

**IRIS STEWART-FREY**  
*Associate Professor*

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Department of Environmental Studies and Sciences | Santa Clara University  
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**EDUCATION**

- 2001 **Ph.D., Hydrogeology, Stanford University**  
Department of Geological and Environmental Sciences.  
Thesis title: *Development of a Type Transfer Function Approach for Modeling Non-Point-Source Pesticide Leaching at the Regional Scale*
- 1994 **B.S., Geology and Geophysics, University of Hawai'i**  
School of Ocean and Earth Science and Technology

**PROFESSIONAL DEVELOPMENT**

- 06/14–present **Department Chair**, Department of Environmental Studies and Sciences, Santa Clara University, Santa Clara, CA
- 09/13–present **Associate Professor**, Department of Environmental Studies and Sciences, Santa Clara University, Santa Clara, CA
- 09/06–08/13 **Assistant Professor**, Environmental Studies Institute, Santa Clara University, Santa Clara, CA (on parental leave 09/06 – 08/07)
- 12/04–05/06 **Visiting Scientist, U.S. Geological Survey**, Water Resources Division, Menlo Park, CA.
- 03/05–06/05 **Adjunct Lecturer**, Department of Civil Engineering, Santa Clara University, Santa Clara, CA.
- 07/02–06/03 **Program Director**, International Ph.D. Program Environment and Water (ENWAT), Universität Stuttgart, Department of Civil and Environmental Engineering, Germany.
- 12/00–07/04 **Postdoctoral Researcher and NOAA visiting scientist**, Scripps Institution of Oceanography, Climate Research Division, La Jolla, CA.
- 10/94–11/00 **Research and Teaching Assistant**, Stanford University, Stanford, CA.
- 10/92–11/94 **Research assistant**, Department of Geology and Geophysics, University of Hawaii, Hawaii

**RESEARCH GRANTS AND FELLOWSHIPS**

*External Grants*

- 09/15 – 12/18 **NSF RUI Research Grant** (\$272,555, PI: C Bacon, co-PIs I Stewart, E Maurer, W Sundstrom), *Coping with Food and Water Insecurity: Producing Vulnerability or Resilient Responses to the Coffee Leaf Rust Outbreak and Mesoamerican Drought?*

09/09 – 09/12 **U.S. EPA STAR Research Grant** (\$325,000, co-PI E Maurer) *Impact of climate change on stream water quantity and quality in the Western U.S.*

#### *Internal Grants*

06/15 – present Thriving Neighbors Grant (\$6,520). *The Distribution of Environmental Pollution near Santa Clara County Schools: Patterns in Exposure and Community-Based Response*. Co-PIs Bacon and Stewart-Frey.

06/14 – 06/16 Provost's Grant (\$3,000) *Developing tools to detect changes in shade grown coffee areas using remotely sensed databases. Using Google Earth for a geospatial analysis of shade-grown coffee in northwestern Nicaragua* (with C Bacon)

06/13 – 06/15 Roelandt Grant. *What factors strengthen food security and resilience to global climate change among Nicaragua's small scale farmers?* (\$8600) With C Bacon, E Maurer, W Sundstrom

01/11 – 06/12 Center for Science Technology and Society grant (\$4,000) *Spatial analysis of environmental burdens in Santa Clara County*. With C Bacon.

06/13 - present Provosts' Sustainability Research Initiative Grant (\$20,000) Funded 3 projects, our portion involves the *geospatial mapping and analysis of development patterns surrounding the Santa Clara Mission*. With L Kealhofer, and L Panich, other projects by M Bezanson, J Farnsworth, and V Matzek

06/11 – 06/13 Provosts' Sustainability Research Initiative Grant (\$30,000) *An action research partnership for Environmental and Food Justice in San Jose*. With L Gray, C Bacon, L Kealhofer, G Gullette)

#### *Fellowships*

09/07- 08-12 Clare Boothe Luce Professorship

12/00-12/03 NOAA/UCAR Postdoctoral Research Fellowship

09/98-09/00 EPA STAR Doctoral Student Fellowship

09/98-09/99 Theresa Heinz Fellowship for Environmental Research

09/96-09/97 National Science Foundation Doctoral Student Fellowship

09/93-09/96 Society of Exploration Geophysicists Student Fellowship

#### **PEER-REVIEWED PUBLICATIONS**

**\*designates student authors**

***in review:***

Bacon CM, Sundstrom W, **Stewart IT**, \*Beezer D, 2015. Vulnerability to cumulative hazards: Coping with the coffee leaf rust outbreak, drought, and food security in Nicaragua. Submitted to World Development.

Maurer EP, Bacon CM, **Stewart IT**, 2016. Projected 21st-century changes in the Central American mid-summer drought using statistically downscaled CMIP5 projections. Submitted to Regional Environmental Change.

***published:***

Ficklin DL, Letsinger SL, **Stewart IT**, Maurer EP, 2016. Assessing differences in snowmelt-dependent hydrologic projections using CMIP3 and CMIP5 climate

forcing data for the western United States. Hydrology Research, doi:10.2166/nh.2015.101

- Stewart IT**, Ficklin, DL, \*Carrillo CA, \*McIntosh R., 2015. 21st century increases in the likelihood of extreme hydrologic conditions for the mountainous basins of the Southwestern United States. *Journal of Hydrology*, 529, 340-353.
- Stewart IT**, Bacon CM, \*Burke WD, 2014. The uneven distribution of environmental burdens and benefits in Silicon Valley's backyard, *Applied Geography* 55, 1-12
- Ficklin, DL, Barnhart BL, Knouft JH, **Stewart IT**, Maurer EP, Letsinger LP, and Whittaker GW, 2014. Climate change and stream temperature projections in the Columbia River Basins: biological implications of spatial variation in hydrologic drivers. *Hydrology and Earth System Sciences*, 18(1), 4897-4912, 2014, www.hydrol-earth-syst-sci.net/18/4897/2014/
- Ficklin DL, **Stewart IT**, Maurer EP, 2013. Climate change impacts on streamflow and subbasin-scale hydrology in the Upper Colorado River Basin. *PLoS ONE* 8(8): e71297. doi:10.1371/journal.pone.0071297
- Stewart IT**, 2013. Connecting physical watershed characteristics to climate sensitivity for California mountain streams. *Climatic Change*, 116:133–148, doi:10.1007/s10584-012-0567-5.
- Stewart IT**, \*Purner EE, \*Guzman PD, 2013. Socioeconomic disparities in the provision of school gardens in Santa Clara County, California. *Children, Youth and Environments* 23(2) 127-153.
- Ficklin, DL, **Stewart IT**, Maurer EP, 2013. Effects of climate change on water quality in the Sierra Nevada mountain range in California. *Wat. Resour. Res.* 49:2765-2782, doi:10.1002/wrcr.20248
- Ficklin DL, **Stewart IT**, Maurer EP, 2012. Projections of 21<sup>st</sup> century Sierra Nevada local hydrologic flow components using an ensemble of General Circulation Models. *Jour. Am. Water Res. Assoc. (JAWRA)*, 1-21. doi: 10.1111/j.1752-1688.2012.00675.x
- Ficklin DL, **Stewart IT**, Maurer EP, 2012. Effects of projected climate change on the hydrology in the Mono Lake Basin, California. *Climatic Change*, doi: 10.1007/s10584-012-0566-6
- Ficklin DL, Luo Y, **Stewart IT**, Maurer EP, 2012. Development and application of a hydroclimatological stream temperature model within SWAT. *Water Resources Research. Vol 48, W01511*, doi:10.1029/2011WR011256.
- \*Fritze H, **Stewart IT**, Pebesma EJ, 2011. Shifts in Western North American snowmelt runoff regimes for the recent warm decades. *J. Hydromet.* doi: 10.1175/2011JHM1360.1
- Stewart IT**, 2009. Changes in snowpack and snowmelt runoff for key mountain regions. *Hydrologic Processes* 23:78-94.
- Lundquist JD, **Stewart IT**, Dettinger MD, Cayan DR. 2008. Variability and trends in spring runoff in the western United States, Chapter 5 in *Climate Warming in Western North America: Evidence and Environmental Effects*, Ed: F. Wagner, University of Utah Press.
- Peterson DH, **Stewart IT**, Murphy F. 2008. Principal hydrologic responses to climatic and geologic variability in the Sierra Nevada, California. *Estuary and Watershed Science*, 6(1) (February 2008), Article 1113.
- Maurer EP, **Stewart IT**, Bonfils C, Duffy PB, Cayan DR, 2007. Detection, attribution, and sensitivity of trends towards earlier streamflow in the Sierra Nevada, *J. Geophys. Res.*, 112, D11118, doi:10.1029/2006JD008088.

- Cayan DR, Dettinger MD, **Stewart IT**, Knowles N, 2005. Recent changes toward earlier springs – Early signs of climate warming in western North America: *Watershed Management Council Newsletter*, Spring 2005, 13 p.
- Peterson DH, Smith R, **Stewart IT**, Knowles N, Souldard C, Hager S, 2005. Snowmelt discharge characteristics, Sierra Nevada, California. *USGS Scientific Investigations Report 2005-5056*, <http://pubs.water.usgs.gov/sir2005-5056/>.
- Stewart IT**, Cayan DR, Dettinger MD, 2005. Changes towards earlier streamflow timing across western North America, *J. Climate*, 18:1136-1155.
- Stewart IT**, Cayan DR, Dettinger MD, 2004. Changes in snowmelt runoff timing in western North America under a 'Business as Usual' climate change scenario, *Climatic Change*, 62:217-232.
- Stewart IT**, Loague K, 2004. Assessing groundwater vulnerability in the San Joaquin Valley (CA) with the type transfer function model, *J. Environm. Qual.*, 33:1487-1498.
- Stewart IT.**, Loague K, 2003. Development of type transfer functions for regional-scale non-point-source groundwater vulnerability assessments, *Water Resour. Res.*, 39(12):1359.
- Stewart IT**, Loague K, 1999. A type transfer function approach for regional-scale pesticide leaching assessments. *J. Environ. Qual.* 28:378-387.
- Loague K, Abrams RH, Davis SN, Nguyen A, **Stewart IT**, 1998. A case study simulation of DBCP groundwater contamination in Fresno County, California. 2. Transport in the saturated subsurface. *J. Contam. Hydrol.* 29:137-163.

## CONFERENCE PROCEEDINGS, PRESENTATIONS AND ABSTRACTS

\*denotes undergraduate student authors

**Presenter is underlined**

**Stewart IT**, Bacon CB, AAG meeting, San Francisco

**Stewart IT**, Bacon CB, Sundstrom W, *Smallholder food and water security in the face of climatic stress and the coffee leaf rust: Lessons from Nicaragua*. American Geophysical Union Annual Meeting, San Francisco, CA, December 14-18, 2015, GC54A-08

**Stewart IT**, Ficklin DL, 2015. *Projected changes in flow regimes, stream temperature, and native fish habitat extent in the mountains of the Southwestern U.S.* Perth III: Mountains of Our Future Earth, Perth (UK), October 4 – 10, 2015.

**Stewart IT**, Ficklin DL, Maurer EP, \*McIntosh R\*, \*Carrillo C. *Changing likelihoods of extremely low flows, high flows, and high stream temperatures in the Sierra Nevada, California*. Quaternary International. 2015 Nov; 387:147. Paclim 2015, Mar 8-11, 2015, Pacific Grove, CA,

\*Carrillo CA, **Stewart IT**, Ficklin DL, \*McIntosh R, 2014. *Increases in extreme stream flow events and stream temperature for the Sierra Nevada and Colorado Basins*. American Geophysical Union Annual Meeting, San Francisco, Dec 15-19, 2014.

**Stewart IT**, Bacon CM, \*Burke WD, 2014. *Local knowledge meets GIS in assessing the natural resources for Nicaraguan coffee growing cooperatives*. Society for Conservation GIS annual meeting. Pacific Grove, July 9-12, 2014.

\*Burke WD, **Stewart IT**, Bacon CM, 2014. *A spatial analysis of cumulative environmental impacts*. Society for Conservation GIS annual meeting. Pacific Grove, July 9-12, 2014.

**Stewart IT**, 2014. *Projected changes in seasonal drought and flood conditions in the Sierra Nevada and Colorado River Basins (USA)*. European Geophysical Union Annual Meeting, Vienna, April 27 – May 2, 2014.

- Ficklin DL, Letsinger SL, **Stewart IT**, Maurer EP, 2013. *How do hydrologic projections for the western United States change with the new CMIP5 models?* American Geophysical Union Annual Meeting, San Francisco, CA, December 9-13
- Stewart IT**, Ficklin DL, Maurer EP, 2013. *Impact of climatic changes on water resources in the North American Southwest*. Meeting of the Americas, May 13-17 2013. Cancun, Mexico.
- Stewart IT**, Ficklin DL, Maurer EP, 2012. *How much water will be available in the upper Colorado River Basin under projected climatic changes?* American Geophysical Union annual meeting, San Francisco, Dec 3-7, 2012.
- Stewart IT**, Gray L, Bacon CM, Kealhofer L, Gullette G, 2012. Supporting community-based environmental and food justice research through undergraduate class work. ASSHE, June 2012.
- Ficklin DL, **Stewart IT**, Maurer EP, 2012. The effects of climate change on hydrology and stream temperature in the Merced and Tuolumne Rivers. Yosemite Hydroclimate workshop. Yosemite National Park, October 2012.
- Stewart IT, 2012. *Declining Water Quality in Sierra Nevada Mountain Streams under Projected Climatic Changes*. MtnClim 2012, Estes Park, CO, Oct 1-4, 2012 (invited).
- Stewart IT**, Ficklin DL, Maurer EP, 2011. Can a new model better capture the stream temperature changes resulting from climate warming? Abstract H21K-03, presented at 2011 Fall Meeting, AGU, San Francisco, Ca, Dec 5-9.
- Ficklin DL, **Stewart IT**, Maurer EP, 2011. Changes in components of the hydrologic cycle under a warming climate in California. Abstract H31K-03, presented at 2011 Fall Meeting, AGU, San Francisco, Ca, Dec 5-9.
- Stewart IT**. What changes in water supply and quality can we expect from projected climatic changes? Insights from the Western U.S. mountains? Invited oral presentation and workshop on streamflow timing shifts at the University of Muenster in Germany. July 11-13, 2011.
- Ficklin DL, Luo Y, **Stewart IT**, Maurer EP. Development and application of a hydroclimatological stream temperature model within SWAT. Presented at the 2011 International SWAT Conference in Toledo, Spain. June 15-19, 2011
- Stewart IT**, Ficklin DL, Maurer EP. How will projected climate change impact stream temperature and water quality in the Sierra Nevada (CA)? Presented at the European Geosciences Union General Assembly 2011. Vienna, Austria, April 3-8, 2011. Abstract EGU2011-5458
- Ficklin DL, **Stewart IT**, Maurer EP, 2011. Effects of projected climate change on the hydrology in the Mono Lake Basin. California. Presented at the California Water and Environmental Modeling Forum Annual Meeting, Asilomar, California, Feb 28 – Mar 2, 2011.
- Ficklin DL, **Stewart IT**, Maurer EP, 2010. How will a warmer climate affect water quality in the Sierra Nevada, California? Abstract H33C-1152, presented at 2010 Fall Meeting, AGU, San Francisco, Ca, Dec 13-17.
- Stewart IT**, Fritze H, and Pebesma EJ, 2010. Acceleration in streamflow timing trends across western North America. Presented at the conference for Global Change and the World's Mountains, Perth, Scotland, UK, September 26-30, 2010.
- \*Gomez J, **Stewart IT**, Hamilton M, Dawson T, 2010. The very large ecological array: System design and initial deployment strategies. Society of conversation GIS annual meeting, Pacific Grove, July 8-10 2010.
- Stewart IT**, DH Peterson, F Murphy, 2009. Changes in the snowmelt runoff component for California watersheds. Eos Trans. AGU, 90(52), Fall Meet. Suppl., Abstract H33E-0936.

- \*Fritze HH, **IT Stewart**, EJ Pebesma, 2009. Snowmelt runoff regime shifts across western North America. *Eos Trans. AGU*, 90(52), Fall Meet. Suppl., Abstract H33E-0930.
- Peterson DH, **Stewart IT**, Murphy F, Brown L, Knowles N, 2009. Mountain snow, rain, stream water temperature and Chinnok spawning habitat. Yosemite Hydroclimate Workshop, Yosemite Lodge, Oct 8-9, 2009
- IT Stewart**, 2009. Recent trends in California snowmelt runoff. Presented at the 26th Annual PACLIM Workshop, Pacific Grove, CA, March 2009 (invited).
- \*Bates DJ, **IT Stewart**, EP Maurer, 2008. Development of a GIS database to evaluate climate-induced streamflow timing changes in California. *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract GC21A-0701.
- Stewart IT**, DH Peterson, 2008. Connecting snowmelt runoff timing changes to watershed characteristics. *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract GC21A-0700.
- Peterson DH, **IT Stewart**, Murphy F, and D'Entremont, C. 2007. Is the Sierra Nevada hydrology well connected? Presented at the Yosemite Hydroclimate Workshop, Yosemite Lodge, Oct 4-5, 2007.
- Maurer EP, **IT Stewart**, C Bonfils, PB Duffy and DR Cayan. 2006. Earlier streamflow in the Sierra Nevada: influence of elevation on detectability of past and projected trends. Presented at 2006 AGU Fall Meeting, San Francisco, CA, Dec11-15.
- Peterson DH, **IT Stewart**, F Murphy and N Knowles. 2006. Simple hydrologic response to climatic and geologic variability in Yosemite National Park and the Sierra Nevada. Yosemite National Park workshop, Oct 6-7 2006.
- Peterson DH, M Solomon, RE Smith, SW Hager, **IT Stewart**, and K Huber, 2005. Monitoring river conductivity in the central Sierra Nevada. *MtnClim 2005*, Chico Hot Springs, Pray, Montana, March 1-4, 2005.
- Cayan DR, **IT Stewart**, and MD Dettinger, 2004. Earlier snowmelt streamflow in western North America – A response to Pacific decadal variability or climate change? *Eos Trans. AGU*, 85(47), Fall Meet. Suppl., Abstract H24B-02
- Dettinger MD, DR Cayan, **IT Stewart**, and N Knowles, 2004. Climate-change uncertainties & water supplies from western mountains – What are observations and models trying to tell us? *Eos Trans. AGU*, 85(47), Fall Meet. Suppl., Abstract U51A-03
- Stewart IT**, DR Cayan, and MD Dettinger, 2004. Temperature-driven advances in snowmelt-driven streamflow timing throughout western North America: 3rd Biennial CALFED Science Conference, Sacramento, CA, October 2004
- Dettinger, MD, DR Cayan, **IT Stewart**, and N Knowles, 2004. Climate change and western water – Observations and projections: Western Water Supply Challenges Workshop, Salt Lake City, September 2004.
- Stewart, IT**, DR Cayan, and MD Dettinger, 2004. The climate connection for North American streamflow timing changes. 21st Annual PACLIM Workshop, Pacific Grove, CA, March 2004.
- Cayan DR, MD Dettinger, N Knowles, and **IT Stewart**, 2003. Fluctuations of rain versus snow in the mountainous west. NOAA 28th. Climate Diagnostics and Prediction Workshop, Reno, NV.
- Cayan DR, MD Dettinger, **IT Stewart**, and N Knowles, 2003. Changes in snowmelt runoff over western North America over the last 5 decades. American Meteorological Society, 83rd Annual Meeting, Impacts of Water Availability Symposium, Long Beach, CA, February 2003.
- Stewart IT**, DR Cayan, and MD Dettinger, 2002. Projections of increasingly earlier snowmelt runoff in the western United States under a 'business-as-usual' climate

change scenario. Eos Trans. AGU, 83(47), Fall Meet. Suppl., Abstract GC21B-0174.

Dettinger MD, IT Stewart, and DR Cayan, 2002. The timing of spring. NOAA California Applications Program Annual Meeting.

Stewart IT, DR Cayan, and MD Dettinger, 2002. What climatic forcings control observed changes in runoff timing across western North America? 5<sup>th</sup> Summer Institute, NOAA Postdoctoral Program in Climate and Global Change, Steamboat Springs, CO, June 17-21, 2002.

Stewart IT, DR Cayan, and MD Dettinger, 2002. Isolation of climatic causes of historical runoff-timing changes in western North America. Nineteenth Annual PACLIM Workshop, Pacific Grove, CA, March 2002.

Stewart IT, DR Cayan, and MD Dettinger, 2001. What drives regionally coherent changes in the timing of snowmelt runoff for streams in the western United States? EOS Trans. AGU, 82(47), Fall Meet. Suppl., Abstract H21G-11.

Dettinger MD, Cayan, DR, Diaz, HF, and Stewart, IT, 2001. Decadal variations and trends in snowmelt and streamflow timing – Global and North American patterns in the 20th century. International HIGHEST II Conference on Climate Change at High Elevation Sites: Emerging Impacts, June 2001, Davos, Switzerland.

Stewart IT and K Loague, 2000. Uncertainty introduced by upscaling type transfer functions. in Proceedings of Accuracy 2000, edited by GBM. Heuvelink and MJPM Lemmens, pp. 617-624, Delft University Press, Netherlands.

Stewart IT, and K Loague, 1999. Development of 3-D data sets for the identification of type transfer functions. EPA STAR conference, Arlington, VA.

Stewart IT, and K Loague, 1998. Type transfer functions for the regional-scale assessment of non-point source groundwater contamination in Fresno County, CA. Groundwater Quality '98 conference in Tuebingen, Germany.

Stewart IT, and K Loague, 1998. Characterization of non-point-source vadose-zone pesticide leaching at the regional scale using a transfer function approach. EPA STAR conference, Arlington, VA.

Stewart IT, and K Loague, 1997. Identification of 'type' transfer functions for regional-scale assessments of non-point source groundwater contamination in Fresno County, CA. AGU Chapman-SSSA Outreach Conference on Application of GIS, Remote Sensing, Geostatistics, and Solute Transport Modeling to the Assessment of Non-Point Source Pollutants in the Vadose Zone, p. 22. Riverside, CA.

## **CURRENT AND PAST TEACHING ACTIVITIES**

- ENVS 197 "Special Topics: Preparation for the ESRI Desktop Associate Certification Exam" (Winter 2016, Spring 2016)
- ENVS 160 "Water Resources" Lecture and Lab, (Winter 2013, 2015)
- ENVS 117: "Intermediate GIS" (Fall 2015)
- ENVS 116: "Introduction to GIS" (3 sections, Spring 2016)
- ENVS 115: "GIS in the Environmental Sciences". Lecture and Lab. (Fall 2007, 2008, 2009, 2010, 2011, Spring 2012).
- ENVS 23 Introduction to Earth Systems (previously ENVS 13 "Soil, Air & Water"). Lecture and Lab. (Spring 2007, 2008, 2009; 2010; Winter 2010, 2011).
- ENVS 20: "The Water Wars of California". Lecture and Lab. (Winter 2008, 2009)
- CENG 139 "Groundwater Hydrology". Department of Civil Engineering, Santa Clara University (Spring 2005)
- GEOL 130L, 131L, 132L: Environmental Geology Laboratory. Stanford University.
- GEOL 101: Introduction to Geology. University of Hawaii at Manoa

## **GUEST LECTURES, INTERVIEWS AND SEMINAR PRESENTATIONS**

- 05/2016 Two guest lectures in Arts&Science 187, Walk Across California
- 05/2016 Guest lecture in Environmental Policy course, SJSU
- 05/2016 Editorial piece published in the Ignatian Center's Explore magazine
- 04/2016 Guest lecture in ENV5 80, Energy and the Environment
- 01/2015 Interviewed for the LA Times on shrinking snowpack  
<http://www.latimes.com/science/la-me-snowpack-20150130-story.html>
- 03/2014 A spatial analysis of cumulative environmental impacts in Santa Clara County. Step-Up Silicon Valley, Santa Clara, CA.
- 03/2014 Declining water quality in Sierra Nevada mountain streams under projected climatic changes. San Jose Peace and Justice Center.
- 02/2013 Impacts of climatic changes on water resources. San Jose State University.
- 11/2011 ESS Seminar Series, Santa Clara University, Santa Clara, CA
- 07/2011 What changes in water supply and quality can we expect from projected climatic changes? Insights from the Western U.S. mountains. University of Muenster, Germany (invited)
- 10/2010 Invited panelist and participant at EPA Panel "Interacting effects of climate and nitrogen on ecosystems and their services. October 12-13 2010, Arlington, VA.
- 02/2010 Invited panelist "Focus the Nation: Climate Change", Santa Clara University, CA
- 02/2010 Guest lecturer for 'Public Health Equity in the News' (COMM164),
- 02/2009 Guest lecturer for TESP 84
- 03/2008 Chronicle of Higher Education. Resulted in the article "California's Blue Gold" featuring my course "ENV520: The Water Wars of California".
- 02/2008 GIS Guest lecture for the course "Historical Ecology" at Santa Clara University
- 05/2004 CE 140, Department of Civil Engineering, Santa Clara University (2 lectures)
- 05/2004 Interview with National Public Radio for "Earth and Sky" weekly program
- 05/2004 "The West's Snow Resources in a Changing Climate." Contributed to testimony before the U.S. Senate Committee on Commerce, Science, and Transportation presented by Philip Mote (University of Washington).
- 03/2003 Spring Seminar Series, Department of Civil and Environmental Engineering, University of Stuttgart, Germany
- 03/2002 Spring Seminar Series, Department of Civil Engineering, UC Berkeley, Berkeley, CA
- 06/2001 Hydroclimate Group Seminar Series, Scripps Institution of Oceanography, La Jolla, CA
- 11/2000 Stanford Hydrogeology Seminar Series, Stanford, CA
- 02/1999 Lawrence Berkeley National Laboratory Earth Science Division Seminar Series, Berkeley, CA
- 02/1998 Stanford Hydrogeology Seminar Series, Stanford, CA

## **PROFESSIONAL SOCIETIES**

American Geophysical Union  
Union of Concerned Scientists

Society of Conservation GIS  
American Water Resources Association  
Water Education Foundation  
Association of Women Geoscientists  
Earth Science Women's Network

## **PROFESSIONAL SERVICE**

### *Service to the Profession*

- Reviewer for Water Resources Research, Journal of Climate, Journal of Environmental Quality, Climatic Change, Journal of the American Water Resources Association, Journal of Hydrology, Geophysical Research Letters, Environmental Management
- Session and panel organizer at yearly AGU conference and others (i.e. AAG conference 2016)
- Tenure reviewer (outside expert) (2013, 2016)
- Expert witness for AB32, the California Greenhouse Gas Lawsuit on behalf of the State of California and several Environmental Organizations (2006 – 08)
- Reviewer for the PAN Pesticide Database (2007)
- Advisor to the 'Energy Project' (Sound Vision Productions) (2008)
- USGS volunteer (2008 -2010)
- AGU media advisor volunteer (2009)
- Guest editor for Climatic Change (2011 – 12)
- Judge, Tech Awards, Santa Clara, CA (2011, 2012)

### *Service to the Department (Environmental Studies Institute (ESI) prior to 2011, Department of Environmental Studies and Sciences (ESS) since 2011, and School*

- STEM chair and departmental STEM liaison (since 2015)
- Department chair (since June 2014)
- Chaired continuous lecturer search (2014), Participated in four faculty searches (2010, 2011, 2014, 2015 (leading role)) and two lecturer searches (2007-09), ongoing hiring of academic year and quarterly lecturers
- Built and managed the GIS computer lab of the Environmental Studies Institute at Santa Clara University (2007 – 10) & ongoing coordinator
- Coordinating Program Review for department (2016 - 2017)
- Participated in ESI self-study activities and report for WASC accreditation (2009-2010)
- Participated in report and activities to establish the ESS department (previously ESI) (2009 -2011)
- Contributed to revision of ESS majors curriculum (2010- 2011)
- Faculty advisor for student clubs, Global Water Brigades (2008-2009) and Green Club
- Department Library Liaison (2009 – 11)
- ESS Faculty Senate Representative (2011-12)

### *Service to the College and University*

- Co-founded interdisciplinary research group to examine environmental justice issues in Santa Clara County in conjunction with community partners
- Organized 'Water Week' on campus (2011)
- Organizing committee for "Our common home" conference in response to the papal encyclical "Laudato Si" at Santa Clara University, Summer and Fall 2015

- STEM liaison
- Member of working group to develop inclusive excellence postdoctoral program
- Global Social Benefit Intern mentor

*Service to the community*

- Community outreach for environmental education in preK-6 classes
- Consulting and volunteer work for the Santa Clara Creeks Coalition, Guadalupe River Park Conservancy, Tuolumne River Trust
- Participating in river clean-up events