KLEBER, EMILY J.

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EDUCATION

University of California, Davis, B.S. Geology, minor in Geographic Information Systems (GIS), 2010 Senior Thesis: Paleoclimates in the West: Using Sierra Nevada Cave Formations to Determine Rain Patterns in California 220 Ka – 230 Ka

Arizona State University, M.S. (*in progress*), July 2013 – present, expected graduation: Fall 2015 MS Thesis (*in progress*): Updated Spatial and Temporal Mapping of Wheeler Ridge, California

WORK EXPERIENCE

Arizona State University

Graduate Student Research Assistant, Tempe, AZ, July 2013 - present

- Primary duties are OpenTopography data management, support, and planning, similar to SDSC positions held 2011-2013.
- Planning and organization for OpenTography short courses, advisory committee meeting, and AGU meeting booth.
- Structure from Motion field data collection and processing of active faulting sites for research, publications, and proposal support.
- Advanced lidar analysis: lidar differencing, TLS data manipulation, and point cloud metadata attribution.

National Science Foundation

East Asia Pacific Summer Institute (EAPSI) Fellow, Higashihiroshima, Japan, June 2014 - August 2014

- Summer research fellow as part of joint National Science Foundation (NSF) and Japan Society for the Promotion of Science (JSPS) program for graduate students.
- Invited and hosted by Dr. Koji Okumura, Professor and Paleoseismologist, Hiroshima University.
- Presentations and trainings for Japanese students and professional researchers about applications of high resolution topographic data in graduate research and OpenTopography portal.
- Field review of paleoseismic investigations, recent deformation, and tectonic geomorphology active faults in central and eastern of Honshu.

Arizona State University

Graduate Student Teaching Assistant, Tempe, AZ, January 2014 - May 2014

- Instructor for geology portion of undergraduate level laboratory class "SES 124- Earth, Solar Systems, and Universes."
- Lecture about fundamental geologic concepts (e.g. natural hazards, geologic time), improved laboratory exercises, led field trips, and graded laboratory exercises.

San Diego Supercomputer Center- OpenTopography Facility (www.opentopography.org)

Data Analyst, La Jolla, CA, July 2012 – July, 2013

Geospatial Data Specialist, La Jolla, CA, July 2012 – July, 2013

- Prepared and managed incoming high resolution lidar datasets for ingestion, curated metadata, tested data, oversaw data releases, and trouble-shoot data related problems. Major accomplishments include loading of backlogged lidar datasets (n=63) to OpenTopography portal in addition to weekly to monthly incoming datasets.
- Regularly engaged with the OpenTopography user community to provide daily help-desk support and data processing and analysis guidance.

- Updated webpage with project related materials, press releases, and bug fixes.
- Lead the effort of compressing and exporting archives of original delivered data (all products including raw point cloud data) for the Chronopolis pilot project by UCSD library for long term digital preservation of lidar data.
- Re-designed education and outreach section of OpenTopography. Content created includes catalog of pre-generated lidar products highlighting geologic landforms (OpenLandform catalog), targeted webpages for students/educators/researchers, and FAQ section.

Bureau of Land Management, Coos Bay District

District Geologist and Soil Scientist, North Bend, OR, January 2011 - November 2011

- Prepared reports concerning engineering geology for building timber roads, placing large woody debris for stream channel restoration, investigating and mapping mining claims, and water table monitoring.
- Used historical aerial photography, stereoscopic analysis, bare earth digital elevation models (DEMs) in ArcGIS to identify and map geologic relationships, previous forestry activities, landslides, areas of soil compaction, and roads to support timber activities in the Oregon Coast Range.
- Conducted landslide hazard monitoring on an active landslide and designed timber road re-route.
- Head of district mining program. Answered weekly inquiries from the public or private organizations related to the status of public land management actions and interests.
- Preparation of NEPA (National Environmental Policy Act) documents for geologic related environmental projects.
- Organized and conducted field investigations in remote field areas, in various working condition, and have worked around operating machines related to timber and mining activities.

Bureau of Land Management, Coos Bay District

SCEP (Student Career Experience Program) Geologist, North Bend, OR, summers 2009, 2010

- Prepared content for reports concerning engineering geology for building timber roads, placing large woody debris for stream channel restoration, investigating and mapping mining claims, and water table monitoring.
- Used historical aerial photography, stereoscopic analysis, bare earth digital elevation models (DEMs) in ArcGIS to identify and map geologic relationships, previous forestry activities, landslides, areas of soil compaction, and roads to support timber activities in the Oregon Coast Range.
- Performed field monitoring for landslides, water wells, river restoration projects, and wildlife surveys.
- Visited nearby Medford and Eugene districts for field reviews and training in BLM mining program.

UC Davis Geology Department

Field Assistant- Cave Monitoring, Davis, CA, January 2009 – June 2010

- Performed routine (bi-weekly) measurements at Black Chasm Caverns with field based and remotely based equipment. Monitored the quality of the instrumentation and subsequent data.
- Data results part of senior thesis, "Paleoclimates in the West: Using Sierra Nevada Cave Formations to Determine Rain Patterns in California 220 Ka 230 Ka".

Devine Tarbell and Associates

Summer Geology Intern, Natomas, CA, June 2008 - August 2008

• Internship working with geotechincal consulting firm specializing in engineering geology and hydropower projects. Assisted with initial work of the Pit 3 dam powerhouse and bypass proposed on the Pit River, Burney, CA.

• Completed 2 weeks of fieldwork at Pit 3 site. Assisted in structural mapping, exploratory drilling including taking drill logs, and trenching of river terraces.

TECHNICAL SKILLS

Software

- Software: ESRI ArcGIS, Global Mapper, Google Earth, Agisoft Photoscan, MS Office, Adobe Photoshop/Illustrator/Acrobat.
- Other software: Matlab, LAStools, Leica Cyclone, Quick Terrain Modeler.
- Languages: C, python, HTML.

Geology related skills

- Advanced lidar analysis: Data Qa/Qc, point cloud manipulation, creating of digital elevation models (DEMs), advanced DEM analysis, point cloud differencing.
- Mapping: Quaternary mapping, paleoseismic trench logging, structural mapping.
- Structure from Motion (SfM) data collection- paleoseismc trench walls, balloon aerial photography, outcrop photography.
- TLS data collection (Leica VZ400).
- Total station surveying and differential GPS data collection.
- ¹⁴C and Optically Stimulated Luminescence (OSL) sampling.

RESEARCH FUNDING AWARDED

- Southern California Earthquake Center (SCEC), "Updated Spatial and Temporal Mapping of the Geomorphic Evolution of Wheeler Ridge and Application to Blind Thrusts in California, PI*: J.R. Arrowsmith, Author: E.J. Kleber, January 2015 June 2016, \$25,000.
- ASU Sigma Xi Chapter-in-aid of research, "Geomorphic Evolution of Wheeler Ridge, California", April 2015, \$400.
- ASU Graduate Research Support Program (GRSP), "Geomorphic Evolution of Wheeler Ridge, California", November 2015, \$2,000.
- NSF East Asia Pacific Summer Institute (EAPSI), "Analyzing recent earthquakes in Japan using high resolution topographic data", June August 2014, \$5,070 from NSF, ~\$5,000 from Japan Society for the Promotion of Science (JSPS).
- ASU Graduate and Professional Student Association (GPSA) Travel Grant, "3D Investigation of Channel Morphology Across the San Andreas Fault Zone using Structure from Motion and Terrestrial Laser Scanning" poster presented at Seismological Society of America annual meeting, Anchorage, AK, April 2014, \$850.
- Geological Society of America (GSA) Graduate Student Research Grant, "Stream table for modeling geomorphic channel evolution across active strike-slip fault", March 2014, \$1,500.
- National Center for Airborne Laser Mapping (NCALM) Graduate Student Seed Grant, "Refining Uplift of Wheeler Ridge from Detailed Geomorphic Analysis Using ASLM", February 2014, 40 km² lidar data, monetary value ~\$40,000.

Total research awards: \$30,820 and 80km² lidar dataset

*SCEC only allows researchers with awarded PhDs as PI's.

AWARDS AND HONNORS

ASU Graduate Excellence Award, April 2015 ASU Graduate Excellence Award, May 2014 Nominated for NAGT/USGS Cooperative Summer Field Training Internships, August 2010

SYNERGISTIC ACTIVITIES

Invited presenter for high resolution topography data applications workshop (LAStools, CloudCompare, SfM, and OpenTopography), Ensenada, Mexico, April 7-9, 2015.

Participant at SCEC SoSAFE Geochonology Workshop, Cal Poly Pomona, October 28, 2014.

- Co-Organizer and instructor for OpenTopography short course, "Imaging and Analyzing Southern California's Active Faults with High-Resolution Lidar Topography," San Diego Supercomputer Center, La Jolla, CA November 4-6, 2013.
- Developed OpenLandform Catalog: A collection of pre-generated high resolution topographic data of geologic landforms for education and outreach. Presented at GSA and AGU, 2012.
- Participant of OpenTopography short course "Imaging and Analyzing Southern California's Active Faults with High-Resolution Lidar Topography," University of California, Davis, October 24-25, 2011.

COLLABORATORS & OTHER AFFILIATIONS

Graduate Advisor: Dr. J. Ramón Arrowsmith, Arizona State University

Graduate Committee Members: Dr. Kelin Whipple, Arizona State University; Dr. Duane DeVecchio, Arizona State University.

Collaborators: Dr. Chaitan Baru, San Diego Supercomputer Center, La Jolla, CA; Christopher Crosby, UNAVCO, Boulder, CO; Dr. Edwin Nissen, Colorado School of Mines, Golden, CO; Vishwanath Nandigam, San Diego Supercomputer Center, La Jolla, CA; Dr. Koji Okumura, Hiroshima University, Higashihiroshima, Japan; Dr. Steven DeLong, USGS Menlo Park, CA.

Professional Associations:

- GSA- Geological Society of America (since 2009)
- AGU- American Geophysical Union (since 2010)
- SSA- Seismological Society of America (since 2013)

Last updated April 27, 2015