

BARBARA A. GIBSON

Dept of Earth, Atmospheric, and Planetary Sciences (EAPS)
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EDUCATION

Ph.D. (Interdisciplinary in Geography and Geology), University of Oklahoma, 2001
Dissertation: A Geotechniques-based exploratory investigation of vog impacts to the environmental system on Hawai`i Island
B.S. in Geosciences, University of Oklahoma, 1994; **Minor:** Geology

PROFESSIONAL EXPERIENCE

2020-pres **Assistant Professor of Practice, Earth, Atmospheric, and Planetary Sciences (EAPS), Purdue University, West Lafayette, IN**

2013-19 **Assistant Department Head, Earth, Atmospheric, and Planetary Sciences (EAPS), Purdue University, West Lafayette, IN**

2011-13 **Diversity Director, Center for Science of Information, Purdue University, West Lafayette, IN**

2008-12 **Faculty Specialist, School of Ocean and Earth Science and Technology (SOEST), Ka`imi`ike Program Director/PI and C-MORE Scholars Program Manager, University of Hawai`i at Manoa, Honolulu, HI**

2004-08 **Assistant Research Faculty and Director, Hawai`i Biodiversity and Mapping Program (HBMP), Center for Conservation Research and Training, Pacific Biosciences Research Center, University of Hawai`i at Manoa, Honolulu, HI**

2001-04 **Assistant Professor/NSF Hawai`i EPSCoR Thrust Leader, Department of Geography and Environmental Studies, University of Hawai`i at Hilo, Hilo, HI**

2001-04 **Associate Director for Hawai`i Space Grant Consortium at the University of Hawai`i at Hilo, Hilo, HI**

2000-01 **Assistant Visiting Professor, Cartography and Geography Dept., East Central University, Ada, OK**

1994-99 **Project Coordinator, The Schools of the Pacific Rainfall Climate Experiment (SPaRCE), College of Geosciences, University of Oklahoma**

1997, 98 **Oceanographer/Physical Scientist - Cooperative Internship, Naval Oceanographic Office (NAVOCEANO), NASA Stennis Space Center, MS**

GRANTS

- Instructional Equipment Grant (Purdue University): \$50,000, 2013, Co-I.
- NSF, Opportunities for Enhancing Diversity in the Geosciences, "Ka`imi`ike: Explorations in the Geosciences for Native Hawai`ians and Pacific Islanders", \$540,195.00, 2007-13, PI

- Hawai`i County, "Identification and Zoning of Near-shore Areas for Marine Aquaculture", \$175,000, 2008-10, Co-I.
- National Park Service (NPS), "Developing Change Vector Methods for PACN Landscape Dynamics", \$54,050, 2006-10, PI.
- Miscellaneous contract funding through HBMP (lab), 2005-07, est. @ \$510,000.
- Kamehameha Schools, Ocean and Coastal Assessment of Kamehameha Schools Land, \$20,815, 2006, PI.
- USGS, Pacific Basin Information Node (PBIN), "Spatial Data and Mapping Y5", Continuing Grant, \$120,000, 2006-07; PI.
- NSF, Opportunities for Enhancing Diversity in the Geosciences (OEDG), "Ka `Imi `Ike: An initiative to recruit and retain Native Hawai`ians and Pacific Islanders to the Geosciences", \$250,000, 2005-09; PI.
- USGS, Pacific Basin Information Node (PBIN), "Spatial Data and Mapping Y4", \$150,000, 2005-06; PI.
- NASA/USRA Earth System Science Education for the 21st Century (ESSE 21) Grant, "Teaching Global Environmental Change from Mountain to Ocean: The 'Ahupua'a Way", \$69,706, 2003-06; PI
- NSF EPSCoR, UHH IT Thrust Leader (fiscal resp. \$360,000; yr 2003)
- Geographical Response Study for Hazardous Material Incidences, Year 2, Hawai`i Co. \$14,000, 2003; PI
- EA/EIS GIS Inventory for Hawai`i County \$10,000; 2003; PI
- University of Hawai`i at Hilo Educational Improvement Fund Award \$2,000, 2002-03; PI
- AGU Chapman Conference Travel Grant \$600, 2002
- UHH Faculty Travel Grant \$2,000, 2001-02
- Coastal Resources Inventory, Hawai`i County \$10,000, 2002; Co-PI
- Geographical Response Study for Hazardous Material Incidences, Hawai`i Co. \$16,000, 2002; PI
- University of Hawai`i at Hilo Educational Improvement Fund Award \$1,400, 2001-02; PI
- University of Hawai`i at Hilo Faculty Seed Grant \$8,700, 2001-02; PI

AWARDS AND FELLOWSHIPS

- EAPS Purdue University Teaching Honor Roll (SP2017, F2017, SP2018, F2018, F2019)
- Purdue College of Science Engagement Award (2016)
- Faculty Diversity Enhancement Award, Mānoa Commission on Diversity (2010)
- OU Graduate College Dissertation Research Grant, 1999
- ESRI/International Geographic Information Foundation Scholarship, 1998
- Letter of Appreciation from the Commanding Officer, Naval Atlantic Meteorology and Oceanography Center, 1998
- Oklahoma NASA Space Grant Fellowship Awards, 1995-99
- Recipient of NASA/JPL/NOAA Earth Science Summer School Award, 1995

PUBLICATIONS

Refereed Articles:

- Gibson, B., Bruno, B. 2012. "The C-MORE Scholars Program: Motivations for an Academic-Year Research Experiences for Undergraduates Program", *Journal of College Science Teaching*, 1(5): 12-18.
- Wedding, L., Gibson, B., Walsh, W., Battista, T. 2011. "Integrating remote sensing products and GIS tools to support marine spatial management in West Hawai'i", *Journal of Conservation Planning*, 7: 60 – 73.
- Gibson, B., Puniwai, N. 2006. "Developing an Archetype for Integrating Native Hawai'ian Traditional Knowledge with Earth System Science Education", *Journal of Geoscience Education*, 54(3): 287-294.
- Wedding, L., Szuster, B., Friedlander, A., Gibson, B. "Evaluating coral reef fish nursery habitat in a Hawai'ian marine protected area", *Proceedings of the 2006 Coastal Zone Asia Pacific Conference*.
- Gibson, B., Postawko, S., Ensworth, J., Morrissey, M., Wurman, J., and Ellis, S. 2003. "Introducing High-Tech and Low-Tech Geoscience-related Technology to Disadvantaged Schools in the Tropical Pacific". *Journal of Geoscience Education*. 51(2): 201-204.
- Postawko, S., M.L. Morrissey, J.S. Greene, B. Gibson, A. Wood, S. Ellis, D. Harrison, and J.B. McGavock, 1999. "Schools of the Pacific Rainfall Climate Experiment: The Value of Real Science in the Classroom", *Journal of Science Education and Technology*.
- Postawko, S. M. Morrissey, J.S. Greene, and B. Gibson, 1997. "Student-Scientist Partnerships in the Pacific: The Schools of the Pacific Rainfall Climate Experiment". *Journal of Science Education and Technology*.
- Morrissey, M., Shafer, M., Postawko, S., and Gibson, B. 1995. "The Pacific Rain Gage Rainfall Database". *Water Resources Research*, 31(8): 2111-2113.
- Postawko, S., Morrissey, M., and Gibson, B. 1994. "The Schools of the Pacific Rainfall Climate Experiment: Combining Research and Education". *Bulletin of the American Meteorological Society*, 75(7): 1260-1266.

Technical Reports:

- Puniwai, N, Gibson, B. 2005. Marine gap analysis for the main Hawai'ian Islands. Pursuant to NOAA contract, Department of Land and Natural Resources, State of Hawai'i Division of Aquatic Resources, Honolulu.

Conference Presentations:

- Gibson, B A, Bruno, B. 2010. "The C-MORE Scholars Program: Engaging minority students in STEM through undergraduate research", *Eos Trans. AGU, Fall Meet. Suppl.*, Abstract ED31B-0643.
- Gibson, B A, Brock, L, Levine, R, Spencer, L, Wai, B, Puniwai, N. 2008, "Lessons Learned for Recruiting and Retaining Native Hawai'ians in the Geosciences", *Eos Trans.*

- AGU, 89(53), Fall Meet. Suppl., Abstract ED23A-0632.
- Bruno, B.C., Gibson B. 2008. "C-MORE Scholars Program: Encouraging Hawai'i's Undergraduates to Explore the Ocean and Earth Sciences", *EOS Trans. AGU*, 89 (23), Jt. Assem. Suppl., Abstract ED34A-05.
- Gibson, B., Puniwai, N., Sing, D., Ziegler-Chong, S. 2006. "Ka`imi`ike: Explorations in the geosciences from an indigenous perspective", *EOS Transactions AGU*, 87(52), Fall meeting Suppl., Abstract ED51A-0836.
- Gibson, B., McMahan, M., Puniwai, N., Masaki, D. "Internet Mapping and GIS Catalog Services for Sharing Biological and Conservation-related Data for the Pacific Basin", ESRI Regional Users Group Conference, Honolulu, March 2006.
- Gibson, B., Puniwai, N., Ziegler-Chong, S., Perez-Frayne, C. "EHR: Support for the Sciences at UH Manoa and UH Hilo", 2006 Hawai'i EPSCoR meeting, Kona, HI.
- Gibson, B., McMahan, M., Masaki, D. "Utilizing GIS and Internet Mapping Services to Share Biological Data in the Pacific Basin", NBII All Nodes Meeting, New Mexico, 2005.
- Gibson, B., Ostertag, B., Juvik, J., Parsons, M. "Teaching Environmental Change from the Mountain to the Ocean", ESSE21/ USRA Annual Meeting, Fairbanks, AK. 2005.
- Gibson, B., Spelbrink, J., Meenan, P. "Monitoring Native Dryland Forest Recovery in the Pu`u Wa`awa`a Dryland Forest". ISRE, Honolulu, HI 2003.
- Williams-Jones, G., Flynn, L., Harris, A., Mouginiis-Mark, P., Gibson, B., Delmelle, P. "The Effects of Persistently Degassing Volcanoes on the Natural Environment". Cities on Volcanoes III, Hilo, HI, 2003.
- Gibson, B., Wedding, L. "Benthic Habitat Mapping of West Hawai'i Marine Life Conservation Districts". ESRI RUGS Conference, Honolulu, HI March 3-5, 2003.
- Williams-Jones, G., Flynn, L., Harris, A., Gibson, B., Mouginiis-Mark, P. 2002. "The Effects of Persistently Degassing Volcanoes on the Natural Environment as Exemplified by Kilauea, Masaya and Poás Volcanoes". *EOS Transactions AGU*, 84(46), Fall meeting Suppl.
- Gibson, B., Postawko, S., Greene, J., Morrissey, M. "Long-term impacts of vog from Kilauea Volcano on Hawai'i Island's Climate". AGU Chapman Conference on Volcanism and the Earth's Atmosphere, Thera, Greece; June 17-21, 2002.
- Gibson, B., Shafer, M., Morrissey, M.L., and Greene, J.S. "Obtaining average area estimates of precipitation from point measurements: An objective of the SRDC", Presented at the 79th Annual American Meteorological Society Meeting, Dallas, Texas, January 1999.
- Mesick, S., Booda, M., and Gibson, B. "The Automated Detection of Oceanic Fronts and Eddies from Remotely Sensed Satellite Data Using ARC/INFO GRID Processing", Proceedings of the 1998 ESRI International Users Conference.
- Gibson, B., Postawko, S., Morrissey, M., and Wurman, J. "The Pacific Rainfall Climate Experiment: Using Technology to Study the Earth System", Presented at the Second International Conference on Geoscience Education, Hilo, Hawai'i, July 1997.

- Gibson, B., Postawko, S., and Humes, K. 1997. "A GIS Analysis of Environmental Impacts Due to Acid Deposition From Kilauea Volcano, Hawai'i". *EOS Transactions*, American Geophysical Union, v.78, no. 46, p. F201.
- Gibson, B., Postawko, S., Morrissey, M. 1996. "Investigating Possible Environmental Impacts from Sulfur Gases and Aerosols Released by Kilauea Volcano Using Satellite Imagery". *EOS Transactions*, American Geophysical Union, v. 77, no. 46, p. F36.
- Postawko, S., Morrissey, M., and Gibson, B. "Schools of the Pacific Rainfall Climate Experiment: Bringing Global Issues to the Local Classroom". Presented at the 4th *Symposium on Education, American Meteorological Society Annual Meeting*, Dallas, TX, January 1995.

WORKSHOPS/INVITED PRESENTATIONS

- "Remote sensing in the classroom", Guest lecture for the *Intro to GeoTech: GPS, GIS, & Remote Sensing* online course for K12 Teachers of Hawai'i, sponsored by Women in Technology, October 2010 & April 2009.
- "Ocean acidification: The other CO₂ problem!", Future Tech Now! NSF STC Exhibit at the 2010 Society for Advancing Hispanics/Chicanos & Native Americans in Science (SACNAS) annual meeting.
- "The Mysterious Satellite GPS Challenge", Lacy Veach Day Workshop, 2010.
- "Geocaching: Adventures with GPS and Satellites", Lacy Veach Day Workshop, 2006-09.
- "Using proximal remote sensing and GIS to determine the impacts of vog/SO₂ on native vegetation", Univ. of Hawai'i at Manoa, Botany Dept Seminar Series (invited), May 2006.
- "Introduction to Mapping Marine Resources w/ a Handheld GPS", Nā Pua O Maunaloa student workshop, October 2005.
- "Intro to Mapping with ArcView 3.x GIS", through Hawai'i Community College, January 2004.
- "Intro to Mapping with ArcView GIS", through University of Hawai'i at Hilo College of Continuing Education, June 2003.
- "Introduction to Mapping with Global Positioning Devices", through Hawai'i Community College. August 2002; February 2003; July 2003.
- "Satellite and Mapping and GIS for Fun", Invited workshop for the 12th Annual "Into the World of Tomorrow" Math and Science Conference for 7th Grade Girls, by the Girl Scouts and American Association of University Women, Hilo, HI, March 2003.
- "Pathways and obstacles towards applying geoinformatics for natural resource management in the Pacific Basin", Invited presentation at the Expert Meeting on the Development of a Field- Survey and Geo-informatics Training Module for Asian NGOs", Okinawa, November 2002.
- "Instruments of Change - How We Measure the Weather", Presented at the 12th *Annual Pacific Educational Conference*, Koror, Republic of Palau, August 1995.
- "Schools of the Pacific Rainfall Climate Experiment: A Hands-on Workshop for Teachers", Presented at the 11th *Annual Pacific Educational Conference*, Saipan, CNMI, August 1994.

PROFESSIONAL MEMBERSHIPS

- American Geophysical Union
- Geological Society of America

CURRENT AND PAST SERVICE

- Purdue College of Science Staff Professional Development Committee
- Leadership Board Member – Indiana Girls Collaborative Project
- SOEST Education and Outreach Council
- Member, UH Manoa Community of Practice (COP) for Pacific Alliance for Supporting Individuals with Disabilities in STEM Fields Partnership
- HIGICC Education and Outreach Committee
- Former member, Board of Directors for Hawai'i Geographic Information Coordinating Council (HGICC)
- Cooperating Graduate Faculty, Geography Dept., University of Hawai'i at Manoa
- Proposal Reviewer, NASA Global Climate Change Education Program (multiple times), and NSF

COURSES TAUGHT

- EAPS 10000 Planet Earth Online (Purdue University)
- EAPS 12000 Intro to Geography (Purdue University)
- GEOG 101 Geog & Nat Environ (University of Hawai'i at Hilo)
- GEOG 201 Interp Geog Data (University of Hawai'i at Hilo)
- GEOG 319 Nat Hazards/Disasters (University of Hawai'i at Hilo)
- GEOG 326 Natural Resources (University of Hawai'i at Hilo)
- GEOG 470 Remote Sensing/Air Photo (University of Hawai'i at Hilo)
- GEOG 480 Geog Info Sys & Visualization (University of Hawai'i at Hilo)
- GEOG 481 Advance Geo-Spatial Techniques (University of Hawai'i at Hilo)
- GEOG 2443 Regional Geography of the World (Adjunct, Rose State College, OK)
- GEOG 2603 World Regional Geography (Instructor, University of Oklahoma)

STUDENT ADVISEES

Past:

Will Smith, Ph.D. in Geography

Tomoko Suzuki, M.S. in NREM

Lisa Wedding, B.A. in Marine Science (Mentor)

Whitney Reyes, B.A. Botany (Mentor)

Vy Luu, AA Liberal Studies (KCC)