 2013, From virtual field trips to geologic map interpretation: using Google Earth to teach geologic thinking and visualization: Geological Society of America, Abstracts with Programs, v. 45, no. 7, p. 368.

Tewksbury, Barbara J., Manduca, Cathryn, Mogk, David W., and Macdonald, R. Heather, 2013, Geoscience education for the Anthropocene: Geological Society of America, Abstracts with Programs, v. 45, no. 7, p. 184.

Macdonald, R. Heather, Manduca, Cathryn A., Mogk, David W., Tewksbury, Barbara J., Fox, Sean P., Beane, Rachel J., Mcconnell, David A., Wiese, Katryn, Wysession, Michael E., and The Serc Webteam, 2013, *On The Cutting Edge*

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Tewksbury, Barbara J., 2013, Using Google Earth to teach 3D visualization of structures, interpretation of geological maps, and cross section construction: Reno, NV, AAPG Hedberg Conference on 3D Structural Geologic Interpretation: Earth, Mind, and Machine, June 2013.

Tewksbury, Barbara J., Kattenhorn, Simon A., Mehrtens, Charlotte J., Hogan, John P., and El-Haddad, Abdel-Aziz, 2012, Polygonal faults and related structures in Cretaceous chalk of the Khoman Formation, Western Desert, Egypt: Geological Society of America, Abstracts with Programs, v. 44, no. 7, p. 559.

Tewksbury, Barbara J., Tarabees, Elhamy A., *Laciano, Peter J.*, and *Yu, Clifford H.*, 2012, An enigmatic system of folds and related faults in Stable Platform limestones of the Western Desert, Egypt: Geological Society of America, Abstracts with Programs, v. 44, no. 7, p. 559.

Ellis, Trevor, Hogan, John P., and Tewksbury, Barbara J., 2012, A remote sensing and field investigation of the El Kasr desert eye in the Western Desert of Egypt: Geological Society of America, Abstracts with Programs, v. 44, no. 7, p. 559.

Tewksbury, Barbara J., Kattenhorn, Simon, Tarabees, Elhamy, Hogan, John, Tewksbury-Christle, Carolyn, and Saint-Jacques, David., 2012, Polygonal patterns and desert eyes: reconnaissance study of unusual fold and fault structures in Late Cretaceous and Early Tertiary limestones of the Western Desert, Egypt: Structural Geology and Tectonics Forum, Williams College.

Tewksbury, Barbara J., 2012, The potential of Google Earth for conducting geologic research in remote regions of the world: Geology of Nile Basin Countries Conference, Alexandria, Egypt, p. 113-114.

Tewksbury, Barbara J., Hogan, John P., *Keren, Tucker T.*, Tewksbury-Christle, Carolyn M., and Mehrtens, Charlotte, 2012, Deformation bands and the expression in siliciclastic cover rocks of slip on long-lived basement faults in southern Egypt: Geology of Nile Basin Countries Conference, Alexandria, Egypt, p. 117-118.

Tewksbury, Barbara J., *Dokmak, Asmaa A.*, Tarabees, Elhamy A., Mansour, Ahmed S., 2012, A previously unrecognized system of folds and related faults in Stable Platform limestones of the El Rufuf and Drunka Formations, Western Desert, Egypt: Geology of Nile Basin Countries Conference, Alexandria, Egypt, p. 115-116.

Dokmak, Asmaa A., Tewksbury, Barbara J., Tarabees, Elhamy A., Mansour, Ahmed S., 2012, Fold and fault structures in the Upper El Rufuf and Lower Drunka Formations along the Asyut-Kharga Road, Western Desert, Egypt Geology of Nile Basin Countries Conference, Alexandria, Egypt, p. 45.

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Tewksbury, Barbara J., 1995, A strategy for attracting minority students into geology (abstr): Conference Proceedings, New York Mathematics, Science and Engineering State-wide Conference, p. 18.

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Tewksbury, Barbara J., 1994, Structural geology without lectures: strategies for a hands-on, investigative structural geology course (abstr): Geological Society of America, Abstracts with Programs, v. 26, no. 7, p. A-420.

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Tewksbury, Barbara, 1993, Strategies for successful self-teaching, peer-teaching, and independent problem-solving in upper level geology courses (abstr): Geological Society of America, Abstracts with Programs, v. 25, no. 6, p. A-46.

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Tewksbury, Barbara J. and *Kirby, Eric*, 1992, Shear fabric development in leucogranitic gneisses of the Payne Lake and Dodds Creek bodies, Muskellunge Lake Quadrangle, NY (abstr): Geological Society of America Abstracts with Programs, v. 24, no. 3, p. 80.

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Tewksbury, Dave and Tewksbury, Barbara, 1992, Inexpensive low-altitude stereo aerial photography (abstr): Geological Society of America Abstracts with Programs, v. 24, no. 3, p. 80.

Tewksbury, Barbara J., 1991, Using the geology of the Indonesian Region as a basis for introductory geology labs (abstr): Geological Society of America Abstracts with Programs, v. 23 (5), p. A97.

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Tewksbury, B.J., *Sawyko, L.T.*, and *Cunningham, A.D.*, 1990, Reconnaissance structural geology of the Payne Lake alaskitic gneiss body, Muskellunge Lake Quadrangle, New York: Geological Society of America Abstracts with Programs, v. 22, p. 74.

Tewksbury, B.J. and Geist, D.J., 1989, HyperCard applications in structural geology and petrology: Geological Society of America Abstracts with Programs, v. 21 (6), p. A247.

Tewksbury, B., 1986, Proterozoic geology of the Needle Mountains, southwest Colorado, and comparisons with the Proterozoic geology of Central Colorado: International Field Conference on Proterozoic Geology and Geochemistry, Abstract and Field Guide Volume, p. 124-125.

Tewksbury, B. and *Murray, R.*, 1985, Similarities in deformational style as evidence for correlation between the type section and Needle Mountains portions of the Proterozoic Uncompahgre Formation, southwestern Colorado: Geological Society of America Abstracts with Programs, v. 17, #4, p. 267.

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Tewksbury, B., 1982, Polyphase deformation in allochthonous rocks of the Precambrian Uncompahgre Formation, Needle Mountains, southwestern Colorado: Geological Society of America Abstracts with Programs, v. 14, no. 6, p. 351-352.

Grants:

NSF (DUE 2013): Senior personnel on 4-year project GEODE: Google Earth for Online and Distance Education (PI Declan DePaor, Old Dominion University grant); subcontract for $52,192.00.

NSF (IRES 2010): Lead PI for a $150,000, 3-year research grant entitled Collaborative Research: Desert Eyes: Origin and Evolution of Enigmatic Domes and Basins in the Stable Platform of Egypt. Co-PIs: John Hogan and Kelly Liu (Missouri University of Science and Technology).

NSF (DUE, CCLI Phase III, 2010): Co-PI on for a $3 million, 5-year grant entitled Collaborative Research: On the Cutting Edge: A Community Resource Transforming Geoscience Education, the aim of which is to continue development of professional development opportunities for geoscience faculty as part of the broader efforts to reform geoscience education in the U.S. Co-PIs: R. Heather Macdonald (College of William and Mary), and Cathy Manduca (Carleton College)

NSF (DUE, CCLI-ND, 2006): Co-PI on for a $2 million, 3-year grant entitled Collaborative Research: *On the Cutting Edge*: Building a Culture in Which the Cycle of Educational Innovation Can Thrive, the aim of which is to continue development of professional development opportunities for geoscience faculty as part of the broader efforts to reform geoscience education in the U.S. Co-PIs: R. Heather Macdonald (College of William and Mary), and Cathy Manduca (Carleton College)

NSF (DUE, CCLI-ND, 2002): Co-PI on for a $4.2 million, 5-year grant entitled Collaborative Project: Combining Real and Virtual Professional Development for Geoscience Faculty and Graduate Students, the aim of which is to develop the next generation of professional development opportunities for geoscience faculty as part of the broader efforts to reform geoscience education in the U.S. Co-PIs: R. Heather Macdonald (College of William and Mary), Cathy Manduca (Carleton College), and David Mogk (Montana State University).

NSF (DUE, CCLI-AI, 2001): Co-PI on grant for $75,000 to develop a computerized, networked microscopy classroom at Hamilton College for study of geologic materials in polarized light. Co-PIs: David Bailey and Eugene Domack (Hamilton College).

NSF (EHR, special projects, 2000): Co-PI on grant for $25,000 to run a planning workshop to develop programs to better integrate two-year college geoscience faculty into the broader efforts to reform geoscience education in the U.S. Co-PIs: R. Heather Macdonald (College of William and Mary) and Steven Semken (Diné College, the College of the Navajo Nation).

NSF (EHR-UFE Program, 1998): Co-PI on grant for $149,000 to provide support for the National Association of Geoscience Teachers to run 4-day workshops for early career faculty in the geosciences on teaching, research, and balancing professional and private lives. Co-PI: R. Heather Macdonald (College of William and Mary), Randy Richardson (University of Arizona); David Mogt (Montana State University), and Robert Newton (Smith College).

NSF (EHR-UFE Program, 1997): Co-PI on grant for $150,000 to provide support for the National Association of Geoscience Teachers to run day-long and summer week-long workshops on innovative teaching techniques. Co-PI: R. Heather Macdonald (College of William and Mary).

NSF (EHR-UFE Program, 1994): $105,000 to provide partial support to run the Distinguished Speaker Program of the National Association of Geology Teachers to promote innovative teaching and curricular reform. Co-PI: R. Heather Macdonald (College of William and Mary).

NSF (EHR-CCD Program, 1993): $87,253 for designing an introductory geology course on the Geology and Development of Modern Africa.

Dwight D. Eisenhower Title IIA Higher Education Competitive Mathematics and Science Inservice-Training Grant, 1993: $43,000 to run a week-long summer inservice training institute for 25 secondary school Earth science teachers.

Pew Foundation Collaborative Science Program, 1993: $4600 to fund a joint research project with Dr. James McLelland of Colgate University on the origin and deformation of leucogneisses of the Northwest Lowlands, New York State.

Dwight D. Eisenhauer Title IIA Higher Education Competitive Mathematics and Science Inservice-Training Grant, 1992: $43,000 to run a week-long summer inservice training institute for 25 secondary school Earth science teachers.

CURSOR (Council on Undergraduate Research Summer Opportunity for Research) Fellowship, 1991: $2500 to support Michelle Walvoord for summer research.

Dwight D. Eisenhauer Title IIA Higher Education Competitive Mathematics and Science Inservice-Training Grant, 1991: $35,000 to run a week-long summer inservice training institute for 20 secondary school Earth science teachers.

NSF (USEME-ILI Program, 1989): $85,000 for acquisition of modern X-ray diffraction and X-ray fluorescence instrumentation. Co-PI was Dennis Geist.

Pew Foundation Collaborative Science Program, 1988: $21,500 to fund a joint project between Union, St. Lawrence, Cornell, and Hamilton to write a new set of labs for Physical Geology and to develop computer applications for those labs.

Unpublished Manuscripts

Tewksbury, Barbara J., 1997, Geologic field guide to Iceland: 100p.

Tewksbury, Barbara J., and Macdonald, R. Heather, 1996, Innovative and effective teaching in the geosciences: a workshop manual with examples: 90p.

Tewksbury, Barbara J., 1995, The geology and development of modern Africa – a manual of course materials for introductory geology: 250p.

Tewksbury, Barbara J., 1995, Strategies for moving away from lectures – a workshop on innovative teaching in the geosciences: 40p.

Tormey, Brian, Sigurdsson, Haraldur, Jóhanesson, Haukur, Larsen, Gudrun, Tewksbury, Barbara, Williams, Richard, and Young, Kirby, 1994, Iceland: hot spot on the edge of the Arctic: Field Guide for NAGT/GSA Field trip to Iceland, 87p.

Tewksbury, Barbara J., 1994, Description of the 1994 NAGT poster of the geologic history of the Earth, Moon, Mars, and Venus, with activities for students K through college: 10p.

Tewksbury, Barbara J., 1991, Analysis of the tectonics of the Indonesian Region – a lab manual for introductory geology: 140p.

Tewksbury, Barbara J., 1990, Working with HyperCard, a tutorial for creating HyperCard applications: 18p.

Tewksbury, B., 1981, Polyphase deformation and contact relationships of the Precambrian Uncompahgre Formation, Needle Mountains, southwestern Colorado [PhD dissertation]: Boulder, CO, University of Colorado, 392p.

Tewksbury, B., 1981, Field guide, Iceland summer study program: School for Field Studies, 60p.

Tewksbury, B., 1980, Field guide, Iceland summer study program: Hamilton College, 65p.

Tewksbury, B., 1980, Bibliography of Icelandic geology, 1948-1980, including over 700 entries for articles and books in English on the geology of Iceland.

Keynote Talks, Invited Workshops, Consultations, and Institutes Given:

2016:

Invited banquet keynote speaker at international DeepKarst 2016 Conference, Is hypogene karst a plausible model for the formation of extensively developed non-tectonic synclines in Eocene limestone of the Western Desert, Egypt? Carlsbad, NM, April 2016

Invited talk, student chapter of AAPG, Alexandria University, Egypt, Writing effective papers and abstracts, delivered via Skype, March 2016.

Invited panelist and speaker at the Heads & Chairs Summit on the Future of Geoscience Undergraduate Education, University of Texas at Austin, January 2016

2015:

4-day NSF-funded workshop on Preparing for an Academic Career in the Geosciences, developer and leader, held at University of Wisconsin, Madison, June/July 2015; web site at:
http://serc.carleton.edu/NAGTWorkshops/careerprep2015/index.html

field instructor for NASA geology field training for engineers and managers, Jemez Mountains, September 2015

invited talk at Rutgers University, Polygonal patterns and desert eyes: the origin of enigmatic (and beautiful!) structures in the Western Desert of Egypt, March 2015

external review of the Department of Geoscience at Indiana University of Pennsylvania, April 2015

2014:

planning team to develop the classroom and field training for the 2013 astronaut candidate class

keynote address for the 86th annual meeting of the New York State Geological Association: From Enigmatic Structures in the Western Desert of Egypt to Training NASA Astronauts: Using Google Earth as a Tool for Research and Teaching; October 2014.

invited workshops on Designing Effective and Innovative Courses and on Teaching Strategies for Engaging Students in the Classroom, Western Washington University, November, 2014.

invited workshop on Designing Effective and Innovative Courses, Colorado School of Mines, November, 2014.

invited workshop on Practical and Effective Teaching Strategies for Engaging Students Actively in the Classroom, plus department consultation on curriculum and recruiting, University of Utah, March 2014.

invited workshop on Practical and Effective Teaching Strategies for Engaging Students Actively in the Classroom, Syracuse University, April 2014.

invited workshop, Teaching with Visible Geology, an interactive online tool for visualizing 3D geologic block models, jointly taught with Rowen Cockett, 3rd Biennial Structural Geology and Tectonics Forum, Colorado School of Mines, Golden, CO, June 2014.

4-day NSF-funded workshop on Preparing for an Academic Career in the Geosciences, developer and leader, held at University of Pittsburgh, June/July 2014; web site at:
http://serc.carleton.edu/NAGTWorkshops/careerprep2014/index.html

invited workshop at the 2014 SENCER Summer Institute: Course design, implementation, and assessment; University of North Carolina, Asheville, July 2014.

invited talks at James Madison University, Syracuse University, and ConocoPhiliips (Houston): Desert Eyes: the Origin and Evolution of Enigmatic Domes and Basins in the Western Desert of Egypt, January, April, and June, 2014.

2013:

planning team to develop the classroom and field training for the 2013 astronaut candidate class

keynote address at the 2013 SENCER Summer Institute, Santa Clara, California, July 2013: You Can Take It With You: Goal Setting, Planning, Practice, and Connection Making in the Service of Transformative Learning.

5-day NSF-funded workshop on Teaching Hydrogeology, Soils, and Low Temperature Geochemistry in the 21st Century, June 2013; University of New Mexico, Albuquerque, NM; developer and leader, web site at http://serc.carleton.edu/NAGTWorkshops/hydrogeo/HSG2013/index.html http://serc.carleton.edu/NAGTWorkshops/hydrogeo/index.html

4-session online workshop on Effective Strategies for Undergraduate Geoscience Teaching: A Series of Webinars for Faculty, Post-docs, and Graduate Students; organizer, presenter for webinar on the jigsaw technique; web site at: http://serc.carleton.edu/NAGTWorkshops/careerdev/AcademicCareerTeach2013/index.html

keynote address and workshop at Great Lakes Stewardship Conference at Case Western Reserve University, March 2013.

invited 1-day workshops on Designing Effective and Innovative Courses and Designing Effective Assignments and Activities; University of Illinois, Chicago, November 2013.

external review of the University of Minnesota, Duluth Geology Department, April 2013.

invited talks at University of Illinois, Chicago, Colorado School of Mines, Buffalo Geological Society, and Rochester Academy of Sciences: Desert Eyes: the Origin and Evolution of Enigmatic Domes and Basins in the Western Desert of Egypt, May, July, November, and December 2013.

2012:

field instructor for NASA Astronaut Geology Boot Camp, San Francisco Volcanic Field, July 21-27, 2012.

keynote address at the 2012 SENCER Summer Institute, Santa Clara, California, July 2012: Real STEM Education: It's Not Just What You Know But What You Can *DO* With What You Know; July 2012.

5-day NSF-funded workshop on Teaching Structural Geology, Geophysics, and Tectonics in the 21st Century, July 2012; developer and leader, web site at http://serc.carleton.edu/NAGTWorkshops/structure/SGT2012/index.html http://serc.carleton.edu/NAGTWorkshops/structure/index.html

5-session online workshop on Designing Mineralogy, Petrology, and Geochemistry courses, March-October, 2012 developer and leader, web site at http://serc.carleton.edu/NAGTWorkshops/coursedesign2012/index.html

4-day workshop on the potential of LiDAR for geological and archaeological research in Egypt; National Authority for Space Sciences and Remote Sensing, Cairo, Egypt, January 2012; organizer and co-convener.

2 invited talks at Aswan University, Aswan Egypt, and at the National Authority for Space Sciences and Remote Sensing, Cairo, Egypt: Desert Eyes: the Origin and Evolution of Enigmatic Domes and Basins in the Western Desert of Egypt, January 2012.

invited 2-day workshops on Designing Effective and Innovative Courses, SUNY Geneseo, February and April, 2012 and University of Dayton, May 2012.

invited webinar presenter on Designing Effective and Innovative Courses for the *On the Cutting Edge* webinar series on Pursuing and Academic Career in the Geosciences, April 2012, web page at http://serc.carleton.edu/NAGTWorkshops/careerdev/AcademicCareer2012/index.html

external review of St. Thomas University Department of Geology, February 2012.

invited talks at University of Vermont and Middlebury College: Desert Eyes: the Origin and Evolution of Enigmatic Domes and Basins in the Western Desert of Egypt, April 2012

2011:

3-day workshop on developing web resources for using Google Earth to teach geoscience, August 2011; developer and leader.

keynote address at the 2011 SENCER Summer Institute, Indianapolis: Making it Work: Interdisciplinary and Community-Based Courses, July 2011.

4-day workshop Preparing for an Academic Career in the Geosciences, developer and leader, held at University of Nebraska, Lincoln, June 2011; web site at: http://serc.carleton.edu/NAGTWorkshops/careerprep2011/index.html

invited one-day workshop on Designing Effective and Innovative Courses, Wesleyan College, November, 2011.

two invited 2-day workshops on Designing Effective and Innovative Courses, one at Muhlenberg College and one at New Jersey City University, May 2011.

invited speaker, The Potential of Google Earth for Doing Geological Research in Remote Areas: An Example from the Western Desert of Egypt, GIS/SIG 20th Annual Spatial/Digital Mapping Conference, Rochester, NY April 2011.

invited seminar, SENCER: What is it and How it can Change the Academic Culture, plus a one-day consultation on interdisciplinary cooperation; United States Military Academy at West Point, March 2011.

5-session online workshop on Designing GIS and Remote Sensing Courses, Modules, and Activities for Teaching Geoscience Students, March-August 2011 developer and leader, web site at http://serc.carleton.edu/NAGTWorkshops/coursedesign2011/index.html

invited inaugural on-line training webinar for the NY State GIS Association: A Simple Example of Working with LiDAR Data Using ArcGIS & 3D Analyst, March 2011; available on line at: http://nysgis.org/pages/Video.aspx

invited talk at University of Buffalo: Desert Eyes: the Origin and Evolution of Enigmatic Domes and Basins in the Western Desert of Egypt, March 2011.

External review of Wheaton College Geology Department, October 2011.

External review of Bates College Department of Geology, February 2011.

2010:

1-day invited workshop at NASA to plan effective geoscience training for the current NASA astronaut candidate class; developer and leader for the workshop, February 2010.

2-day invited workshop on Designing Effective and Innovative Courses at Harold Washington College, Chicago; developer and leader March 2010.

1-day mini workshop on Designing Effective Assignments and Activities, at the Rochester Institute of Technology, Rochester, NY; developer and leader, May 2010.

invited talk at Alexandria University, Egypt, The potential of Google Earth to transform research in the remote Western Desert of Egypt, December 2010.

1-day invited workshop at the University of the Witwatersrand, Johannesburg, South Afirca, on Designing Effective and Innovative Courses, September 2010.

5-day NSF-funded workshop on Teaching Geoscience Using GIS and Remote Sensing in the 21st Century, August 2010; developer and leader, web site at http://serc.carleton.edu/NAGTWorkshops/gis/index.html http://serc.carleton.edu/NAGTWorkshops/gis10/index.html

4-day online workshop on Designing Effective and Innovative Courses in the Geosciences, June 2010, developer and leader, web site at http://serc.carleton.edu/NAGTWorkshops/coursedesign2010/index.html

Keynote address at the 2010 SENCER Summer Institute, Asheville, NC,: Designing Effective and Innovative Assignments, August 2010.

1-day invited workshop on designing effective assignments and activities at the 2010 SENCER Summer Institute, Asheville, NC, August 2010.

2009:

5-day NSF-funded workshop on Teaching Paleontology in the 21st Century, July 2009; developer and leader, web site at http://serc.carleton.edu/NAGTWorkshops/paleo/index.html

http://serc.carleton.edu/NAGTWorkshops/paleo/activities/25599.html

2-day invited workshop on effective and innovative course design at Case Western Reserve University, March 2009.

2 invited talks on effective and innovative course and assignment design at Missouri University of Science and Technology, March 2009

Keynote address at the 2009 SENCER Summer Institute, Chicago,: Designing Effective and Innovative Assignments, August 2009.

1-day invited workshop on designing effective assignments and activities at the 2009 SENCER Summer Institute, Chicago, August 2009.

3 days of invited workshops, talks, and consultations on designing effective and innovative courses and assignments, University of Cincinnati, October, 2009.

2008:

5-day NSF-funded workshop on Teaching Geomorphology in the 21st Century, July 2008; developer and leader, web site at
http://serc.carleton.edu/NAGTWorkshops/geomorph/index.html
http://serc.carleton.edu/NAGTWorkshops/geomorph/activities/25599.html

4-day NSF-funded workshop on Teaching Introductory Geoscience in the 21st Century, at St. Olaf College, July 2008; co-director and presenter
http://serc.carleton.edu/NAGTWorkshops/intro/index.html
http://serc.carleton.edu/NAGTWorkshops/intro/activities/25063.html
http://serc.carleton.edu/NAGTWorkshops/intro/activities/25066.html
http://serc.carleton.edu/NAGTWorkshops/intro/activities/25078.html
http://serc.carleton.edu/NAGTWorkshops/intro/activities/25079.html

2-day NSF-funded workshop on Urban Students, Urban Issues: Opportunities and Challenges for Teaching Geoscience Courses, Brooklyn College and the American Museum of Natural History, April 2008; co-director, presenter, and developer of web site
http://serc.carleton.edu/NAGTWorkshops/urban/index.html

4-day invited workshop on effective and innovative course design at Roanoke College, May 2008.

Keynote address at the 2008 SENCER Summer Institute, San Jose, California: Designing Effective and Innovative Assignments, August 2008.

2-day invited workshop on effective and innovative course design at the 2008 SENCER Summer Institute, San Jose, California, August 2008.

1-day invited workshop on Teaching Structural Geology and Petrology in the 21st Century, Houston, October 2008.

Keynote address at 3-day workshop for department chairs, Wesleyan University, August 2008

1-day invited workshop for graduate TAs at Columbia University on designing effective assignments and assessments for students; August 2008.

Invited graduation address at Virginia Tech, May 2008

Invited talk on integrating GIS across the geoscience curriculum; Utica GIS User's Group meeting, August, 2008

Invited talk at the Rome Academy of Sciences on tsunami, September 2008

2007:

5-day NSF-funded workshop on Effective and Innovative Course Design in the Geosciences, at Hamilton College, July 2007; co-director and presenter
(http://serc.carleton.edu/NAGTWorkshops/coursedesign/index.htm l).

5-day NSF-funded workshop on Teaching Geophysics in the 21st Century at Camp Davis, Jackson Hole, Wyoming, August 2007; co-director and presenter
(http://serc.carleton.edu/NAGTWorkshops/geophysics/index.html).

Four-day NSF-funded online workshop on Effective and Innovative Course Design in the Geosciences, July-August 2007; developer and leader, web site at

http://serc.carleton.edu/NAGTWorkshops/coursedesign06/online/index.html using the tutorial I developed at http://serc.carleton.edu/NAGTWorkshops/coursedesign/tutorial/index.html

Invited talk on creating innovative and effective assignments and activities using Earthscope data, Earthscope Project National Meeting, Monterey, California, April 2007.

One-day invited workshop on effective and innovative course design (interdisciplinary) at University of Cincinnati, February 2007.

One-day invited workshop on effective and innovative course design (interdisciplinary) at Hofstra University, March 2007.

Invited talk and four day workshop on effective and innovative course design (interdisciplinary) at RIT, March and June, 2007.

Keynote address at the 2007 SENCER Summer Institute, Portland, Maine: Designing a SENCER Course: Don't Just Beat it to Fit and Paint it to Match, August 2007.

2-day invited workshop on effective and innovative course design at the 2007 SENCER Summer Institute, Portland, Maine, August 2007.

Invited talk and two-day workshop on effective and innovative course design (interdisciplinary) at Georgia Southern University, August 2007.

Invited talk and one-day workshop on effective and innovative course design (interdisciplinary) at Denison College, August 2007.

Invited talk and workshop on effective and innovative course design (interdisciplinary) for the TEAGLE project In Roanoke, Virginia, October 2007.

Invited talk on recruiting geoscience majors, workshop on strengthening geoscience departments, Geological Society of America Annual National meeting, October 2007.

2006:

5-day NSF-funded workshop on Effective and Innovative Course Design in the Geosciences, at College of the Siskiyous, June 2006; co-director and presenter (http://serc.carleton.edu/NAGTWorkshops/coursedesign/index.html).

Four-day NSF-funded online workshop on Effective and Innovative Course Design in the Geosciences, July 2006; developer and leader, web site at http://serc.carleton.edu/NAGTWorkshops/coursedesign05/online/index.html using the tutorial I developed at http://serc.carleton.edu/NAGTWorkshops/coursedesign/tutorial/index.html

Keynote address at the 2006 SENCER Summer Institute, San Jose, California: *Designing a SENCER Course: Don't Just Beat it to Fit and Paint it to Match*, August 2006.

1-day invited workshop on effective and innovative course design at the 2006 SENCER Summer Institute, San Jose, California, August 2006.

Invited talk and workshop on effective and innovative course design (interdisciplinary) at Wofford College, Spartanburg, SC, August 2006.

Invited talk at RIT on course design, October 2006.

Lecture, Glaciers? On Mars? There's Ice in Them Thar Hills, Hamilton College, September 2006.

2005-06:

3-day NSF-funded workshop on Discoveries from Mars: Using a Planetary Perspective to Enhance Undergraduate Geoscience Courses, Mars Space Flight Facility, Arizona State University, April 2006; co-director, presenter, and developer of web site (http://serc.carleton.edu/NAGTWorkshops/mars/index.html)

6-day NSF-funded workshop on Teaching Hydrogeology in the 21st Century at University of Nebraska, July 2005; co-director, presenter, and developer of web site (http://serc.carleton.edu/NAGTWorkshops/hydrogeo/index.html).

5-day NSF-funded workshop on Effective and Innovative Course Design in the Geosciences, at Georgia Southern University, June 2005; co-director and presenter (http://serc.carleton.edu/NAGTWorkshops/coursedesign/index.html).

Month-long NSF-funded online workshop on Effective and Innovative Course Design in the Geosciences, June 2005; developer and leader, web site at http://serc.carleton.edu/NAGTWorkshops/coursedesign05/online/index.html using the tutorial I developed at http://serc.carleton.edu/NAGTWorkshops/coursedesign/tutorial/index.html

Keynote address at the 2005 SENCER Summer Institute, San Jose, California: *Designing a SENCER Course: Don't Just Beat it to Fit and Paint it to Match*, August 2005.

2-day invited workshop on effective and innovative course design at the 2005 SENCER Summer Institute, San Jose, California, August 2005.

Invited presentation on my SENCER model course (Geology and Development of Modern Africa) at the 2005 SENCER Summer Institute, San Jose, California, August 2005

Invited workshop at Western Kentucky University on effective and innovative course design in the geosciences, August 2005.

Invited workshop at a National Research Council meeting for awardees of the NSF Math Science Partnership Program (interdisciplinary): *Designing Effective and Innovative Courses*, September 2005.

Invited workshop on effective and innovative course design (interdisciplinary) at the annual national meeting of the Professional and Organizational Developers Network, October 2005.

Invited workshop at Skidmore College on effective and innovative course design (interdisciplinary), November 2005.

Consultation for Westat Research to evaluate the Earth Science component of the MacMillan/McGraw Hill K-6 Science Curriculum texts, January 2006.

Invited talk and workshop on effective and innovative course design (interdisciplinary) at Brooklyn College, February 2006.

Invited talk and workshop on effective and innovative course design (interdisciplinary) at Duke University, March 2006.

Invited talk and four day workshop on effective and innovative course design (interdisciplinary) at RIT, March and May, 2006.

Invited one-day workshop on effective and innovative course design (interdisciplinary) at SUNY Brockport, June, 2006.

Invited talk and workshop on effective and innovative course design (interdisciplinary) at the University of the Sciences, Philadelphia, May 2006.

2004-05:

7-day NSF-funded workshop on Teaching Structural Geology in the 21st Century at Smith College, July 2004; co-director, presenter, and developer of web site http://serc.carleton.edu/NAGTWorkshops/structure/index.html

5-day NSF-funded workshop on Effective and Innovative Course Design in the Geosciences, at Central Michigan University, July 2004; co-director and presenter (http://serc.carleton.edu/NAGTWorkshops/coursedesign04/index.html).

Keynote address at the 2004 SENCER Summer Institute, San Jose, California: *Designing a SENCER Course: Don't Just Beat it to Fit and Paint it to Match*

Invited presentation on my SENCER model course (Geology and Development of Modern Africa) at the 2004 SENCER Summer Institute, San Jose, California

Invited workshop at a National Research Council meeting for awardees of the NSF Math Science Partnership Program (interdisciplinary): *Designing Effective and Innovative Courses*

Invited workshop at Wooster College (interdisciplinary): *Designing Effective and Innovative Courses*

Invited workshop for New Jersey SENCER schools: *Designing a SENCER Course: Don't Just Beat it to Fit and Paint it to Match*

Keynote address at regional Junior Science and Humanities Symposium, Albany, NY: *When the Seas Rise Up: A Geologist's Perspective on Tsunami*

Invited workshop for local Earth Science teachers, Oneida-Madison BOCES: *Recent Discoveries on Mars*

Invited talk at the Rochester Academy of Sciences, Rochester, NY: *When the Seas Rise Up: A Geologist's Perspective on Tsunami*

Invited talks at the Mohawk Valley Astronomical Association, Utica, NY: *Field Work on an Alien Planet: the Stunning Success of the Mars Exploration Rover Program*

Invited talk for Earth Science students at Clinton High School: *Field Work on an Alien Planet: the Stunning Success of the Mars Exploration Rover Program*

Invited talk at the Central New York Professional Geologist's Association, Syracuse, NY: *When the Seas Rise Up: A Geologist's Perspective on Tsunami*

Keynote address at annual meeting, Mohawk Valley Science Teacher's Association: *When the Seas Rise Up: A Geologist's Perspective on Tsunami*

Lectures at Hamilton College: Field Work on an Alien Planet: the Stunning Success of the Mars Exploration Rover Program (Faculty Lecture Series) and When the Seas Rise Up: A Geologist's Perspective on Tsunami

2003-04:

5-day NSF-funded workshop on Effective and Innovative Course Design in the Geosciences, at Hamilton College, July 2003; co-director and presenter.

This year, I was forced to cancel several invited consultations and workshops when I developed retinal holes in both eyes and had two major eye surgeries with long recovery periods.

2002-03:

5-day NSF-funded workshop on effective teaching and career planning for early career faculty in the geosciences at the College of William and Mary, June 2003; co-director and presenter.

5-day NSF-funded workshop on Effective and Innovative Course Design in the Geosciences, at Hamilton College, July 2002; co-director and presenter.

Invited workshop on designing effective and innovative courses, with emphasis on my introductory course The Geology and Development of Modern Africa; SENCER Summer Institute of the American Association of Colleges and Universities, August, 2002, San Jose, California.

Invited workshop on inquiry-based teaching at Millersville State University annual conference on teaching excellence; August, 2002.

Consultation on curriculum development at the Department of Geography, University of Oklahoma, September, 2002.

Invited 2-day workshop at American Geological Institute to kick off development of AGIs new environmental geoscience textbook; co-leader and presenter, March 2003.

Invited workshop for local Earth Science Teachers on dating geologic events, March 2003.

Outside examiner for student senior honor thesis at Hobart and William Smith Colleges, April 2003.

External review of Geology Department at Lawrence University, Appleton, Wisconsin.

2001-02:

5-day NSF-funded workshop on effective teaching and career planning for early career faculty in the geosciences at the College of William and Mary, June 2002; co-director and presenter.

Invited workshop on effective teaching strategies at international Pathways to Change Conference, Washington, DC, April 2002.

Invited one-day workshop on active learning, Randolph-Macon College.

Invited presentations on the underlying influence of geology on human events in North Africa and Ancient Egypt, Rochester Torch Club and Rome Academy of Sciences.

2000-01:

5-day NSF-funded workshop on effective teaching and career planning for early career faculty in the geosciences at Montana State University, June 2001; co-director and presenter.

Keynote address and invited workshops on course design at the 4th Annual Conference on Improving Science and Mathematics Education, North Dakota State University.

Invited workshop on the underlying influence of geology on human events, University of Alaska at Anchorage.

Invited workshop on innovative teaching strategies at University of North Dakota, University of St. Thomas, and University of Wisconsin, Eau Claire.

5-day NSF-funded workshop on effective teaching and career planning for early career faculty in the geosciences at Montana State University, July 2000; co-director and presenter.

4-day NSF-funded workshop on improving the quantitative skills of geoscience students at the Colorado College, June 2000. Co-convener and presenter.

Invited workshop on course design at the DLESE (Digital Library for Earth System Education) Conference in June 2000 held at Montana State University.

1-day NSF-funded planning workshop to develop programs to better integrate two-year college geoscience faculty into efforts to reform geoscience education at the national level, September 2000, held at the National Science Foundation. Co-PI and presenter.

1999-00:

5-day NSF-funded workshop on effective teaching and career planning for early career faculty in the geosciences at Montana State University, July 2000; co-director and presenter.

Invited participant in the first SENCER (Science Education For New Civic Engagements & Responsibilities) workshop held at the Association of American Colleges and Universities; gave presentation on Geology 103, The Geology and Development of Modern Africa.

One-day invited lead workshop on cooperative learning at the annual STEMTEC state-wide workshop on teaching science and math, University of Massachusetts, Amherst

One-day workshops on innovative teaching techniques and course and curriculum design at Penn State University, Florida International University, University of Texas at Dallas, Southern Illinois University, Illinois State University, and University of South Carolina

One-day workshop on course design at the Annual National Meeting of the Geological Society of America, Fall 1999.

1998-99:

Two 5-day workshops on effective teaching and career planning for early career faculty in the geosciences at the College of William and Mary, January 1999 and Montana State, June 1999. Co-director and one of 4 co-presenters.

Workshop on innovative teaching techniques at the University of Arizona, Arizona State University, .San Francisco State University, and University of Alabama.

Workshop on innovative teaching techniques at the Annual National Meeting of the Geological Society of America, Fall 1997. One of 4 co-presenters.

1997-98:

Workshop on innovative teaching techniques at the Annual National Meeting of the American Geophysical Union, May 1998. One of 4 co-presenters.

5-day workshop on course re-design in the geosciences at the College of Willliam and Mary, July 1998. Co-director and one of 5 co-presenters.

Workshop on innovative teaching techniques at the University of Oregon, Arizona State University, University of Massachusetts, Long Beach City College, and Adirondack Community College.

Workshop on innovative teaching techniques at the Annual National Meeting of the Geological Society of America, Fall 1997. One of 2 co-presenters.

Workshop on innovative teaching techniques at the Annual Meeting of the Northcentral Section of the Geological Society of America, March 1998. One of 4 co-presenters.

1-day workshop on the underlying influence of geology on human events at the 1997 annual meeting of the New York State Geological Association, September 1997.

1996-97:

Workshop on effective and innovative teaching techniques at the 2nd International Conference on Geoscience Education, Hilo, Hawaii, July 1997.

5-day workshop on course re-design in the geosciences at the College of Willliam and Mary, June 1997. Co-director and one of 5 co-presenters.

Workshop on the underlying influence of geology on human events at the 1997 annual meeting of the National Association of Geoscience Teachers, Eastern Section, May 1997.

Workshop on innovative teaching techniques at the Annual Meeting of the Northeastern Section of the Geological Society of America, March 1997. One of 3 co-presenters.

Workshop on innovative teaching techniques at the Annual National Meeting of the American Geophysical Union, December 1996. One of 4 co-presenters.

Workshop on innovative teaching techniques at the Annual National Meeting of the Geological Society of America, Fall 1996. One of 3 co-presenters.

Workshops on innovative teaching techniques at the University of Vermont, the University of South Florida, Rice University, Valdosta State University, Lehigh University, and Hartwick College, fall 1996 and spring 1997.

1995-96:

Workshops on innovative teaching strategies, student assessment, and teaching portfolios at United Arab Emirates University, Al Ain, Abu Dhabi, UAE, March 1996.

Workshops on innovative teaching techniques at Cornell University, Navajo Community College, Mt. Holyoke College, Hobart and William Smith Colleges, University of Idaho, University of California at Northridge, fall 1995 and spring 1996.

Workshop on innovative teaching techniques at the Annual National Meeting of the Geological Society of America, Fall 1995. One of 4 co-presenters.

1994-95:

Workshops on innovative teaching techniques at Washington University (St. Louis), Smith College, and Jefferson County Community College, spring 1995 .

Workshop on innovative teaching techniques at the Annual National Meeting of the Geological Society of America, Fall 1994. One of 5 co-presenters.

pre-1994:

A week-long summer inservice training institute for 20 secondary school Earth science teachers, summer 1993. Co-directed with Robert Allers and Richard Winter.

A week-long summer inservice training institute for 20 secondary school Earth science teachers, summer 1992. Co-directed with Robert Allers and Timothy Koren.

A week-long summer inservice training institute for 20 secondary school Earth science teachers, summer 1991. Co-directed with Robert Allers.

"A Revised Curriculum for Introductory Geology" – an invited workshop at the Project Kaleidoscope National Colloquium held at the National Academy of Sciences, February 1991.

Working with HyperCard – invited workshops given at the Computer Center at Hamilton College, summer 1990, spring 1991, and summer 1991.