

Geological Sciences Department Annual Report 2012-2013

CALENDAR YEAR ACCOMPLISHMENTS (January 1, 2012 through December 31, 2012)

I. Research, Scholarship and Creative Activity of Faculty Members Performed Individually or in Collaboration with Others Including Students.

In each subsection directly below, distinguish between CPP authors using the following indicators: faculty member (bold), undergraduate student ([#]), graduate student (^{##}), off-campus contributor (no distinction required).

- a. Publications (Externally Peer Reviewed):** *At a minimum include author(s), year of publication, article title, journal name, volume, and page numbers. Although APA style is requested, inclusion of the minimum elements is acceptable.*
Do not include papers in preparation or under review. These will be reported in future years when published.

Osborn:

Warner, N.R., Jackson, R.B., Darrah, T.H., **Osborn, S.G.**, Down, A., Zhao, K., White, A., and Vengosh, A. (2012). Geochemical evidence for possible natural migration of Marcellus Formation brine to shallow aquifers in Pennsylvania. *Proceedings of the National Academy of Sciences* 109 (30), pp. 11961-11966.

Warner, N.R., Jackson, R.B., Darrah, T.H., **Osborn, S.G.**, Down, A., Zhao, K., White, A., and Vengosh, A. (2012). Reply to Engelder: Potential for fluid migration from Marcellus Formation remains possible. *Proceedings of the National Academy of Sciences* 109 (52), E3626.

Osborn, S.G., McIntosh, J.C., Hanor, J.S., and Biddulph, D. (2012). Iodine-129, 87Sr/86Sr, and trace elemental geochemistry of northern Appalachian Basin brines: Evidence for basinal-scale fluid migration and clay mineral diagenesis. *American Journal of Science* 312 (3) pp. 263-287.

Polet:

Butcher[#], A. J., **Polet, J.**, & Thio, H. K (2012) . Detecting and Locating Earthquakes in the Northern Gulf of California Using Surface Wave Back-Projection. *Seismological Research Letters*, Volume 82 (2), p. 341.

Greenwood[#], R. N., **Polet, J.**, & Thelen, W. A. (2012) . Measurements of Volcanic Tremor at Kilauea from a Temporary Seismic Deployment, *Seismological Research Letters*, Volume 82 (2), p. 343.

Lino[#], S. I., Ho[#], K. K., & **Polet, J.** (2012). Analysis of Micro-Seismicity and Site Response Using Waveform Data from a Small Broadband Deployment on Cal Poly Pomona Campus, *Seismological Research Letters*, Volume 82 (2), p. 334.

Potter[#], H., Pazos[#], C., & **Polet, J.** (2012). Gravity Profiles across the San Jose Fault on the Cal Poly Pomona Campus, *Seismological Research Letters*, Volume 82 (2), p. 342.

Thio, H.K. & **Polet, J.** (2012), Probabilistic Tsunami Hazard Analysis, 9 p., *Proceedings of the 15th World Conference on Earthquake Engineering*, Lisbon, Portugal, 24-28 September.

Thio, H.K. & **Polet, J.** (2012), Tsunami early warning based on surface wave inversion techniques, 8 p., *Proceedings of the 15th World Conference on Earthquake Engineering*, Lisbon, Portugal, 24-28 September.

- b. Publications (NOT Externally Peer Reviewed)** – Include MS theses, non-peer reviewed abstracts published in a journal or proceeding (that carries an ISSN or ISBN number), gray literature including patents, technical reports, guides, handbooks, reviews produced on behalf of government agencies (e.g. USGS) or scientific groups (e.g. National Academy of Sciences). Litmus test for inclusion: the publication is cataloged and therefore likely to be available through interlibrary loan. Do not include conference abstracts appearing exclusively in on-line/in-print program booklets. These should be listed below in Section I.d. “Presentations”.

Jessey:

Jessey, David R., Baltzer, S. M.##, Jorgensen, J.#, and Bruns, J.#, 2012, Preliminary Report On Rare Earth-Gold Prospects, Andrew Mayo Consortium, Sydney, Australia, 28p.

Sargent, J. G.# (2012) Investigation of Mineralization Related to Detachment Faulting Northeastern Sacramento Mountains, CA, Senior Thesis, Cal Poly Pomona, 32 p. (**David Jessey** advisor)

Nourse:

Bloom, C.S.# (2012), Investigation of Base Flow Recession of Lower San Antonio Creek and Surrounding Springs, Senior Thesis, Cal Poly Pomona, 19 p. plus attachments (**Jon Nourse** advisor)

Kurashige, J. K.#, (2012) Water Quality Analysis of Natural Springs in San Antonio Canyon, Senior Thesis, Cal Poly Pomona, 49 p. plus attachments (**Jon Nourse** advisor)

Marshall:

LaFromboise^{##}, E.J., 2012, Neotectonism of the Nicoya Peninsula, Costa Rica: Geomorphology and earthquake relocations along the Nicoya seismic gap (M.S. Thesis), Geological Sciences Department, California State University, Northridge,

- c. Published Books/Chapter(s) in Books (as Author or Editor)** - Do not include publications for which you served as a reviewer. This activity should be listed below in Section V.d. “Service to Profession”.

- d. Presentations at Professional Conferences** – Include author(s), year and month of presentation, title of presentation, conference name, conference location (city, state). Distinguish among conference types using the following indicators: local/regional (L/R), state (S), national (N), international (I), peer reviewed (*), non-peer reviewed (no distinction required).

Jessey, D. R. (2012) Geology and Tectonics of the Eastern Mojave Desert, Society of Mining Engineers, Pomona Valley Mining Company, February 18 (L/R)

Agee-Acosta, N.#, Gepford, C.#, Schoniger, S. #, Coronado, A. #, Villalpando, O. #, Ali, K. #, Thongchua, N. #, **Ravi, V.**, and **Klasik, J.A.** (faculty advisors), (2012), The Effect of Chromium Content on the Hot Corrosion of Nickel Chromium Alloys in Molten Sodium Sulfate, Los Angeles Chapter of ASM (American Society for Metals) (L/R*).

Bloom, C.S.# and Nourse, J. A. (2012), Investigation of Base Flow Recession of Lower San Antonio Creek and Surrounding Springs, College of Science Research Symposium, Cal Poly Pomona, June 8

Kurashige, J. K.#, (2012) Water Quality Analysis of Natural Springs in San Antonio Canyon, Senior Thesis, Cal Poly Pomona, 49 p. plus attachments (**Jon Nourse** advisor)

Marshall, J.S., 2012 (January), The Cal Poly Pomona Water Initiative: Water as a central theme for research, teaching, technical training, and community outreach: Southern California Water Technology Conference, University of La Verne, La Verne, California, Jan. 26, 2012. (L/R)

*Barnhart, A., and **Marshall, J.**, 2012 (November), Formation of beachrock horizons of the Nicoya Peninsula, Costa Rica: 20th Annual Southern California Conference on Undergraduate Research

- (SCCUR), 17 November 2012, California State University Channel Islands, Camarillo, California, Abstracts and Proceedings, Abs 116. (L/R)
- ***Marshall, J., Osborn, S., Morrish^{###}, S., Barnhart[#], A., Wenceslao[#], L., Landeros[#], M., Butcher[#], A., Ritzinger[#], B., Wellington[#], K., Protti, M., Spotila, J., 2012 (December), Beachrock horizons of the Nicoya Peninsula, Costa Rica: Implications for coastal neotectonics and paleogeodesy: *Eos Transactions American Geophysical Union*, v. 93, *Fall Meeting Supplement*, Abs EP54A-08. (N)**
- ***Marshall, J., Morrish^{###}, S., LaFromboise^{###}, E., Butcher[#], A., Ritzinger[#], B., Wellington[#], K., Barnhart[#], A., Kinder[#], K., Utick[#], J., Protti, M., Gardner, T., Fisher, D., Simila, G., Spotila, J., Owen, L., Murari, M., and Cupper, M., 2012 (April), Morphotectonic segmentation along the Nicoya Peninsula seismic gap, Costa Rica, Central America: 2012 Seismological Society of America Meeting, *Seismological Research Letters*, v. 83, no. 2, p. 374. (N)**
- ***Dong, W., and Marshall, J.S.**, 2012 (March), Transformative undergraduate research engagement: A multi-faceted approach: American Association of Colleges and Universities (AAC&U), Network for Academic Renewal Conference: Student Success - Pushing Boundaries, Raising Bars, March 22-24, 2012, Seattle, Washington, Program with Abstracts, p. 2. (N)
- *Simila, G., **Marshall, J.**, Gardner, T., Fisher, D., Protti, M., Quintero, R., LaFromboise^{###}, E., Morrish^{###}, S., and Mohammadebrahim, E., 2012 (April), Seismic cycle deformation along the Nicoya Peninsula seismogenic zone, Costa Rica: Morphotectonics and Seismic Strong Motion Array Project (SSMAP): *Geophysical Research Abstracts*, v. 14, European Geosciences Union General Assembly, 22-27 April 2012, Vienna, Austria, Abs. 01612. (I)
- Jackson, R.B., Vengosh, A., Down, A., Warner, N.R., **Osborn, S.G.**, and Zhao, K. (August, 2012). Ecological and environmental dimensions of shale gas extraction. 2012 Annual Meeting, Ecological Society of America Meetings, Portland, OR. (N*)
- Butcher[#], A. J., **Polet, J.**, & Thio, H. K. (2012, April). Detecting and Locating Earthquakes in the Northern Gulf of California Using Surface Wave Back-Projection. 2012 Annual Meeting of the Seismological Society of America, San Diego, CA. (N*)
- Greenwood[#], R. N., **Polet, J.**, & Thelen, W. A. (2012, April). Measurements of Volcanic Tremor at Kilauea from a Temporary Seismic Deployment. 2012 Annual Meeting of the Seismological Society of America, San Diego, CA. (N*)
- Lino[#], S. I., Ho[#], K. K., & **Polet, J.** (2012, April). Analysis of Micro-Seismicity and Site Response Using Waveform Data from a Small Broadband Deployment on Cal Poly Pomona Campus. 2012 Annual Meeting of the Seismological Society of America, San Diego, CA. (N*)
- Potter[#], H., Pazos[#], C., & **Polet, J.** (2012, April). Gravity Profiles across the San Jose Fault on the Cal Poly Pomona Campus, 2012 Annual Meeting of the Seismological Society of America, San Diego, CA. (N*)
- Butcher[#], A. J., & **Polet, J.** (2012, June). Detecting and locating earthquakes in the northern Gulf of California using surface wave back- projection. 7th Annual Science Research Symposium, Cal Poly Pomona, CA. (L)
- Greenwood[#], R. N., & **Polet, J.** (2012, June). Volcanic tremor measurements around Halemaumau crater at Kilauea volcano from a temporary seismic deployment. 7th Annual Science Research Symposium, Cal Poly Pomona, CA. (L)
- Lino[#], S. I., & **Polet, J.** (2012, June). Analysis of micro-seismicity on the Cal Poly Pomona campus. 7th Annual Science Research Symposium, Cal Poly Pomona, CA. (L)
- Thio, H.K. & **Polet, J.** (2012, September). Probabilistic Tsunami Hazard Analysis, 15th World Conference on Earthquake Engineering, Lisbon, Portugal. (I*)

- Thio, H.K. & **Polet, J.** (2012, September). Tsunami early warning based on surface wave inversion techniques, 15th World Conference on Earthquake Engineering, Lisbon, Portugal. (I*)
- Fielding, E., Lundgren, P., **Polet, J.**, Taymaz, T., Owen, S., Simons, M., Motagh, M. and Yun, S.H. (2012, December). Combined InSAR, Pixel Tracking, GPS, and Seismic Waveform Analysis for Fault Slip Evolution Model of the 2011 M7.1 Van Earthquake in Turkey and InSAR Time-series Analysis for Postseismic Deformation. American Geophysical Union 2012 Fall Meeting, San Francisco, CA. (N*)

II. Grant Activities

- a. **Extramural Grants (New)– Submitted in 2012.** Indicate current status as: pending (P), not funded (NF), funded (F).

Marshall, J., The geomorphic footprint of megathrust earthquakes: A field investigation of convergent margin morphotectonics, Nicoya Peninsula Costa Rica, Keck Geology Consortium (NSF Sub-Award), \$58,750, June 2013-May 2014. (F)

Marshall, J., Mw7.6 Costa Rica Earthquake Rapid Response Fieldwork: Nicoya Peninsula Coseismic Coastal Uplift, NSF GeoPRISMS Program: Rapid Response Grant, \$2,000, Sep. 2012-Dec. 2012. (F)

Marshall, J., Collaborative Research: Bringing NSF MARGINS/GeoPRISMS Continental Margins Research into the Undergraduate Curriculum, NSF TUES Program, \$19,400, Sep. 2012-Aug. 2014. (F)

Wickler, N., et al., Reinvigorating Elementary Science through Partnerships with California Teachers (RESPECT): A STeLLA Master Teacher Approach, NSF MSP Program. (F)

Osborn, S.G., Acquisition of an Isotopic (Oxygen and Hydrogen) Water Analyzer for Hydrogeological and Biological Research, National Science Foundation (NSF), Major Research Instrumentation Program, Jan 2012. (NF)

Osborn, S.G. (PI on sub-award), Routes to Sustainability for Natural Gas Development and Water and Air Resources in the Rocky Mountain Region, NSF - Sustainability Research Networks, \$750,000 (5 years). October 2012 - September 2017. (F)

Polet, J., Pasadena City College-Cal Poly Pomona STEM Pathways in Environmental Sciences, Pasadena City College/United States Department of Education, \$321,250. May 2012-Sept. 2012. (F)

Polet, J., Pasadena City College-Cal Poly Pomona STEM Pathways in Environmental Sciences, Pasadena City College/United States Department of Education (Year 2), \$282,923. Sept. 2012-Sept. 2013. (F)

Polet, J., Seamless Collaboration Ecosystem for Earth Science Data, NASA, \$83,165. Oct. 2012-Sept. 2014. (NF)

Polet, J., Microseismicity Study of the Koa'e Fault System on the Big Island of Hawaii, USGS, \$79,720. Sept. 2013-Aug. 2014. (NF)

Polet, J., Incorporating Hypocentral Depths in Rapid Estimates of Rupture Extent for Large Earthquakes, USGS, \$44,396. Jan. 2013-Dec. 2013. (NF)

Polet, J., Rapid Finite Fault Inversion for Earthquakes in Southern California Using the Cybershake Library of 3D Green's Functions: Collaborative Research with URS Group Inc and California State Polytechnic University in Pomona, USGS, \$58,551. Jan. 2013-Dec. 2014. (NF)

Polet, J., Seismotectonics of Intraplate Oceanic Earthquakes, NSF, \$320,588. Sept. 2013-Aug. 2015. (NF)

- b. **Extramural Grants (Ongoing) - Received prior to 2012** and continuing into, through, or beyond 2012.

Marshall, J., Collaborative Research: Seismogenesis of the Middle America Trench at the Nicoya Peninsula over multiple seismic cycles, NSF MARGINS Program, \$90,000, Jan. 2010-Dec. 2012.

Walton, E., et al., Three Strategies to Improve STEM Graduation Rates, Cal Poly Pomona University, NSF STEP Program, Jun. 2010-May 2013.

Burke, B., et al., Comprehensive Scholarship Program for Mathematics, Physical, Biological, and Computer Science Majors, Cal Poly Pomona University, NSF S-STEM Program.

Polet, J., Seismicity of the Southern end of the M7.2 El Mayor-Cucapah Earthquake Sequence from Surface Wave Back-Projection, University of Southern California/National Science Foundation, \$15,000. Feb. 2011-Jan. 2012.

Polet, J., US Geologic Survey Intergovernmental Personnel Act 2011, USGS, \$16,484. Mar. 2011-Feb. 2012.

Polet, J., Contribution to the ARIA-EQ System Development, California Institute of Technology/NASA, \$120,000. Sept. 2011-Sept. 2013.

Polet, J., Improving the use of depth phases in routine estimates of depth and location of earthquakes: collaborative research with California State Polytechnic University in Pomona and URS Corporation, USGS, \$39,623. Sept. 2011-Aug. 2013.

c. Intramural Grants (New) - Submitted in 2012. Indicate current status as: pending (P), not funded (NF), funded (F).

Marshall, J., Tracking Tectonic Uplift Using Holocene Beachrock Horizons: Nicoya Peninsula Seismic Gap, Costa Rica, Kellogg FuTURE Program, \$2000, April 2012-Sep 2012. (F)

Marshall, J., Origin and morphology of carbonate beachrock deposits of the Nicoya Peninsula, Costa Rica, CPP-Citrus College Race to STEM Program, \$3,400, Jun. 2012-Sep. 2012. (F)

Marshall, J., The morphotectonic footprint of megathrust earthquakes: Coseismic coastal uplift during the 2012 Mw7.6 Nicoya earthquake, Costa Rica, Kellogg RSCA Program, \$10,000. (NF)

Marshall, J., Kellogg International Field Studies Program, Kellogg Foundation: Kellogg Legacy Project Endowment, \$112,500, Jul. 2012-Jun. 2015. (NF)

Osborn, S.G., 2012-2014 Provost Teacher-Scholar, Cal Poly Pomona, \$11,000 (F)

Polet, J., A Microseismicity Study of the Sierra Madre-Cucamonga Fault Transition, W. K. Kellogg Foundation, \$10,000. July 2012-June 2013. (F)

d. Intramural Grants (Ongoing) - Received prior to 2012 and continuing into, through, or beyond 2012.

Marshall, J., Kellogg Fund for Transformative Undergraduate Research Engagement (Kellogg FuTURE Program), Kellogg Foundation: Kellogg Legacy Project Endowment, \$130,000, Jul. 2011-Jun. 2014.

III. Professional Awards and Honors to Faculty Members

Polet:

Invited seminar speaker, Department of Geological Sciences, California State University, Fullerton.

IV. Scholarship with Students - In each subsection directly below, distinguish among student populations using the following indicators: graduate student (G), undergraduate student (UG), high school student (H).

- a. **Research Involving Students as Researchers** – Include student's name, (status), research topic/area of study.

Berry:

James Magana (UG), dental morphometrics of miscellaneous tyrannosaurid specimens from the Kirtland Formation of New Mexico.

Marianne Grillo (UG) New Catalog System for the Bernard O. Lane Paleontology Laboratory

Taylor Van Hoorebeke (UG) , Possibility of enhanced hydrocarbon recovery from Miocene reservoir rocks of the Brea Olinda field in Orange County, CA.

Klasik:

(UG): I work closely with students in the Chemical and Materials Engineering Department. I provide instruction, guidance and supervision for students using the Geology Department's X-ray diffraction instrument. In 2012 I supervised seven CME students. Three teams use the Geology X-ray diffraction instrument (the Composites, Hot Corrosion and the Coatings teams). The Hot Corrosion undergraduate team won third place at the student research competition held by the Los Angeles Chapter of ASM (American Society for Metals) International.

(UG) Geology Department's X-ray fluorescence instrument is also augmenting CME student research. Thus far, I have conducted all the fluorescence analyses of samples provided by students.

Jessey:

Suzanne Baltzer (G-CSULA), Research Assistant on consulting project for Andrew Mayo Consortium, Sydney, Australia

Jessica Bruns (UG-CPP), Research Assistant on separate consulting projects funded by Andrew Mayo Consortium and Megan Shockley, Attorney-at-Law, Tustin, CA

Jason Jorgenson (UG-CPP), Research Assistant on separate consulting projects funded by Andrew Mayo Consortium and Megan Shockley, Attorney-at-Law, Tustin, CA

Marshall:

Lilibeth Wenceslao (UG), Photomicrograph Catalog of Beach rock samples from Nicoya Peninsula, Costa Rica

Shawn Morrish (G),

Rob Ellis (G), Geomorphic analysis of Pleistocene and Holocene Stream Terraces in North Fork San Gabriel Canyon

Nourse:

Christina Bloom (UG), Investigation of Base Flow Recession of Lower San Antonio Creek and Surrounding Springs

Jennifer Kurashige (UG), Water Quality Analysis of Natural Springs in San Antonio Canyon

Christina Heinlein (UG), Analysis of Historical Flood Runoff in San Antonio Canyon

Anthony Mack (UG), Igneous Intrusions and Hydrothermal Metamorphism of Copper Mountain Near Joshua Tree, San Bernardino County

Lauren Palmquist (UG), Structural Analysis of Polydeformed Precambrian Gneisses in Lower West Fork San Gabriel Canyon

Audra Hanks (UG), Late quaternary Evolution of the East-Central San Gabriel Mountains Frontal Fault System

Andrew McLarty (G), Reactivation and Brittle Fault Overprinting of the Eastern Rand Thrust System, Northwest Mojave Desert, CA

Logan Wicks (G), Investigation of Wingate Springs and Kerkhoff Canyon, San Gabriel Mountains

Susan Perez (G), GIS Investigation of Upper San Antonio and Icehouse Canyons, San Gabriel Mountains

Osborn:

Gonzalez, Jazmin (UG). Water Quality of Thompson's Creek Watershed, Claremont, CA

Van Oosbree, Greg (UG), Water Quality of the Santa Anita Canyon Watershed

Joshua Sargent (G), Field Sampling and Hydrochemical Investigation of Gas Wells in Northern Colorado

Joshua Park (G), Hydrochemical and Stable Isotope Analysis of Gas Wells in Northern Colorado

Polet:

Amber Butcher (UG), Use of a surface wave back-projection method to locate earthquakes in the Gulf of California.

Rebecca Greenwood (UG), Volcanic tremor recorded during a short term temporary deployment near Kilauea, Hawaii.

Rachel Hatch (UG), Earthquakes triggered in southern California by the 2010 Baja earthquake.

Kennis Ho (UG), Determining Site Response from Seismic Noise Measurements on Cal Poly Pomona Campus.

Susana Lino (UG), Micro-Seismicity Analysis of the San Jose Fault near Cal Poly Pomona Campus.

Stephen Quimpo (UG), Seismic recordings of a meteorite above the Western US.

Oliver Wolfe (UG), Seismotectonics of the South Flank of Kilauea, Hawaii.

Adam Arce (UG, Pasadena City College), Earthquakes triggered in the western US by the 2012 Haida Gwaii earthquake.

Erik Gutierrez (UG, Pasadena City College), Earthquakes triggered in the western US by the 2012 Haida Gwaii earthquake.

Hannah Mejia (G), Using 3D depth phases to determine improved locations of outer rise events in the Kurile trench.

Celia Pazos (G), A Microseismicity Study of the Sierra Madre-Cucamonga Fault Transition.

- b. Awards and Honors Earned by Students** – *Include awards/honors/scholarships to students resulting from or directly related to your work with or active support of them (e.g. provided research mentoring, created opportunities on their behalf that resulted in notable accomplishments, promoted their success through letters of nomination or support). Litmus test: Did you play an essential role in supporting this student's success?*

All awardees below had multiple faculty advisors supporting various successes:

Baca, Austin (UG, 2012. NSF-S STEM scholarship.

Barnhart, Andrew (UG), 2012 Hensderson-Valles Academic Scholarship--\$1000

Butcher, Amber (UG), 2012. USC Dornsife College Graduate Merit Award in the Department of Earth Sciences.

Clark, Wendy (UG), 2012 Grayce M. Teal Memorial Scholarship Award--\$1000

Gonzalez, Jazmin (UG), 2012. USDA Watershed Management Internship, \$4500

Gonzalez, Jazmin (UG), 2012. Louis Stokes Alliance for Minority Participation, \$2000

Greenwood, Rebecca (UG), 2012. NSF-S STEM scholarship.

Greenwood, Rebecca (UG), 2012 Margaret Van Buskirk Memorial Scholarship--\$750

Lino, Susana (UG), 2012 Grayce M. Teal Memorial Scholarship Award--\$1000

Mack, Anthony (UG), 2012 Randal Burns Brunton Compass Award--\$450

Below are competitive awards for summer 2013; students applied during late 2012-early 2013:

Debbie Hernandez - selected to participate in 2013 CAMPARE summer research program

Rachel Hatch - selected to participate in 2013 CAMPARE summer research program

Austin Baca - selected to participate in Summer of Applied Geophysical Experience

Hannah Mejia - invited to participate in “Bringing New Tools and Techniques to Bear on Earthquake Hazard Analysis and Mitigation” Pan-American Advanced Studies Institute
Hannah Mejia - selected to sail on Cascadia Initiative (CI) Expedition
Magali Barba - selected to participate in the DEVELOP National Program at NASA Jet Propulsion Laboratory

ACADEMIC YEAR ACCOMPLISHMENTS (Summer 2012 through Spring 2013 Quarter)

V. Service – *Relative to each subsection below, list committee/program/activity name and your role.*

a. Service to the Department – during Summer 2012 through Spring 2013

Marshall:

Department RTP Committee (Chair)
Geological Sciences Graduate Program Committee (Member)

Nourse:

Geology Department Chair
Geology Department Curriculum Committee—Chair
Geology Department Graduate Program Committee—Chair
Geology Department Strategic Planning Committee—Chair
Geology Department Recruiting Committee—Chair
Geology Faculty Search Committee, Chair
Geology Department Assessment Committee—Chair
Geology Department RTP Committee—Member
Organized and implemented of annual Alumni Reunion and Awards Ceremony
Conducted Orientation activities for all newly matriculated Geology Majors during Summer;
Revised Catalog copy for Geology BS and Geology MS programs
Designed advertisements for new Graduate program; promoted MS program at various venues
Implemented new self-support Geology MS program

Osborn:

Geological Sciences Department Graduate Program Committee (member)
Geology Club (Advisor)
Geological Sciences Department Academic Advisor
Geological Sciences Department Thesis Advisor (10 students)
Geology Curriculum Committee (member)
Geological Sciences Department Visiting Speaker Series (Co-Coordinator)

Polet:

Geological Sciences Department Lecturer Evaluation Committee (chair)
Geological Sciences Department RTP Committee (member)
Geological Sciences Department Curriculum Committee (member)
Geological Sciences Department Graduate Program Committee (member, graduate co-coordinator)
Geological Sciences Department Undergraduate Scholarship Committee (member)

Geological Sciences Department Seminar Committee (co-coordinator)
Geological Sciences Department Recruiting Committee (member)
Geological Sciences Faculty Search Committee (member)
Geological Sciences Department Facebook page (administrator)
Seminar on Graduate School, Internship and Scholarship Opportunities (co-presenter)
Seminar on Senior Project Research Opportunities (co-presenter)

b. Service to the College – during Summer 2012 through Spring 2013

Marshall:

Center for Educ. Excellence in Math, Science, & Technology (CEEMaST) (Faculty Fellow)
NSF STEP Program Apprenticeship Team (Undergraduate Research Coordinator)
NSF S-STEM Scholarship Program (Management Team Member & Student Advisor)

Nourse:

College of Science Council of Chairs Committee—Geology representative
College of Science Curriculum Committee—Geology representative
College of Science Budget Advisory Committee—Geology representative

Osborn:

Learning Communities Committee (member)
Environmental Sciences Seminar (Invited Speaker)
National Development Council Meeting (Speaker)
Showcase of Excellence for incoming undergraduates (Geological Sciences Representative)

Polet:

College of Science Research Support Task Force (member)
NSF S-STEM Scholarship Program (Student Advisor)

c. Service to the University – during Summer 2012 through Spring 2013

Marshall:

University Coordinator for Undergraduate Research, Office of Research (Faculty Associate)
Undergraduate Research Faculty Advisory Council (URFAC/UR-BRONCO) (Chair)
California State University Undergraduate Research Consortium (Campus Team Leader)
Kellogg FuTURE Program (Kellogg Fund for Transformative Undergraduate Research) (Director)
Cal Poly Pomona Teacher-Scholar Task Force (Member)
California State University, Council on Ocean Affairs, Science, and Technology (COAST) (CPP Campus Representative)
Cal Poly Pomona McNair Scholars Program (Research Advisor)
Science, Technology, and Society (STS) Program Faculty Advisory Board (Member)

Nourse:

University GE Assessment Committee—SCI representative since January 2010
GIS Minor Committee—SCI representative

GIS Certificate Design Committee—SCI representative

Osborn:

Learning Communities Committee (member)

Cal Poly Water Initiatives Committee (member)

Emergency Preparedness Committee member and EOC Marshal for building 4m floor A

Critical Thinking and Assessment (Attendee)

Honors College Essays (Reviewer)

Science, Technology and Society (STS) Advisory Board Member

Polet:

Academic Affairs Committee (member)

Academic Senate (senator)

Undergraduate Research Faculty Advisory Council (non-voting member)

Cal Poly Pomona Honors Program (Research Advisor)

d. Service to the Profession – during Summer 2012 through Spring 2013

Berry:

Continuing education:

Participant in “Think evolution IV: a summer institute for science educators” in August

Participant in “Unraveling the Genome: What we’ve learned and why it matters” in February

Marshall:

Council on Undergraduate Research (CUR) (Elected Councilor, Geosciences Division)

NSF GeoPRISMS Program Education Advisory Committee (GEAC) (Member)

Nourse:

Manuscript Reviewer: Geology journal, January, 2013, Darin and Dorsey: “Reconciling disparate estimates of total offset on the southern San Andreas fault

Osborn:

California Water Environmental Association, Cal Poly Pomona Student Chapter (invited Speaker)

American Chemical Society, Petroleum Research Fund (Grant Proposal Reviewer)

Environmental Science: Processes and Impacts Journal (Reviewer)

Hydrogeology Journal (Reviewer)

Environmental Science and Technology Journal (Reviewer)

University of Colorado, Civil Engineering (Invited Speaker)

Ceres Conference: Shale Energy and Water (Invited Speaker and Panelist)

Polet:

State Mitigation Assessment Response Team (member)

NSF Geophysics and Tectonophysics (invited proposal reviewer)

Manuscript Reviewer:

Bulletin of Seismological Society of America,

Geophysical Research Letters,

Journal of Seismology

American Geophysical Union Fall 2012 meeting (Outstanding Student Paper Award Judge)

American Geophysical Union Fall 2012 meeting (Session Convener and Session Chair)

- e. **Service to the Greater Community** – *for activities involving outreach to students in public K-12 schools and California community colleges, reference participating schools and approx. number of students (or teachers) directly affected.*

Berry:

August, 2012, Taught a short course/workshop for University Elementary School students on “Tidepools”.

Marshall:

Citrus College 2012 Summer Student Research Program, Cal Poly Pomona, June-July 2012 (Faculty Advisor)

Polet:

Research advisor and Seismology field activity leader for Geology majors at Pasadena City College (2 research advisees, 5 field students)

VI. Instructional Innovation - *Briefly describe in 10 lines or less any new teaching techniques or pedagogy you introduced into one or more of your classes during this reporting period, including uses of technology, on-line or service learning, honors or FYE sections, and/or interdisciplinary materials.*

David Amiel:

Designed hybrid version of GSC 116: Introduction to Astronomy—Winter, 2012

Designed fully online version of GSC 116: Introduction to Astronomy—Spring, 2012

Implemented hybrid version of GSC 116: Introduction to Astronomy—Spring, 2012

Nourse:

Used hand-held video camera to film various geological field mapping excursions to West Fork San Gabriel Canyon (GSC 501L), Rand Mountains (GSC 501L), Hogback Landslide (GSC 415L), East Fork San Gabriel Canyon (GSc 501L0, Red Rock Canyon State Park (HGSC 491L), and Blue Ridge (GSC 491L). These movies have been compiled as foundation for developing an online geological mapping course

Used laser rangefinder technology to map inaccessible canyon exposures of landslide features with students enrolled in GSC 501L Field Investigations course.

Osborn:

On one occasion this academic year, the projector malfunctioned in the middle of a lecture. In order to continue my lecture, I uploaded my powerpoint slides to Blackboard and had students download it to their smart phones. As a result of this, I realized that students are very technology comfortable. So, I created a professional Facebook page and started holding virtual office hours in addition to my actual in-person office hours. The virtual office hours were designed to allow me to be available for simple questions or comments about lecture and to disseminate important news articles related to lecture topics. I have received a good response from students, many of which did not come to my in-person office hours before. In some cases, I encouraged students to see me in person to talk about more

complex topics. I believe that this is an alternative for students that may feel uncomfortable or unable (due to work) to go to my in-person office hours.

Polet:

Co-teacher and field trip leader of interdisciplinary Hawaii field experience in summer of 2012. 8-day field experience combined field activities in geophysics and environmental biology on the Big Island of Hawaii.

Created new field-based learning modules using newly acquired geophysical resistivity equipment and seismometer array for GSC434 (W13) and GSC564 (Sp13) classes, as well as senior and MSc thesis projects.

Wagner:

Designed hybrid version of GSC 120: Introduction to Oceanography—Spring, 2012

Taught GSC 310: GIS Applications for Earth and Environmental Scientists using GPS technology and various on-line tools