

Elisabeth S. Nadin

166 N. Mar Vista Ave, Apt 3, Pasadena, CA 91106
(626) 676-9047; enadin@caltech.edu; <http://www.gps.caltech.edu/~enadin>

EDUCATION

PhD, Geology, California Institute of Technology, Pasadena, CA, defended June 2006.

Major research: Structure and history of the Kern Canyon fault system, Sierra Nevada, CA.

Master's Certificate, Science Writing, University of California, Santa Cruz, CA, June 2003.

Internships: Lucile Packard Children's Hospital, *Monterey County Herald*, and EarthScope.

M.S., Geology, California Institute of Technology, Pasadena, CA, June 2001.

Proposition topics: 1) Ductile deformation along the Proto-Kern Canyon Fault, Sierra Nevada
2) Noble gas composition of early Earth

B.S., Geology & Geological Oceanography, German minor, University of Rhode Island, Kingston, RI, December 1998.

Senior thesis: Geology of the Great Bahama Bank.

Other work: Carbon content of pre- and post- K/T boundary marine sediments; depositional cyclicity of Cretaceous fossil-bearing limestones in Mexico.

RESEARCH EXPERIENCE

Postdoctoral Research, Dept. of Geology, University of Maryland *and* Dept. of Geological and Planetary Sciences, California Institute of Technology, Aug. 2006–Present.

- Low-temperature geochronology of the Main Central Thrust (MCT) of the Nepal Himalaya. Employs apatite (U-Th)/He and fission track dating of metamorphic rocks along the MCT to determine its tectonic history.

Graduate Research, Dept. of Geological and Planetary Sciences, California Institute of Technology, 1999–2002; 2003–2006.

- Study of an intra-continental shear zone, Sierra Nevada, CA. Analysis of rock fabric to study strain distribution along a Cretaceous shear zone; Al-in-hbl measurements to determine depth of pluton emplacement; integration of existing and new U-Pb age data to constrain age of deformation; analysis of distribution of geochemical signatures (oxygen isotopes and Sr) to reveal overprinted structures; study of recent activity; integration of all of these data into GIS-based interactive maps.
- Stable isotopic study of fluid interchange in a subduction zone, Big Sur, CA. Hydrogen isotope measurements augmented oxygen isotope research to document the history of fluid-rock exchange in serpentinitized ophiolites.
- Noble gas investigation of ancient atmosphere. He and Ar measurements of gas bubbles in salt beds from a Permian basin in Texas.

Undergraduate Research, Dept. of Geosciences *and* Graduate School of Oceanography, University of Rhode Island, 1997–1999.

- Geology of the Great Bahama Bank. Measured nature and distribution of sediments off the northern tips of Bahama islands to study sediment sorting as influenced by currents and eddies.
- Carbon content of marine rocks from before and after the K/T boundary. Measured carbon content of marine sediments from strata that pre- and post-date the impact, in order to quantify the recovery time of benthic carbonaceous marine fauna.
- Depositional cyclicity of fossil-rich Cretaceous limestone from Mexico. Measured thickness of limestone layers between hematitic dust layers, and correlated these with magnetostratigraphy to document Milankovitch cyclicity in carbonates that host Cretaceous marine animals, including fish and alligator.

AWARDS

- ARCS, Achievement Reward for College Scientists, 2003–2004. Awarded to graduate-level scientists who contribute to worldwide advancement of science.
- GSA graduate student fellowship, 2001. Award for graduate research.
- Presidential Scholar, 1999. Awarded to top graduating student in geosciences at URI.
- Top prize, Rumowicz Maritime Essay Contest, URI, 1998.

RECENT TEACHING EXPERIENCE

Adjunct Professor, Pasadena City College, Jan. 2006–present

- *Introductory geology*—taught transfer students the basics of geosciences through lecture, lab, and field trips, in 1) a 6-week, 16 hour/week inter-term course, and 2) a full semester.
- *Oceanography*—currently teach a 3 hour/week lecture with related activities.

Adjunct Professor, California State University, Northridge, Jan.–Dec. 2006.

- *Structural geology*—taught undergraduate and graduate majors the complexities of structural analyses in geology, including lecture and lab, with field trips, 8 hours/week.
- *Introductory geology*—taught two lecture classes (90 students total) in the basics of geosciences.

Teaching Assistant

- Dept. of Geological & Planetary Sciences, Caltech, 2000–2002; 2004–2005.
Organized and taught labs and assisted in classes ranging from introductory level geology to advanced techniques in geologic mapping and analysis, both in the field and in lab, including: introductory geology; structural geology; field camp; advanced field mapping and structural analysis; continental tectonics; regional geology of southern California.
- Dept. of Earth Sciences, UC Santa Cruz, Spring 2003. Taught introductory-level geology and in-depth dinosaur morphology lab sections in *Natural History of the Dinosaurs*

Associate Instructor, Indiana University Geologic Field Station, Montana, Summer 1999.

- Field geology—helped teach introductory field mapping in this six-week field camp.

SCIENTIFIC PUBLICATIONS

- **Nadin, ES** and Saleeby, JB, 2008. Disruption of regional primary structure of the Sierra Nevada batholith by the Kern Canyon fault system, California, *in* Wright, JE, and Shervais, JW, eds., *Ophiolites, Arcs, and Batholiths: GSA Special Paper 438*, pp. 429–453.
- Saleeby, JB, Ducea, MN, Busby, C, **Nadin, ES**, Wetmore, PH, 2008. Chronology of Pluton Emplacement and Regional Deformation in the Southern Sierra Nevada Batholith, California, *in* Wright, JE, and Shervais, JW, eds., *Ophiolites, Arcs, and Batholiths: GSA Special Paper 438*, pp. 397–427.
- **Nadin, ES** and Saleeby, JB, submitted to *Geology*. Recent activity along the Kern Canyon fault, southern Sierra Nevada, California.
- Saleeby, JB, and **Nadin, ES**, in prep. Structure and kinematic evolution of the proto-Kern Canyon fault, southern Sierra Nevada, California.
- **Nadin, ES**, 2004, Magnifying a Continent, *Geotimes* v. 49, n. 3, pp. 30–31, 34.

MEETING ABSTRACTS

- **Nadin, ES** and Saleeby, JB, 2007. Early disruption of the southern Sierra Nevada batholith, California, by the Kern Canyon Fault System. *Geological Society of America Abstracts with Programs*.
- **Nadin, ES** and Saleeby, JB, 2005, Recent Motion on the Kern Canyon Fault, Southern Sierra Nevada, California, *EOS, Transactions, AGU Fall Meeting*, v. 86 no. 52, *Abstract T51D-1369*.
- **Nadin, ES** and Saleeby, JB, 2005. The role of a crustal boundary in unroofing the southern Sierra Nevada Batholith. *Geological Society of America Abstracts with Programs*, v. 37, n. 4, p. 102.
- **Nadin, ES** and Saleeby, JB, 2004. Localization of shear along a compositional discontinuity: the Proto-Kern Canyon Fault, Sierra Nevada, California. *Geological Society of America Abstracts with Programs*, v. 36, n. 5, p. 425.
- **Nadin, ES** and Saleeby, JB, 2001. Relationships between the Kern Canyon Fault (KCF) and the Proto-Kern Canyon Fault (PKCF), Southern Sierra Nevada, CA. *EOS, Transactions, American Geophysical Union, Fall Meeting Suppl.*, *Abstract T32B-0902*.

INVITED LECTURES

- *The Kern Canyon fault system in the Sierra Nevada batholith: Middle Cretaceous until today*. USGS Menlo Park Earthquake Seminar Series, Oct. 2007.
- *Structure and History of the Kern Canyon Fault System, Southern Sierra Nevada, California*. University of Alaska, Fairbanks, Dec. 2006.
- *Internal deformation of the southern Sierra Nevada: Middle Cretaceous until today*. California State University, Northridge, Departmental Speaker Program, Nov. 2005.

RELATED EXPERIENCE

Shipboard Science

- **Scientist**, *Nathaniel B. Palmer*, Jan.–Feb. 2005. Analyzed bathymetric and magnetic data on an Antarctic cruise studying the Cenozoic tectonic motion between Antarctica and Australia.
- **Student**, Sea Education Association, Woods Hole, MA, spring 1996. Spent six weeks in Woods Hole and six weeks circumnavigating Cuba aboard the 135-foot schooner *Westward*, studying marine sciences and navigation.

Science Writing

- **Writer and Editor**, California Institute of Technology, Sept. 2006–present. 1) Write press releases on current Caltech research activity and co-produce a 1.5-minute radio science segment called *The Loh-Down on Science*, 2) Wrote features (4,000–5,000 words), short pieces (500–1,000 words), book reviews, obituaries, and award blurbs, and edited scientist talks for content and length (to 4,000–5,000-word features) for Caltech’s science magazine, *Engineering & Science*. I also arranged graphics and interacted with the graphic artist and publisher.
- **Freelance writer and editor**, Jan. 2004–present. Pitch ideas, interview sources, and write stories about emerging science and related fields. Published stories in *Geotimes*, *ScienceNOW*, *Science & Spirit*, and wrote an introductory geology “cheat sheet” published by Barnes & Noble. Also edit manuscripts for publication in geological journals, for both grammar and clarity of content.
- **Intern**, EarthScope Education & Outreach, June–Dec. 2003. Researched and wrote stories about current research in Earth Sciences related to EarthScope objectives, and wrote informational fliers to enlist landowners to host instruments on their property.

Year abroad, 1996–1997.

- Learned German, took classes at the University of Bremen, Germany, worked in a marine science lab, and traveled Europe by train.

LANGUAGES

- **German**, speak and read fluently
- **Spanish**, understand well, speak with difficulty
- **Romanian**, understand well, speak with difficulty