

RICHARD J. NEVLE

Stanford School of Earth Sciences

Email: rnevle@stanford.edu

Phone: (650) 724-0984

EDUCATION:

Ph.D., 1995 Geological & Environmental Sciences, Stanford University, Stanford, CA
B.A., 1987 Geology, Amherst College, Amherst, MA, *Magna Cum Laude*

WORK EXPERIENCE:

- 2011-present **Undergraduate Program Director**, *School of Earth Sciences, Stanford University*
- 1997-2011 **Teacher and Coach**. *Bellarmino College Preparatory, San José, CA.*
Teach courses in geology, calculus, and physics. Designed curriculum for college-level introductory geology course for 11th- and 12th-grade students. Taught six-week summer courses in mathematics and inquiry-based science to elementary and middle-school students. As an assistant cross country coach, help to train, motivate, and inspire high school student-athletes to perform at their optimal level in cross country competition.
- 2004-2011 **Lecturer**. *Santa Clara University, Santa Clara, CA.*
Teach introductory earth science course to undergraduates. Presently developing upper level undergraduate course on Earth's climate system, to be taught in Spring 2012.
- 2005-2011 **Visiting Scholar**. *Stanford University, Stanford, CA.*
Investigate interactions among pre-industrial human activities, climate, and biomass burning using paleoenvironmental proxy data.
- 2007 Summer **Consultant**. *Salas O'Brien Engineers Inc., San José, CA.*
Conducted scientific literature review to evaluate the feasibility of producing carbon-negative, renewable energy by a biomass gasification process that incorporates production of a carbon-sequestering bio-char soil amendment. Analyzed potential of process to provide environmental benefits via agricultural application of bio-char, including atmospheric carbon sequestration, soil quality improvement, and other ecosystem services.

- 2000-2001 **Consultant.** *Classroom Connect*, Brisbane, CA.
Designed and produced web-based instructional unit that enables students to explore atmospheric science from an earth-systems perspective. Researched, developed, and wrote educational content for company's Classroom Today and Quest Channel web sites (online resources for teachers and students).
- 1999 Summer **Instructor.** *Bay Area Schools for Excellence in Education Summer Institute*, Cupertino, CA.
Designed and taught inquiry-based geology course to help elementary school teachers enrich earth science background.
- 1997 Summer **Instructor.** *Keck Research Symposium in Geology*, Amherst, MA.
Part of three-person team responsible for supervising ten undergraduates on geological research projects involving field work and synchrotron microXANES analysis of minerals for determination of $\text{Fe}^{3+}/\text{Fe}^{2+}$. Guided and supported students in all aspects of research including project formulation, collection and analysis of data, and interpretation and presentation of results.
- 1994-1997 **Senior Researcher.** *Now What Software*, San Francisco, CA.
Designed and produced content for digital atlas on environmental change, Earthscapes In Time. Wrote educational earth science content to enhance company's series of multimedia atlases. Managed content experts, production and research assistants, writers, and teachers to create content for software products and teachers' guides.
- 1988-1994 **Research Assistant.** *Stanford University*, Stanford, CA.
Conducted field and analytical study of a fossilized hydrothermal system located in the remote arctic wilderness of East Greenland. Assisted with all aspects of organization and logistics of two expeditions, including fund-raising through writing successful grant proposals. Presented results at major scientific meetings and in publications.
- 1987-1994 **Teaching Assistant.** *Stanford University*, Stanford, CA and *Amherst College*, Amherst, MA.
Taught laboratory sections for undergraduate introductory geology courses, motivated and encouraged students, prepared lectures and demonstrations, led field trips, graded assignments.
- 1988-2000 **Tutor.** Helped high school and college students strengthen skills in writing, science, and mathematics.
- 1991 Summer **Exploration Geologist.** *Platinova Resources, Ltd.*, Toronto, Canada.
Part of two-man team responsible for planning and implementing precious metal prospecting program in remote region of East Greenland.

- 1987 Summer **Field Assistant.** *University of Oregon, Corvallis.*
Assisted team of geologists with field research in the Nazca region of coastal Peru. Study focused on characterizing the faunal assemblages preserved within Cenozoic marine sediments to reconstruct paleoclimatic conditions. Duties included sample collection, fossil identification, measuring stratigraphic sections, core logging, and translating for non-Spanish speaking members of research team.
- 1986 **Intern.** *Lunar and Planetary Science Institute, Houston, TX.*
Conducted petrological analysis of phosphate minerals in two shegottite meteorites to evaluate evidence for metasomatism and assess the potential role of this process in resetting the radiometric ages of the meteorites.
- 1985-1987 **Resident Counselor.** *Amherst College, Amherst, MA.*
Selected as one of three resident assistants to 120 undergraduates in college dormitory. Helped first year students make the transition to college life. Mediated in resolving difficult interpersonal situations. Counseled students struggling with personal issues. Administered \$1500 budget to coordinate intellectual and social activities.

TEACHING AND ACADEMIC HONORS:

- Outstanding Teacher Award, presented by the University of California San Diego, 2001 and 2002
- Chevron Fellow, (Stanford University), 1991-1992
- Outstanding Mention, Geological Society of America Committee on Research Grants, 1991
- National Science Foundation Graduate Fellow (Stanford University), 1989-1992
- Pond Prize for best undergraduate thesis in Geology (Amherst College), 1987

PROFESSIONAL DEVELOPMENT:

- 2000 *Understanding Teaching I Short Course* - Research for Better Teaching, Inc.

TECHNICAL EXPERIENCE:

- Synchrotron microXANES analysis of minerals for determination of $\text{Fe}^{3+}/\text{Fe}^{2+}$.

- Oxygen isotope analysis of silicate minerals, by conventional and laser fluorination techniques.
- Radiometric dating of minerals using the $^{40}\text{Ar}/^{39}\text{Ar}$ method, by conventional and laser-heating techniques.
- Electron microprobe and scanning electron microscope analysis of minerals.
- Mineral separation by magnetic and gravimetric methods.
- Preparation of sediment samples for carbon and nitrogen isotope analysis.
- Proficiency with Macintosh-, and Windows-based computer operating systems and software.

OTHER

- 1987, Amherst College Men's Varsity Crew, Captain. Selected as Most Valuable Player.

SCIENTIFIC PUBLICATIONS:

Published, peer-reviewed articles

Nevle, R.J., Bird, D.K., Ruddiman, W. F., and Dull, R., 2011, Neotropical human-landscape interactions, fire, and atmospheric CO₂ during European conquest. *The Holocene*, v. 21, pp. 853-864.

Dull, R., Nevle, R.J., Woods, W.I., Denevan, W.M. and Bird, D.K., 2010, The Columbian Encounter and the Little Ice Age: Abrupt Land Use Change, Fire, and Greenhouse Forcing. *Annals of the Association of American Geographers*, v. 100, pp. 755-771.

Nevle, R. J. and Bird, D. K., 2008, Effects of syn-pandemic fire suppression and reforestation in the tropical Americas on atmospheric CO₂ during European conquest. *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 264, pp. 25-38.

Bird, D. K., Arnason, J. G., Brandriss, M. E., Nevle, R. J., Radford, G., Bernstein, S. Gannicott, R. A., Kelemen, P. B., 1995, A gold-bearing horizon in the Kap Edvard Holm Complex, East Greenland. *Economic Geology and the Bulletin of the Society for Economic Geologists*, v. 90, no. 5, pp. 1288-1300.

Brandriss, M. E., Nevle, R. J., Bird, D. K., and O'Neil, J. R., 1995, Imprint of meteoric water on the stable isotope compositions of igneous and secondary minerals in the Kap Edvard Holm Complex, East Greenland. *Contributions to Mineralogy and Petrology*, v. 121, no. 1, pp. 74-86.

Nevle, R. J., Brandriss, M. E., Bird, D. K., O'Neil, J. R., and McWilliams, M. O., 1994, Tertiary plutons monitor climate change in East Greenland. *Geology*, v. 22, pp. 775-778.

Published abstracts

Nevle, R.J., Watson Nelson, T., Klemperer, S. L., Harris, J.M., 2012, Collaboration and

Community Building in Summer Undergraduate Research Programs in the School of Earth Sciences at Stanford University. *Eos Trans. AGU Fall Meet. Suppl.*, ED43C-0736.

Nevle, R.J., Bird, D.K., Ruddiman, W. F., Dull, R., and Stinchcomb, G.E., 2011, Ecological-Hydrological Effects of Reduced Biomass Burning in the Neotropics after A.D. 1500. *Geological Society of America; Abstracts with Programs*, v. 43, p. 399.

Nevle, R. J., and Bird, D. K., 2008, Effects of Syn-pandemic Fire Reduction and Reforestation in the Tropical Americas on Atmospheric Carbon Dioxide During European Conquest, *Eos Trans. AGU Fall Meet. Suppl.*, U31A-0004.

Nevle, R. J., and Bird, D. K., 2007, Synchrony of Pandemics, Fire Reduction, and Reforestation in the Tropical Americas With Atmospheric Carbon Dioxide Changes During European Conquest, *Eos Trans. AGU Fall Meet. Suppl.*, B11D-0767.

Nevle, R. J., and Bird, D. K., 2006, Syn-pandemic Fire Suppression in the Tropical Americas During European Conquest, *Eos Trans. AGU Fall Meet. Suppl.*, B53D-0375.

Nevle, R. J., and Bird, D. K., 2005, Effects of syn-pandemic reforestation on atmospheric carbon dioxide from 1500 to 1700 A.D., *Eos Trans. AGU Fall Meet. Suppl.*, PP51B-0589.

Crowley, P., Dyar, M. D., Nevle, R. J., 1998, Ferric Iron in Rock Forming Minerals. Eleventh Keck Research Symposium in Geology Proceedings, pp. 19-23.

Dyar, M. D., Crowley, P. D., Nevle, R. J., Delaney, J. S., Morrison, H. R., Chervasia, M. B., Brown, Z. M., Monders, A. G., Harrington, D. F., Stamski, R. E., Guetschow, H. A., Gutmann, E. D., Sutton, S. R., 1997, Coordination Effect on Fe Pre-edge SmX Spectra of Garnet, *Eos Trans. AGU Fall Meet. Suppl.*, V22B-08.

Nevle, R. J., Brandriss, M. E., Bird, D. K., McWilliams, M. O., and O'Neil, J. R., 1993, $^{40}\text{Ar}/^{39}\text{Ar}$ age constraints on plutonism, uplift, and hydrothermal alteration in the Kap Edvard Holm Complex, East Greenland. *Geological Society of America; Abstracts with Programs*, v. 25, p. A477-A478.

Nevle, R. J., and Bird, D. K., 1992, Enhancement of porosity in gabbros by dike intrusion, in Kharaka, Y. K., and Maest, A. S. (eds.), *Proceedings of the 7th International Symposium on Water-Rock Interaction*, p. 1533-1536.

Nevle, R. J., Bird, D. K., and O'Neil, J. R., 1992, Hydrothermal aquifers formed by mafic dikes in the Kap Edvard Holm Complex, East Greenland, in Brooks, C. K., Hoch, E., and Brantsen, A. K. (eds.), *Kangerdlugssuaq Studies; Processes at a Rifted Continental Margin III; Proceedings of a meeting held on May 25, 1992 in the Geological Institute, University of Copenhagen*, p. 81-84.

Bird, D. K., Radford, G., Bernstein, S., Gannicott, R. A., Arnason, J. G., Brandriss, M. E., and Nevle, R. J., 1991, Strata-bound gold and platinum mineralization in layered gabbros of the Kap Edvard Holm Complex, East Greenland. *Geological Society of America; Abstracts with Programs*, v. 23, p. 413.

Nevle, R. J., and Bird D. K., 1990, The effect of dikes on hydrothermal alteration of layered gabbros of the Kap Edvard Holm Complex, East Greenland. Geological Society of America; Abstracts with Programs, v. 22, p. A213.

Nevle, R. J., 1987, Phosphates in Shergotty and EETA79001: geochemistry and petrogenesis. Lunar and Planetary Science XVIII, pp. 714-715.

Ph.D. Dissertation: Hydrothermal Processes in Gabbros During Continental Breakup, The Kap Edvard Holm Complex, East Greenland. 1995. Stanford University. Advisor: Dennis K. Bird

Undergraduate Honors Thesis: Phosphates in Shergotty and EETA79001: Geochemistry and Petrogenesis. 1987. Amherst College. Advisors: Gerald Brophy and Gordon McKay (NASA-JSC)