

# Sarah A. Green

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## Education

PhD (1992), Marine Chemistry, MIT/WHOI Joint Program in Oceanography, Massachusetts Institute of Technology, Cambridge, MA and Woods Hole Oceanographic Institution, Woods Hole, MA.

- Dissertation: “Applications of Fluorescence Spectroscopy to Environmental Chemistry” Advisors: Dr. N. V. Blough (WHOI) and Prof. F. M. M. Morel (MIT)

BA (1983), Chemistry, minor in Mathematics, University of Minnesota, Minneapolis, MN.

## Professional Experience

<b>Jefferson Science Fellow</b> , US Department of State, Bureau of East Asia-Pacific Affairs	2013–2014
<b>Professor</b> , Department of Chemistry, Michigan Technological University	2006–present
<b>Chair</b> , Department of Chemistry, Michigan Technological University	2004–2013
<b>Associate Professor</b> , Department of Chemistry, Michigan Technological University	2000–2006
<b>Visiting Scientist</b> , Consiglio Nazionale delle Ricerche, Istituto di Biofisica, Area di Ricerca di Pisa	2003, Jan–June
<b>Assistant Professor</b> , Department of Chemistry, Michigan Technological University	1994–2000
<b>Postdoctoral Fellow</b> , Department of Chemistry and Biochemistry, University of Texas, Austin; advisor: Marye Anne Fox	1992–1994
<b>Research and Teaching Assistant</b> , Massachusetts Institute of Technology	1985–1986
<b>Stagi�re</b> , Centre National de la Recherche Scientifique, Cr�nenbourg, France	1983–1984

## Other Professional Activities

Co-vice chair, Scientific Advisory Panel on the Sixth Global Environmental Outlook (GEO-6), United Nations Environment Programme	2015–2019
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Member, Green Chemistry Roundtable, State of Michigan Green Chemistry Governor's Awards Committee Education Workgroup (2012-present)	2008–2017
Board of Directors, Council for Chemical Research	2010–2014
Chair, Upper Peninsula Local Section of the American Chemical Society	2011–2012
Director: Keweenaw Interdisciplinary Transport Experiment in Superior (KITES), an NSF/NOAA funded program (15 PIs, 9 institutions)	1997–2002
Sabbatical leave at Istituto di Biofisica, Pisa Italy, hosted by Dr. Alfredo Seritti	Spring 2003
Director: Michigan Tech Remote Sensing Institute	2001-2003
Coordinator: Women in Science and Engineering	1999-2003

## Languages

English (native), French (fluent spoken, reading; moderate writing)

## Jefferson Science Fellow Activities

- Served as Senior Science Advisor in the Bureau of East Asia and Pacific Affairs, Office of Economy Policy; responsible for engagement on environmental issues with the Asia Pacific Economic Cooperation (APEC) forum.
- APEC Oceans and Fisheries Working Group (OFWG). U.S. Delegate to OFWG annual meeting, Qingdao, China (May 2014), APEC Blue Economy Forum, Xiamen, China (August 2014), and APEC Oceans Ministerial, Xiamen, China (August 2014)
- Initiated OFWG project “Assessing the Economic Value of Green Infrastructure in Coastal Ecosystems to Disaster Risk Reduction and Response and Coastal Resilience in the APEC region”, which received funding from APEC and USAID.
- Assisting in negotiating the Xiamen Declaration – *Towards New Partnership through Ocean Cooperation in the Asia Pacific Region*, August 2014.
- Promoted endorsement of the Minamata Convention on Mercury by the APEC Mining Task Force and the APEC Ministers Responsible for Mining, achieved in Beijing, June 2014.
- Assisted in preparing the Joint Statement of the APEC Ministers Responsible for Mining, Beijing, June 2014.
- U.S. Delegate to the APEC Chemical Dialogue, Ningbo, China (February 2014) and Beijing, China (August 2014).
- Presented talk “Michigan’s Green Chemistry Roundtable” at APEC *Chemical Dialogue Regulators’ Forum*, Beijing, China (August 2014).
- Founding member of the APEC Virtual Working Group on Marine Debris.
- Advanced U.S. priority actions on wildlife trafficking within APEC; helped obtain funding for Demand-reduction workshop in Hanoi, Vietnam (October 2014).

- U.S. Delegate to the APEC Green Development Roundtable, Tianjin, China (May 2014).
- Contributed to APEC groups Subcommittee on Standards and Conformance, Urbanization Forum, Experts Group on Illegal Logging.
- Assisted in preparations for Secretary Kerry's Our Ocean Conference (June 2014).
- Assisted in preparing and reviewing documents on climate and environmental topics for U.S – China Strategic and Economic Dialogue (2013-2014).
- Reviewed documents for Lower Mekong Initiative.
- Reviewed proposals to grant State Department funding for (1) Reducing mercury use in small scale and artisanal mining in the Philippines, (2) Sustainable Forestry in South East Asia, (3) Development of community environmental initiatives in the East Asia Pacific region.
- Attended course "Washington Statecraft" at U.S. Foreign Service Institute (September 2014).

### **Administrative Accomplishments as Chair**

- Hired nine faculty members, six of whom are women, enhancing both research productivity and diversity in the department.
- Co-founded Peace Corps Masters International program in Applied Science Education at Michigan Tech.
- Expanded undergraduate degree offerings in chemistry to include cheminformatics, pharmaceutical chemistry, and biochemistry/molecular biology.
- Established new non-departmental PhD program in Biochemistry.
- Initiated and established the first inter-departmental undergraduate degree program at Michigan Tech, requiring collaboration between biological sciences and chemistry departments.

### **Awards**

- Certificate of Appreciation, U.S. Department of State. "*For significant contributions to the President's National Strategy for Combating Wildlife trafficking, and raising the profile of wildlife trafficking as a U.S diplomatic priority and international and security concern.*" September 2014.
- Jefferson Science Fellow, U.S. Department of State, Bureau of East Asian and Pacific Affairs, Office of Economic Policy, 2013-14.
- 'Best article of 2013' prize for "Quantifying the consensus on anthropogenic global warming in the scientific literature" (Cook, Nuccitelli, Green, et al., 2013), awarded by the Editorial board of *Environmental Research Letters*; also included in the 'Highlights of 2013' collection. Paper downloaded >1 million times; most downloaded paper from IOP. Results of consensus paper were tweeted by President Obama and Secretary Kerry, and cited by John Oliver on comedy show Last Week Tonight (May 11, 2014).
- Chandler-Misener Award, 2011 (with co-authors W.C. Kerfoot, et al.)

## **Special Sessions Chaired at Professional Meetings**

- *American Geophysical Union – Ocean Sciences Meeting*, (Honolulu, Hawaii, Jan. 2002), “Transport and transformation of biogeochemically important materials in coastal waters.”
- *American Geophysical Union – Ocean Sciences Meeting*, (San Antonio, Jan. 2000, with Elise Ralph), “Cross Margin Transport in the Great Lakes and Coastal Oceans.”
- *International Association for Great Lakes Research*, (Cleveland, May, 1999, with Dave Schwab).

## **Professional Affiliations**

- American Association for the Advancement of Science
- American Geophysical Union
- American Chemical Society
- American Society for Limnology and Oceanography
- Union of Concerned Scientists
- National Center for Science Education

## **Reviewed for the Following Professional Journals or Agencies**

### **Professional Journals**

- Environmental Science and Technology
- ACS Sustainable Chemistry & Engineering
- Aquatic Sciences
- Physical Chemistry Chemical Physics
- Journal of the American Chemical Society
- Journal of Physical Chemistry
- Geophysica Cosmochimica Acta
- Limnology and Oceanography
- Limnology and Oceanography Methods
- Environmental Monitoring and Assessment
- Science of the Total Environment
- Environmental Health Perspective
- Marine Chemistry
- Atmospheric Chemistry
- Water Resources Research
- Environmental Analytical Chemistry

## **Book Reviews**

- Choice

## **Funding Agencies**

- National Science Foundation
- National Atmospheric and Aeronautical Administration
- Sea Grant
- U.S. Civilian Research and Development Foundation
- Michigan Tech Research Excellence Fund (Seed Grants)

## **Funding Panels**

- NASA Panel: Aquatic section, Carbon Cycle Science, November 2014.
- NSF Panel: Centers for Ocean Science Education Excellence, April 22-23, 2002.
- NASA Panel: Aquatic section, Carbon Cycle Science, May 27-29, 2004.
- Environmental Protection Agency, Small Business Innovation, September 14-15, 2007.
- Environmental Protection Agency, Fellowships Panel, Feb 2010.

## **Teaching**

- Developed new interdisciplinary course “Climate Science and Policy” (2015-present)
- Departmental courses in Atmospheric chemistry, Quantitative Analysis, First Year Chemistry, Preparatory Chemistry, and Environmental Organic Chemistry.
- New course “Green Chemistry: implications and applications” (Fall 2012)
- Developed new graduate course in Fluorescence Methods (Fall 2000).
- Developed new undergrad course (with lab) Introduction to Organic, Inorganic, and Biochemistry (for Environmental majors) CH1140 (spring 2001)
- Instructor in Summer Institute for secondary school science teachers (2008 and 2009).
- Faculty member for summer teachers’ program: Ecology of the Great Lake Aboard the R/V Lake Guardian (with funding from Environmental Protection Agency), three courses: July 7-13, 2002, July 5-10, 2004, July 13-14, 2006.
- Advisor for undergraduate chemistry majors, class of 2011.

## **Other Activities**

- Public presentation “Lake Superior’s history and future” at Carnegie Museum, Houghton MI (November 2014).
- Reviewed Green Chemistry projects for USAID Launch Innovation program, Nov 2014.
- Workshop on Great Lakes water levels with middle school students, Lake Superior

Water Festival, Michigan Tech (October 2014).

- Chaired visiting review committee, Large Lakes Observatory, University of Minnesota, Duluth (November 2012).
- Student poster judge, American Geophysical Union National Meeting (Dec. 2012).
- Directed the Remote Sensing Institute (now Earth, Planetary, and Space Sciences Institute) and established the template for administrative structure of all centers and institutes at Michigan Tech.
- Key committee member in the first Strategic Faculty Hiring Initiative (2007-8) at Tech, which successfully hired ten new faculty members across the university and developed the framework for additional interdisciplinary expansion hires in 2009 and 2010. Served on steering committees for subsequent SFHI initiatives on Health and Water.
- Congressional Visits Day (with Council for Chemical Research), March 2012 and April 2011.
- Invited scientist “Clean Energy Works Campaign”, Union of Concerned Scientists, January 2010 (Washington DC).
- Organized mentoring visits to Washington agencies for junior faculty (2010-1).
- Building committee: Great Lakes Research Center (2009-11).
- Advising Isle Royale National Park on Ballast Water Disinfection (2008-present).
- Co-organizer, Great Lakes Chemistry Chairs’ meetings (2010, 2011).
- National Park Service Workshop on VHS Prevention Plans, Chicago, January 2008.
- Invited scientist “Congressional education day” (climate and scientific integrity), Union of Concerned Scientists, January 2005 (Washington DC).
- Guest editor, Journal of Geophysical Research, vol 109, C10. (special section on KITES/EEGLE).
- Committee on the Advancement of Women Chemists (COACH) workshop III, American Chemical Society, March 2008 (New Orleans).
- Committee on the Advancement of Women Chemists (COACH) workshop II, American Chemical Society, February 2005 (San Diego).
- Committee on the Advancement of Women Chemists (COACH) workshop I, American Chemical Society, April 6, 2002 (Orlando).
- Invited participant at Large Lakes Workshop, Large Lakes Observatory (Duluth), July 14-16, 2002. (NSF Sponsored).
- Invited participant at Biodiversity Symposium, Ann Arbor, Nov 16-17, 2002.
- Consulted to Isle Royale National Park, Net Environmental Benefit Analysis Workshop II.
- Council on Chemical Research, Annual meetings 2005-2012.
- Participated in diversity workshops:
  - “Recruitment and retention of underrepresented students and faculty,” Dr.

- Judith Puncochar, March 14, 2002.
  - “Advancement of women in science and engineering: why so slow,” Dr. Virginia Valian, May 9, 2001.
  - Grad Ed for Minorities (GEM) with Dr. Stephanie Adams, March 21, 2005.
  - Diversity: Business in Higher Ed. With Bob Freimuth (GM), February 18, 2005.
  - Diversity session with Frank W. Hale, Ohio State, April 4, 2005.
- Met with Department of Educational Opportunity Corporate Advisory Board, May and October 2005.
- Invited and hosted Visiting Women Lecturers: Dr. Elizabeth Sikes (9/28/2001), and Dr. Kathleen Ruttenberg, (4/19/2002).
- Invited and hosted Sigma Xi Distinguished lecturer Dr. Robert Pennock (3/22/2001).
- Invited and hosted RSI lecturers: Dr. Paul Roebber (4/8/2002), Dr. John Wilkin (4/19/2002), Dr. Oscar Schofield (11/26/2001).
- Invited and hosted Great Events Lecturers (campus-wide series) Bruce Scheier (2006), Dr. Nathan Lewis (2007).
- Organized Remote Sensing Seminar series (UN4000), spring 2001, and spring 2002.

#### **University and College Committees:**

- Great Lakes Research Center Implementation Committee (current)
- Strategic Faculty Hiring Initiative (SFHI) Committees (2007, sustainability: 2009-10, health; 2011-12, water)
- SFHI Blue Ribbon Committee (2007)
- Great Lakes Research Center Building Committee (2010)
- College Council (current)
- Earth, Planetary, and Space Sciences institute advisory council
- Center for Water and Society advisory council
- Graduate Faculty Council
- Committee on Renovation of Classrooms
- Academic Tenure Committee
- Research Excellence Fund Proposal Review Committee
- Earth, Planetary, and Space Sciences Institute Advisory Committee (current)
- Center for Water and Society (current)
- Isle Royale Institute Advisory Committee

#### **Community and Outreach Activities**

- Organized Public Forum on Proposal 3: Michigan's Renewable Energy Ballot Initiative (Oct. 2012).
- Treasurer, Copper Country Guatemalan Accompaniment Project (2008-present)
- Board Member, New Power Tour (NPT), weatherization project engaging high school and college students to weatherize homes of elderly residents. (2007-present)
- Data coordinator for Houghton County Energy Efficiency Team (HEET) and NPT for Georgetown University Energy Prize competition (2014-2016).

## Consulting

- Federal Drug Administration, 1996
- Philip Morris Research Center, May 16-17, 2002

## Research Interests

Carbon cycling in the Lake Superior basin; origin and fate of organic carbon in terrestrial, lake, and marine environments; chemistry of gas-phase free radicals in smoke; detection of free radicals; fluorescence-based analytical methods; photochemical transformations of natural and anthropogenic organic compounds in the environment; optical properties and remote sensing of natural waters; photochemical reactions in snow; response of aquatic systems to climate change; integration of biological, geological, physical, and chemical data for understanding of global cycles; development of new chemical sensors for environmental applications. Communication of climate change science.

## Collaborators

Guy Meadows (MTU), Janet Herring (EWAG), Haiying Liu (MTU), Michele Miller (MTU), Paul Bergstrom (MTU), Lanrong Bi (MTU), Knut Aagaard (U Washington), Martin Auer (MTU), Nancy Auer (MTU), Judy W. Budd (MTU), Chensheng Chen (U Massachusetts), Jim Churchill (Woods Hole Oceanographic Inst), W.C. Kerfoot (MTU), Kurt Pregitzer (U Reno), Noel Urban (MTU), Anthony Vodacek (RIT).

## Graduate and Postgraduate Advisees

### Department of Chemistry Graduate Advisor

#### *Current Students*

- Nastaran Khademimoshenani

#### *Graduated Students*

- Wayne St. John (MS, 1997)
- Jaebong Jong (MS, 1998)
- Xingfang Wang (MS, 1999)
- Thomas Flicker (PhD, 2000)
- Xiaodong Ma (PhD, 2000)
- Ruiqing Qiu (MS, 2001)



- Rose Cory (MS, Environmental Engineering, 2001)
- Adrian Pishko (PhD, 2002)
- Yu Tang (PhD, 2005)
- Susan Hemme (MS, 2006)
- Rajni S. Kalavendi (MS, 2010)
- Na Hu (PhD, 2013)
- Qili Hu (PhD, 2013)
- Marian Ampadu (MS, 2018)

## **University Graduate Committees Served On**

### *Current Student Committees*

- Sidouane Patcha Lum, M.S. (Ann Brady, Humanities)
- Karl Romanowicz, MS
- Noopur Sharma, PhD. (Claudio Mazzoleni, Physics)
- Jeff Ahrens, MS, (Alex Mayer, Geology)

### *Graduated Student Committees*

- Timothy Veverica (2014) MS. (Evan Kane, Forestry)
- Yunzhu Zhao (2014) PhD. (Lynn Mazzoleni)
- Kumar Vanga Lakshman (2012). PhD (Paul Bergstrom, Electrical Engineering)
- Zezhuo (Sergio) Wang (2012). PhD (Chemistry)
- Claudia Toro Vergara (2011). MS (Paul Doskey, Forestry)
- Jeffrey LeClair (2011). MS (Lynn Mazzoleni, Chemistry)
- Kristina Denison (2011), MS, Peace Corps, (Blair Orr, School of Forestry)
- Jill Blecky (2011). PhD, (Gordon Parker, Mechanical Engineering)
- Jill Hodges (2010), PhD, (Marilyn Cooper, Rhetoric & Technical Communication)
- Steve Johnson (2010), PhD, (Pushpa Murthy, Chemistry)
- Sara Robinson (2010), PhD, (Peter Lax, Forestry)
- Soumyashree Sreehari (2010), PhD. (Rudy Luck, Chemistry)
- Karumbaiah Chappanda Nanaiah (2010). MS
- Katrina Farren (2010) PhD, (Heidi Bostic, Rhetoric & Technical Communication).
- Arunkumar Selvam (2010), PhD, (Brian Barkdoll, Environmental Eng.)
- Ganesh Kumar Arumugam (2009). (Haiying Liu, Chemistry)
- John Hribljan (2009) MS (Janice Glime, Biology)
- Mark Rowe (2009) MS.

- Sandeep Sikarwar (2008) MS.
- Jennifer Karberg (2008). PhD, (Margaret Gale, Forest Resources and Environ Science)
- Patricia Butler (2008). MS, Peace Corps, (Blair Orr, Forest Resources and Environ Science)
- Feifei Cai (2007). MS, (Haiying Liu, Chemistry)
- Linda van Diepen, (2008), PhD, (Kurt Pregitzer, Forest Resources and Environ Science)
- Anil Ekkati, (2007), PhD, (Dallas Bates, Chemistry)
- Robin M. Johnson (2006). MS, (Kurt Pregitzer, Forest Resources and Environ Science)
- Janet M. Bandeff (2006). MS, (Kurt Pregitzer, Forest Resources and Environ Science)
- Wanda I. Rodriguez (2005), MS, (Alex Meyer, Geology)
- Jason Oyadomari (2005), PhD, (Nancy Auer, Biology)
- Hanyi Li (2004), PhD, (Judy Budd, Computational Science and Engineering)
- Sonali P. Jog (2005), PhD, (Pushpa Murthy, Chemistry)
- Bakul Dhagat (2005), PhD, (Pushpa Murthy, Chemistry)
- Hanyi Li (2004), PhD, (Judy Wells Budd, Computational Science and Engineering)
- Yingtao Chai (2004), PhD, (Noel Urban, Environmental Engineering)
- Beibei Zhu (2003), MS, (Judith Perlinger, Environmental Engineering)
- Min Xiao (2003), PhD, (Martin Auer, Environmental Engineering)
- Xuefei Lu (2003), MS, (Noel Urban, Environmental Engineering)
- Ke Li (2003), PhD, (John Crittenden, Environmental Engineering)
- Ge Wang (2002), PhD, (Rudy Luck, Chemistry)
- Carla J. Volkmann (2002), MS, (Pushpa Murthy, Chemistry)
- Jaebong Jeong (2002), PhD, (Noel Urban, Environmental Engineering)
- Amy Hamlin (2002), PhD, (Rich Honrath, Environmental Engineering)
- Karana Carlborn (2002), MS, (Pat Heiden, Chemistry)
- Daniel Scott Warrington (2001), MS, (Judy Wells Budd, Geological Eng and Sciences).
- Raghuraman Venkatapathy (2001), PhD, (Judith Perlinger, Environ. Eng)
- Xiaofen Li (2001), MS, (Dallas Bates, Chemistry)
- Evan Scott Kane (2001), MS, (Kurt Pregitzer, Forestry)

- Dun Li (2000), (Pat Heiden, Chemistry)
- Thomas L. Gatzke (2000), MS, Type B, (Martin Auer, Environmental Eng)
- Sudipto Das (2000), (Pat Heiden, Chemistry)
- Rob Cookman (2000), MS, (Gregg Bluth, Geology)
- Defne S. Apul (2000), MS, (Noel Urban, Environmental Engineering)
- Gretchen Wilson (1999), MS, (Noel Urban, Environmental Engineering)
- Dorothy Quirk (1999), MS, (Alison K. Hogland, Industrial Archeology)
- Hong Xiang (1998), MS, (Dallas Bates, Chemistry)
- Haasun Wu (1998), PhD, (Pat Heiden, Chemistry)
- Miejong Jeong (1998), PhD, (David Chesney, Chemistry)
- Shumin Hu (1997), MS, (John Crittenden, Civil & Environmental)
- Naresh Babhwar (1997), PhD, (Richard Honrath, Civil & Environmental)
- Zhonghua (Michael) Zhang (1996), PhD, (Dallas Bates, Chemistry)
- Rick Wagner (1996), MS, (Stephen Bowen, Biology)
- Ying-hua Mei (1996), MS, (Mendenhall, Chemistry)
- Cynthia C. Cusack (1995), MS, (Jim Mihelcic, Environmental Engineering)

## **Undergraduate Research Students**

- Karin Wolken
- Rachel Fouts
- Nick White
- Na Mo
- Alexandria Purtell
- Chelsea Cross
- Markku Savolainen
- Annie Putman (EPA fellow)
- Sarah Weinreis
- Irene Holl
- Kate Rodrbacher
- Meg Guillaumin
- Craig Van Someren
- Kyle Scott (NECi, inc)
- Zach Tanghetti-Abrams (MSGC grant)

## Publications

1. Meadows, G., Grimm, A. and Green, S. (Eds.) (2018). *Independent Risk Analysis for the Straits Pipelines - Final Report*. Retrieved from Michigan Pipeline Safety Advisory Board website: [https://mipetroleumpipelines.com/sites/mipetroleumpipelines.com/files/document/pdf/Straits\\_Independent\\_Risk\\_Analysis\\_Final.pdf](https://mipetroleumpipelines.com/sites/mipetroleumpipelines.com/files/document/pdf/Straits_Independent_Risk_Analysis_Final.pdf)
2. Marcarelli, A., A. Coble, K. Meingast, E. Kane, C. Brooks, I. Buffam, S. A. Green, C. Huckins, D. Toczydlowski, R. Stottlemyer (2018). Of small streams and Great Lakes: integrating tributaries to understand the ecology and biogeochemistry of Lake Superior. *J. American Waterworks Association*, <https://dx.doi.org/10.1111/1752-1688.12695>.
3. Skuce, A. G., J. Cook, and M. Richardson (2017), Does it matter if the consensus on anthropogenic global warming is 97% or 99.99%? *Bulletin of Science*, 36(3), 150–156, [doi:10.1177/0270467617702781](https://doi.org/10.1177/0270467617702781).
4. Cook, J., Oreskes, N., Doran, P., Anderegg, W., Verheggen, B., Maibach, E., Carlton, S., Lewandowsky, S., Skuce, A., Green, S., Nuccitelli, D., Jacobs, P., Richardson, M., Winkler, B., Painting, R., Rice, K. (2016). Consensus on consensus: a synthesis of consensus estimates on human-caused global warming. *Environmental Research Letters*, 11(4), 048002. [doi.org/10.1088/1748-9326/11/4/048002](https://doi.org/10.1088/1748-9326/11/4/048002).
5. Veverica, T. J., Kane, E. S., Marcarelli, A. M., & Green, S. A. (2016). Ionic Liquid Extraction Unveils Previously Occluded Humic-Bound Iron in Peat Soil Pore Water. *Soil Science Society of America Journal*. [doi.org/10.2136/sssaj2015.10.0377](https://doi.org/10.2136/sssaj2015.10.0377)
6. Hering, J. G., D. A. Dzombak, S. A. Green, R. G. Luthy, D. Swackhamer. (2014). Engagement at the Science-Policy Interface. *Environmental Science and Technology*, 48 (19), 11031-11033. doi:10.1021/es504225t.
7. Kerfoot, W. K, F. Yousef, S. Green, G. Fahenstiel (2014). Demise of the “Doughnut”: Quagga Mussels Cause an Early Season Productivity Decline in Lake Michigan, (submitted), *Journal of Great Lakes Research*
8. Veverica, Timothy, E. Kane, A. Marcarelli (2013). Lifting the humic veil: evaluating iron occlusion in peat porewater, in revision for *Soil Biology and Biochemistry*.
9. Cook, J., D. Nuccitelli, A. Skuce, P. Jacobs, R. Painting, R. Honeycutt, S. A. Green, S. Lewandowsky, M. Richardson, R. G. Way (2014). Reply to ‘Quantifying the consensus on anthropogenic global warming in the scientific literature: A re-analysis’ *Energy Policy*, doi:10.1016/j.enpol.2014.06.002.
10. Hu, Na, and Sarah A. Green (2014). Mechanism of formation of acyl radicals in tobacco smoke, *Atmospheric Environment*, 95C, 142-150. doi:10.1016/j.atmosenv.2014.06.027.
11. Hu, Qili, Paul Bergstrom, and Sarah A. Green (2013). Covalent binding of fluorescein to porous silica for optical pH sensing, *in preparation*.
12. Vanga, K. L., Q. Hu, S. A. Green, P. L. Bergstrom (2011) Nanotechnology (IEEE-NANO), Portland, OR. pp 1639-1643.
13. J. Cook, D. Nuccitelli, S. A. Green, M. Richardson, B. Winkler, R. Painting, R. Way, P. Jacobs, A. Skuce (2013). Quantifying the consensus on anthropogenic

- global warming in the scientific literature. *Environ. Res. Lett.* 8, 024024. doi:10.1088/1748-9326/8/2/024024. *Environ. Res. Lett.* Best paper of the year award, 2013. Downloaded 225,000 times as of Sept 2014. Cited by John Oliver on comedy show. Tweeted by President Obama, Secretary Kerry.
14. Kerfoot, W.C., Yousef, F., Green, S. A., Regis, R., Shuchman, R., Brooks, C. N., Sayers, M., et al. (2012). Light detection and ranging (LiDAR) and multispectral studies of disturbed Lake Superior coastal environments. *Limnology and Oceanography*, 57(3), 749-771. doi:10.4319/lo.2012.57.3.0749.
  15. Zhu, S., S. Green, H. Liu, and V. R. Donuru (2010), Near Infrared Emissive BODIPY Polymeric and Co-polymeric Dyes, *Polymer*, 51(23), 5359-68.
  16. Zhu, S., Zhang, J., Vegesna, G., Luo, F.-T, Green, S. A., & Liu, H. (2011). Highly water-soluble neutral BODIPY dyes with controllable fluorescence quantum yields. *Organic letters*, 13(3), 438-441. doi:10.1021/oll02758z.
  17. Zhu, S., Jingtuo Zhang, Giri K. Vegesna, Ravindra Pandey, Fen-Fair Luo, Sarah A. Green, Haiying Liu, (2011) One-pot efficient synthesis of dimetric, trimetric, and tetrameric BODIPY dyes for panchromatic absorption. *Chem. Commun.* doi:10.1039/c0cc05303a.
  18. Velayudham, S., C. H. Lee, M. Xie, D. Blair, N. Bauman, Y. K. Yap, S. A. Green, and H. Y. Liu (2010), Noncovalent Functionalization of Boron Nitride Nanotubes with Poly (p-phenylene-ethynylene) s and Polythiophene, *Applied Materials & Interfaces*, 2(1), 104-110.
  19. Mai, W. P., S. A. Green, D. K. Bates, and S. Y. Fang (2010), Synthesis of 3-Amino-2, 2-Dimethyl, 8-Thia-1-Azaspiro [4.5] Decane, *Synthetic Communications*, 40(17), 2571-2577.
  20. Kerfoot, W.C., F. Yousef, S. A. Green, J. W. Budd, D. J. Schwab, and H. A. Vanderploeg (2010), Approaching storm: Disappearing winter bloom in Lake Michigan, *Journal of Great Lakes Research*, 36, 30-41. doi:10.1016/j.jglr.2010.04.010. Winner of Chandler-Misener Award (2011).
  21. Jia, M., Tang, Y., Lam, Y-F., Green, S. A., & Blough, N. V. (2009). Prefluorescent nitroxide probe the highly-sensitive determination of peroxy and other radical oxidants. *Analytical Chemistry*, 81(19), 8033-8040. doi:10.1021/ac901374m.
  22. Donuru, V. R., G. K. Vegesna, S. Velayudham, S. Green, and H. Y. Liu (2009), Synthesis and Optical Properties of Red and Deep-Red Emissive Polymeric and Copolymeric BODIPY Dyes, *Chemistry of Materials*, 21(10), 2130-2138.
  23. Ma, X., and S. A. Green (2008), Fractionation and Spectroscopic Properties of Fulvic Acid and Its Extract, *Chemosphere*, 72, 1425-1434.
  24. Kerfoot, W. C., J. W. Budd, S. A. Green, J. B. Cotner, B. Biddanda, D. J. Schwab, and H. A. Varderploeg (2008), Doughnut in the desert: a late winter production pulse in Southern Lake Michigan, *Limnology and Oceanography*, 53(2), 589-604.
  25. Urban, N. R., M. T. Auer, S. A. Green, X. Lu, D. S. Apul, K. D. Powell, and L. Bub (2005), Carbon cycling in Lake Superior, *Journal of Geophysical Research-Oceans*, 110(C6).
  26. Ma, X. D., and S. A. Green (2004), Photochemical transformation of dissolved organic carbon in Lake Superior – An in-situ experiment, *Journal of Great*

*Lakes Research*, 30, 97-112.

27. Li, H. Y., J. W. Budd, and S. Green (2004). Evaluation and regional optimization of bio-optical algorithms for central Lake Superior, *Journal of Great Lakes Research*, 30, 443-458.
28. Green, S. A., and B. J. Eadie (2004), Introduction to special section: Transport and transformation of biogeochemically important materials in coastal waters, *Journal of Geophysical Research-Oceans*, 109(C10).
29. Cory, R. M., S. A. Green, and K. S. Pregitzer (2004), Dissolved Organic Matter Concentration and Composition in the Forests and Streams of Olympic National Park, WA., *Biogeochemistry*, 67(3), 269-288.
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51. Coble, P. G., S. A. Green, N. V. Blough, and R. B. Gagosian (1990), Characterization of dissolved organic matter in the Black Sea by fluorescence spectroscopy, *Nature*, *348* (29 November), 432-435.

### Book Chapters

1. Green, S. A. (2017), Green Chemistry: Progress and Barriers, in Sustainable Green Chemistry, vol. 1, edited by M. A. Benvenuto, pp. 17–27, Berlin/Boston.
2. Jacobs, P. H., Jokimäki, A., Rice, K., Green, S. A., & Winkler, B. Polluted Discourse: Communication and Myths in a Climate of Denial. In Communicating Climate-Change and Natural Hazard Risk and Cultivating Resilience (Vol. 45, pp. 37–54) Ed.: J. L. Drake, Y. Y. Kontar, J. C. Eichelberger, T. S. Rupp, K. M. Taylor. Cham: Springer International Publishing. [http://doi.org/10.1007/978-3-319-20161-0\\_3](http://doi.org/10.1007/978-3-319-20161-0_3), 2015.
3. Green, S. A. and N. V. Blough, Spectroscopic characterization of non-living organic matter, in the role of non-living organic matter in the Earth carbon

cycle, edited by R. G. Zepp, and C. Sonntag, pp. 23-45, John Wiley and Sons, New York, 1995.

## Presentations

4. **Janet Hering, David Dzombak, Sarah Green, Richard Luthy, and Deborah Swackhamer.** Panel Discussion "Working Effectively at the Science-Policy Interface: Conceptual Basis and Experiences from Institutional and Individual Perspectives", Holderness, New Hampshire, June, 2014.
5. **Green, Sarah A.** "Michigan Green Chemistry Roundtable" APEC Chemical Dialogue, Beijing, China, August 2014.
6. **Green, Sarah A.** APEC Green Development Roundtable, Tianjin, China, May 2014.
7. **Green, Sarah A.** "Global policy change: sharing international action for the environment." Rutgers University, March 2014 (**Invited**).
8. **Hu, Na** and Sarah A. Green, "Sources, Sinks, and Cycling of Acetyl Radicals in Tobacco Smoke: A highly Polluted Biomass Burning Model Study." American Geophysical Union National Meeting, San Francisco, December 2012.
9. **Hu, Na** and Sarah A. Green, "New Mechanism Proposed for the Acyl Radical Detected in Cigarette Smoke." American Chemistry Society National Meeting, Boston, August 2010.
10. **Hu, Qili** and Sarah A. Green, "pH response of fluorescent dyes immobilized in hydrogel films." American Chemistry Society National Meeting, Philadelphia, August 2012.
11. **Hu, Qili** and Sarah A. Green, "Spectroscopic behavior of 8-hydroxy-1, 3, 6-pyrenetrisulphonate immobilized in sol-gel thin film and its evaluation as potential pH sensor." American Chemical Society Central Region, Indianapolis, June 2011.
12. **Jai, Min**, Yu Tang, Sarah A. Green, and Neil Blough, "3-AP reaction with peroxy radicals: development of a fluorescent probe for peroxy radical detection," American Chemical Society, Chicago, April 2007.
13. **Green, Sarah A.** "Detection of free radicals in tobacco smoke." Fudan University, Sept 26, 2007 (**invited**).
14. **Green, Sarah A.** "Detection of free radicals in tobacco smoke." Donghau University, Sept 24, 2007 (**invited**).
15. **Jai, Min**, Yu Tang, Sarah A. Green, and Neil Blough, "3-AP reaction with peroxy radicals: development of a fluorescent probe for peroxy radical detection," at 31<sup>st</sup> Reaction Mechanisms Conference, University of Maryland, College Park, 2006.
16. Kerfoot, W. Charles, Judith Wells Budd, **Sarah A. Green**, Matthew Julius, and David J. Schwab, "Doughnut in the desert: vertical structure of a winter production pulse," at American Society for Limnology and Oceanography, Victoria, B.C., 2006.
17. **Hemme**, Susan R., Sarah A. Green, and W. Charles Kerfoot, "Metallothionein in zooplankton as a biomarker of copper stress on an ecosystem," at American Society for Limnology and Oceanography, Victoria, B.C., 2006.
18. **Tang, Y.**, S. A. Green, and N. V. Blough. "Reactions of peroxy radicals with pyrrolidiny and piperidiny nitroxides," Abstracts of Papers of the American



- Chemical Society, 229, U132-U133 (2005).
19. **Pishko, A. L.**, and S. A. Green, "Comparison of chemiluminescent and spectrophotometric analysis of Cu(I)," Abstracts of Papers of the American Chemical Society, 218, U151-U151 (1999).
  20. **Flicker, T. M.**, and S. A. Green, "HPLC for the comparison of free-radical populations in model post-combustion systems," Abstracts of Papers of the American Chemical Society, 218, U146-U146 (1999).
  21. **Ma, X.**, and S. A. Green, "Thin layer chromatographic fractionation and optical properties of fulvic acid and subfractions," Abstracts of Papers of the American Chemical Society, 216, U776-U776 (1998).
  22. **Green, S. A.**, "Chemists in the real world: Preparing chemistry students for environmental challenges," Abstracts of Papers of the American Chemical Society, 216, U792-U792 (1998).
  23. **Wang, X. F.**, and S. A. Green, "Cu (II) speciation in ponds contacting mine tailings," Abstracts of Papers of the American Chemical Society, 213, 201-GEOC (1997).
  24. **Green, S. A.**, and M. A. Fox, "Photoinduced Intramolecular Electron-Transfer from Nitroxyl Radicals," Abstracts of Papers of the American Chemical Society, 207, 135-PHYS (1994).
  25. **Green, S. A.**, and N. V. Blough, "Absorption and Fluorescence-Spectra of Waters from the Gulf of Mexico and Western Coastal Florida," Abstracts of Papers of the American Chemical Society, 203, 247-ENVR (1992).
  26. **Green, S. A.**, F. M. M. Morel, and N. V. Blough, "An Investigation of the Electrostatic Properties of Humic Substances by Fluorescence Quenching," Abstracts of Papers of the American Chemical Society, 202, 57-ENVR (1991).
  27. **Green, S. A.**, N. V. Blough and F. M. M Morel, "Quenching of Fulvic-Acid Fluorescence by Nitroxide Radicals," Abstracts of Papers of the American Chemical Society, 199, 56-ENVR (1990).
  28. **Green, Sarah A.**, "Color and Carbon in Lake Superior," at Rutgers University, 2004. (**invited**).
  29. **Pignoti, Louis** and Sarah A. Green, Reduction of Trichloroethene with zero valance Iron and Mechanical agitation, in Upper Peninsula Student Research Symposium, MTU, Michigan Tech, Houghton, MI, 2005.
  30. **Warrington, D. S.**, J. W. Budd, R.P. Stumpf, and S. A. Green, "Satellite-based chlorophyll and turbidity estimates using SeaWiFS (Sea-Viewing Wide Field-of-View Sensor) imagery of Lake Superior," at Superior: State of the Lake, Houghton, 2002.
  31. **Urban, N. R.**, M. T. Auer, and S. A. Green, "Carbon cycling in Lake Superior," at Superior: State of the Lake, Houghton, 2002.
  32. **Shi, Wei**, and Sarah A. Green, "Comparison of nitrate and nitrate photolysis in aqueous solution, artificial snow, and artificial ice," at Midwest Environmental Chemistry Workshop, Chicago, 2002.
  33. **Li, H.**, J. W. Budd, and S. A. Green, "Comprehensive evaluation of satellite-based chlorophyll algorithms on Lake Superior," at Superior: State of the Lake, Houghton, 2002.

34. **Green, S. A.**, A. Vodacek, and X. Ma, "The optical environments of Lake Superior," at Superior: State of the Lake, Houghton, 2002.
35. **Green, Sarah A.**, Anthony Vodacek, and Xiodong Ma, "Optical Properties Across the Coastal Margin of Lake Superior," at American Geophysical Union – Ocean Sciences, American Geophysical Union, Honolulu, Hawaii, 2002.
36. **Green, Sarah A.**, Keweenaw Current: Lake Superior's River, at Houghton Rotar Club, **Invited**, Houghton, 2002.
37. **Green, Sarah A.**, Keweenaw Current: Lake Superior's River, at Little Gem Theatre, Lake Linden, 2002. (**Invited**).
38. **Green, Sarah A.**, The optical environment of Lake Superior, at Remote Sensing Institute, **Invited**, MTU, Houghton, 2002.
39. **Cory, Rose M.**, Sarah A. Green, and Kurt Pregitzer, "Characterization of dissolved organic matter in the forests and streams of Olympic National Park," at Third Annual Symposium on Natural Organic Matter in Soils and Water, Saint Paul, 2002.
40. **Budd, J. W.**, S. A. Green, T. Yu, and H. Li, "Remote sensing of biological and physical variability in Lake Superior," at Superior: State of the Lake, Houghton, 2002.
41. **Urban, N. R.**, D. S. Apul, J. Jeong, Y. Chai, M. T. Auer, and S. A. Green, "Carbon Cycling in Lake Superior Revisited," at International Association for Great Lakes Research, 2001, Green Bay, 2001.
42. **Savolainen, Markku**, "Fluorescence of naphthylamides," at ACS Undergraduate poster conference, MTU, Houghton, MI, 2001.
43. **Pishko, Adrian**, and Sarah A. Green, "Chemiluminescent determination of photochemically generated Cu(I)," at Midwest Environmental Chemistry Workshop, Minneapolis, 2001. (Won award for best presentation.)
44. **Green, Sarah A.**, Elise Ralph, Angela Cates, and Judy Budd, "Lake Superior Science from the Ranger III," at Lake Superior Parks Research Conference, Houghton, 2001. (**Invited**)
45. **Cory, Rose M.**, and Sarah A. Green, "Dissolved organic matter in the forests and streams of Olympic National Park," at Midwest Environmental Chemistry Workshop, Minneapolis, 2001.
46. **Warrington, D. S.**, J. W. Budd, R. P. Stumpf, and S. A. Green, Satellite-derived chlorophyll and turbidity estimates using SeaWiFS (Sea-Viewing Wide Field-of-View Sensor) Imagery, at 43<sup>rd</sup> Annual IAGLR Conference Great Lakes, Cornwall, Ontario, 2000.
47. **Pishko, Adrian L.**, and Sarah A. Green, "Chemiluminescent Determination of Photochemically Generated Cu(I) in Natural Waters," at American Chemical Society, Pacific Rim, Honolulu, 2000.
48. **Green, S. A.**, A. Vodacek, X. Ma, and J. Wells-Budd, The optical environment of Lake Superior, at American Chemical Society, Pacific Rim, Honolulu, 2000.
49. **Ma, Xiaodong**, and Sarah A. Green, An in situ photochemical experiment in Lake Superior, at Midwest Environment Chemistry Workshop, Houghton, MI, 1999.
50. **Green, Sarah A.**, and Judith Wells-Budd, Introduction to the Lake Superior KITES

- project, at Lake Superior Regional Geology Conference, Marquette, MI, 1999  
(Invited).
51. **Green, Sarah A.**, and Anthony Vodacek, KITES: gradients in light absorbing and scattering materials associated with the thermal bar and Keweenaw Current in Lake Superior, at American Society of Limnology and Oceanography, Santa Fe, 1999.
  52. **Green, Sarah A.**, Optical Properties of Lake Superior, at Michigan Technological University, Remote Sensing Institute, Houghton, MI, 1999 (Invited).
  53. **Green, Sarah A.**, Introduction to the Lake Superior KITES project, at Oakland University, MI, 1999. (Invited).
  54. **Winowiecki, Leigh A.**, and Sarah A. Green, "Copper concentrations in plants grown on mine tailings on Lake Superior's shorelines," at Midwest Environmental Chemistry Workshop, Ann Arbor, 1998.
  55. **Vodacek, Anthony**, and Sarah A. Green, UV attenuation in Lake Superior, at Society of Environmental Toxicology and Chemistry, Charlotte, NC, 1998.
  56. **Green, Sarah A.**, Judy Wells Budd, Elise Ralph, and Anthony Vodacek, Introduction to the Lake Superior KITES project, at Midwest Environmental Chemistry Workshop, Ann Arbor, 1998. (Invited).
  57. **Green, Sarah A.**, Judy Wells Budd, Elise Ralph, and Anthony Vodacek, Introduction to the Lake Superior KITES project, at Michigan Space Grant Consortium, Ann Arbor, 1998 (Invited).
  58. **Green, Sarah A.**, Gradients in DOM and optical properties in Lake Superior, at Society of Environmental Toxicology and Chemistry, Charlotte, NC, 1998.
  59. **Green, Sarah A.**, Trapping gas phase radicals from tobacco smoke and diesel exhaust, seminar, Northeastern Illinois University, 1998. (Invited).
  60. **Flicker, Thomas M.**, and Sarah A. Green, Comparison of two fluorescent tags for the improved HPLC detection of gas-phase radicals, at 22<sup>nd</sup> International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC '98), St. Louis, 1998.
  61. **St. John, Wayne**, and Sarah A. Green, The effects of DOM on the solid-phase microextraction of substituted phenols and PAHs from natural waters, at Pittcon, Atlanta, GA, 1997.
  62. **Green, Sarah A.**, and Xiaodong Ma, Dynamics of CDOM in Lake Superior, at American Society of Limnology and Oceanography, Santa Fe, NM, 1997.
  63. **Green, Sarah A.**, Introduction to the KITES project, at MTU National Advisory Board, 1997. (Invited).
  64. **Green, Sarah A.**, Fluorescence quenching by nitroxide radicals: mechanism and applications, seminar, Michigan State University, 1997. (Invited).
  65. **Green, Sarah A.**, Trapping gas phase radicals from tobacco smoke and diesel exhaust, seminar, University of South Dakota, 1997. (Invited).
  66. **Green, Sarah A.**, Introduction to the KITES project, at MTU Ecolunch, 1997. (Invited).
  67. **Flicker, T.**, and S. A. Green, Detection of Radicals in Tobacco Smoke and Diesel

- Exhaust Using a Fluorescent Trap, at Pittcon, Atlanta, GA, 1997.
68. **Wang, Xingfang**, and Sarah A. Green, Copper speciation in stamp sand ponds, at Midwest Environment Chemistry Workshop, Purdue University, Lafayette, IN, 1996.
  69. **Ma, Xiaodong**, and Sarah A. Green, Photochemical processes of dissolved organic carbon in the inflow rivers to Lake Superior, at Midwest Environmental Chemistry Workshop, Purdue University, Lafayette, IN, 1996.
  70. **Ma, Xiaodong**, and Sarah A. Green, Photochemical processes of dissolved organic carbon in the inflow rivers to Lake Superior, at Lake Superior Biological Conference, Houghton, MI, 1996.
  71. **Green, Sarah A.**, and Xiaodong Ma, Dynamics of chromophoric dissolved organic matter (CDOM) in Lake Superior, at Lake Superior Biological Conference, Houghton, MI, 1996.
  72. **Green, Sarah A.**, "Why isn't Lake Superior Brown?" at College of St. Benedict, Collegetown, MN, 1996. (**Invited**).

## Proposals Funded

1. Meadows, Guy, Sarah A. Green, "Alliance for Coastal Technologies: National scale efforts for verification and validation of observing technologies." Michigan Tech share \$104,961. Dates 6/1/2014-5/31/2015.
2. Baltensperger, Bradley, Chris Anderson, and Sarah A. Green, NSF-Robert Noyce Scholarship Program, 'Michigan Tech Noyce Scholars Program.', Total project: \$701,870. Dates: 5/1/2009-4/30/2014.
3. Green, Sarah A., H. Liu, L. Bi, S. Fang, and M. Thompson, National Science Foundation (funded), "Acquisition of Matrix-Assisted Laser Desorption/Ionization Time of Flight Mass Spectrometer (MALDI-TOF)." Total project: \$180,000. Dates: 12/15/2010-11/30/2013.
4. Green, Sarah A., National Institute of Drug Abuse (NIH) (funded), "Identification of Short-Lived Radicals in Tobacco Smoke." Total project: \$391,665; Cost share: \$49,800, Students: 2 PhD. Dates: 9/30/2006 to 8/31/2009.
5. Kerfoot, W. C., Sarah Green, and Judith Wells Budd., Sea Grant – National Oceanic and Atmospheric Administration (funded), "Ecosystem Mosaics and the Lake Michigan 'Doughnut': Modeling Pattern and Process Using Remotely Sensed Imagery." Total project: \$237,261; Cost share: \$97,690. Dates: 3/1/2005 to 2/28/2007.
6. Kerfoot, W. C., Sarah Green, and Noel Urban, Michigan Department of Natural Resources (funded), "Torch Lake recovery from mining impacts." Total project: \$105,468. Dates: 9/1/2004 to 8/31/2005.
7. Pishko, Adrian, (SG PhD Student) Michigan Space Grant Consortium (funded), "Copper photochemistry in natural waters." Total project: \$5000, Fellowship grant. Dates 2001-02.
8. Budd, J. W., W. C. Kerfoot, and S. A. Green, Michigan Sea Grant (NOAA) (funded), "Great Lakes photosynthetic rates derived from satellite-based chlorophyll concentration." Total project: \$209,601. Dates: 1/1/01 to 12/31/02.

9. Honrath, Richard E., Matthew C. Peterson, Sarah A. Green, Jack Dibb (UNH), Nicola Blake (UC Irvine), Donald Blake (UC Irvine), Steve Bertman (WMU), Paul Shepson (Purdue), Cort Anastasio (UC Davis), Mary Albert (CRREL), and Konrad Steffen (U COI), NSF-OPP (funded), "Investigation of photochemical transformations within snow and their effect on snow and atmospheric composition." Total project: \$343,912; Dates 9/1/1999 to 8/31/2002.
10. Pregitzer, Kurt S., David J. Flaspohler, Sarah A. Green, David W. Hand, and Wilson C. Kerfoot, NSF-MRI (funded), "The movement of elements through ecosystems: Major research instrumentation for the integration of research and education." Total project: \$894,131; MTU cost share: \$268,239. Dates: 2000.
11. Green, Sarah A., Noel R. Urban, Martin T. Auer, Nancy A. Auer, Judy W. Budd, W. Charles Kerfoot, Elise A. Ralph, Knut Aagaard, Eric T. Brown, Changsheng Chen, and Anthony Vodacek, NSF/NOAA CoOp (funded), "Impact of the Keweenaw Current on Cross-Margin Transport in Lake Superior: Physical Processes, Chemical Gradients, and Biological Communities." Total project: \$4,120,732 (MTU portion: \$2,407,493); Cost share: student support through Grad School; Students: many. Dates: 1997 to 2002.
12. Urban, Noel R., and Sarah A. Green, National Undersea Research Program (NURP) NOAA (funded), "Submersible-assisted study of cross-margin transport in support of COP project KITES." Total project: \$50,000. Dates: 1999 to 2000.
13. Urban, Noel R., and Sarah A. Green, National Undersea Research Program (NURP) NOAA (funded), "Submersible-assisted study of cross-margin transport in support of COP project KITES." Total project: \$50,000. Dates: 1998 to 1999.
14. Pregitzer, Kurt, Jiquan Chen, Sarah A. Green, Andrew Burton, Erik Hobbie, Paul Rygielwicz, and Robert Stottlemeyer, Environmental Protection Agency (funded), "Collaborative research on below-ground ecosystem function: Merging long-term climate monitoring with soil, root, and foodweb dynamics to understand mechanisms regulating C and N transformations in Olympic National Park." Total project: \$1,196,526 (MTU portion: \$895,456); 1999 to 2001.
15. Bluth, Gregg J. S., J. W. Budd, S. A. Green, R. E. Honrath, A. L. Maclean, K. G. M. Paterson, M. C. Peterson, A. N. Pliant, J. B. Rafert, M. C. Roggeman, W. I. Rose, and T. J. Schulz, NASA (funded), "Center of environmental remote sensing education for engineers and scientists at Michigan Tech." Total project: \$470,944. Dates: 1997-1999.
16. Green, Sarah A., Michigan Space Grant Consortium (funded), "Optical Properties of Lake Superior and its Tributaries for Satellite-based Remote Sensing." Total project: \$4000. Dates: June 1, 1996 to May 31, 1997.

### **Proposal Approved (no associated funding)**

1. Baltensperger, Bradley, Sarah A. Green, Kedmon Hungwe, Blair Orr, Paul Charlesworth, Pushpalatha Murthy, William Yaroch, William Rose, Janice Glime, John Jaszczak, Wayne Pennington, Chris Anderson, and James Mihelcic, United States Peace Corps, "Proposal for a Peace Corps Master's International program in Science Education." Start date: 9/2005.

## **Proposals Funded – Internal Michigan Tech Supported**

2. Sarah A. Green, Bi, S. Fang, M. Thompson, MTU-REF (funded), “Acquisition of a DNA synthesizer for research applications in chemistry and biochemistry,” \$15,272; equipment only (2009).
3. Murthy, Pushpa, Sarah A. Green, and other faculty members, MTU-REF (funded), “Acquisition of a Departmental CG/MS,” \$50,000; equipment only (2000).
4. Rafert, Bruce, Sarah A. Green, Judy Wells Budd, and et al, REF (funded), “Remote sensing and environmental monitoring institute: first year proposal.” Total project: \$14,384. Dates: 1998 to 1999.
5. Green, Sarah A. and Martin T. Auer, C2E2 (funded), “Purchase of Solar Simulator.” Total project: \$4,620. Dates: 9/1/97-8/31/98.
6. Hand, David W., Alex S. Mayer, Sarah A. Green, Tony N. Rogers, James R. Mihelcic, and John C. Crittenden, CenCITT (Center for clean industrial technologies) (funded), “Development of the environmental technologies treatment design options tool for the conceptual process advisory system.” Total project: \$122,811. Dates: 7/1/1995 to 6/31/1997.
7. Kerfoot, W. Charles, Sarah A. Green, Judy Wells Budd, and et al, REF (funded), “Remote sensing and environmental monitoring institute: second year proposal.” Total project: \$14,384. Dates: 1998 to 1999.