

Karen R. Magid

CONTACT INFORMATION

Austin, TX

Voice:
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PERSONAL STATEMENT

A researcher by training who is passionate about working at the intersection of technology and society to improve the world around me using all my skills.

RECENT WORK

Technology Specialist - Peace Corps Mexico

March 2011 to January 2013

- Served as a Volunteer in the Technology Transfer program in Querétaro, Mexico. Project focus was on green technologies, community development, and methodologies to improve project monitoring, evaluation, analysis, and reporting.
- Through two USAID Small Project Assistance grants, worked on ameliorating issues of declining biodiversity, environmental impact, and health in rural communities through education, training, and providing green technology such as solar ovens and efficient wood-burning stoves to marginalized families. Special emphasis on quantifying environmental impact.
- Project lead to build database from existing records and improve data collection process for monitoring and evaluation at local non-profit Mexico Tierra de Amaranto (MTA). Designed and implemented a relational database and web interface in MySQL and PHP.
- Chair of website working group that develops and administers internal information-sharing site for Peace Corps Volunteers. Site developed using free web technologies, strongly based on the Google universe of products, primarily Sites, Drive, and Analytics. Analytics and user surveys used to evaluate design and adapt the website layout on an on-going basis.
- Involved in long-term strategy for several projects, including knowledge-sharing website, MTA road-map to better monitoring and evaluation processes, and green technology project to ensure project sustainability through future generations of Peace Corps Volunteers. Oversaw the first major transitions in leadership in both the website and green technologies project, including the development of governance documents for the website working group.
- Team member with a group of Volunteers that ran a week-long leadership and empowerment camp for 24 adolescent girls from disadvantaged Mexican communities, including running social media campaign on Facebook.

EDUCATION

The University of California - Berkeley, Berkeley, CA USA

Ph.D., Materials Science and Engineering, October 2007

- Thesis: Hierarchical multiscale characterization of deformation heterogeneities in metal single crystals.
- Advisor: Professor J. W. Morris, Jr.

North Carolina State University, Raleigh, NC USA

M.S., Nuclear Engineering, July 2003

- Thesis: Generation and characterization of micron and sub-micron sized particulate using electrothermal plasma source SIRENS.
- Advisor: Mohammed Bourham
- Minor in **Mathematics**
- Honors: College of Engineering Dean's Fellowship recipient, NCSU Alumni Association Fellowship recipient, Alpha Nu Sigma nuclear engineering honor society member

B.S., Electrical Engineering, December 2000

- *Summa cum Laude*, Valedictorian
- Communications specialization (emphasis on cellular telephony)
- Honors: National Merit Scholarship recipient, IBM Watson Scholarship recipient

BACKGROUND

Analytical Skills

Career focus on evaluation processes and data analysis in a wide range of sectors. Skilled at working with large data sets both in scientific and community development settings, including learning new analysis techniques.

Communication & Leadership

Project lead on a variety of collaborative, multidisciplinary projects with culturally and linguistically diverse partners. Significant writing experience for wide-range of audience types, including grant-writing, technical articles, training materials for rural communities, and reports for all projects .

Technical

Development of methodology and reporting to quantify community development and environmental impact; programming in a variety of languages for diverse projects including a relational database and scientific data analysis. Software expertise in Microsoft Office, Matlab, Adobe products, OriginLab,

Data Analysis

Extensive knowledge of acquisition, processing, and interpretation of data using commercial software and writing my own analysis programs. Database development experience with commercial software packages and programming with MySQL.

Teaching

Taught in both university and professional environments, leading technical laboratory classes as well as learning sessions designed to integrate people to new software technologies. Developed training materials and led training sessions for range of sectors including community development and web technologies.

LANGUAGE SKILLS

- English - Native fluency
- Spanish - Professional working fluency
- French - Elementary proficiency
- German - Elementary proficiency

PROFESSIONAL EXPERIENCE

Postdoctorate Researcher - ETH-Zurich

2007-2010

- Performed research in the Laboratory for Nanometallurgy in the Department of Materials under Professor Ralph Spolenak. Research emphasis was on the mechanical properties of materials across length-scales.

Graduate Student Researcher and Instructor - University of California, Berkeley

2003-2007

- Conducted PhD research and taught laboratory classes as a PhD candidate in the Materials Science and Engineering Department under advisor J.W. Morris, Jr.

Consultant - Alameda Applied Science Corporation

2005

- Conducted training for NIH-Image derived software and basic image processing for particle counting for industrial applications.

Consultant - State of California Attorney General's Office

2004-2005

- Metallurgical consultant for State of California Attorney Generals Office for case determining extent of lead exposure from costume jewelry.

Lucent Technologies, Raleigh, NC USA

Hardware Engineer

2001

- Systems test and integration functional testing of OptiStar™ EdgeSwitch and OptiStar (TA1000) Network Adapters
- Designed and implemented state of the art open source high-availability load balancing system supporting thousands of virtual servers.
- Created and implemented a new process to systematize the bug reporting documentation as a member of the testing team.
- Hardware engineering interface between testing and design team members.
- Participated in design reviews

RESEARCH
EXPERIENCE

**Laboratory for Nanometallurgy,
Department of Materials,
ETH Zurich**

Postdoctorate

October 2007 to August 2010

- Combined in-situ tensile testing with x-ray diffraction for the mechanical properties testing of nacre and antler biomaterials.
- X-ray characterization of microstructural changes upon heating in gold nanocrystalline films.
- Measurement of the scaling effects of the mechanical properties of polymer thin films via nanoindentation.

**Department of Materials Science and Engineering,
University of California - Berkeley**

Graduate Student

June 2004 to October 2007

- Characterization of oriented, compressed metals specimens on a variety of length-scales to determine nature of deformation heterogeneities identified by image correlation during compression.
- X-ray microdiffraction at the Advanced Light Source at Lawrence Berkeley National Lab of metallic specimens of molybdenum, tantalum, copper and zinc.
- Developing transmission electron microscopy sample preparation with focused ion beam, electropolishing, and mechanical polishing for targeted TEM observations in regions noted from X-ray measurements

**Department of Nuclear Engineering
North Carolina State University**

Graduate Student

August 2001 to July 2003

- Operated electrothermal, pulsed-power plasma source to generate particulate from a variety of materials including Lexan, copper, aluminum, and Teflon
- Scanning electron microscopy characterization to determine particle composition and size distributions

PUBLICATIONS

- Field, D.P., and K.R. Magid, I.N. Mastorakos, J.N. Florando, D.H. Lassila, J.W. Morris, Jr. Mesoscale strain measurement in deformed crystals: a comparison of x-ray microdiffraction with electron backscatter diffraction. *Philosophical Magazine* 90(11), April 2010, pp. 1451-1464.

- Magid, K.R., and R.D. Nyilas, R. Spolenak. Metal plasticity by grain rotation - microdiffraction case studies. *Materials Science and Engineering:A* 524(1-2), October 2009, pp. 33-39.
- Magid, K.R., and J.N. Florando, D. Lassial, M.M. Leblanc, N. Tamura, and J.W. Morris, Jr. Mapping mesoscale heterogeneity in the plastic deformation of a copper single crystal. *Philosophical Magazine* 89(1), January 2009, pp. 77-107.

CONFERENCE
PRESENTATIONS &
PUBLICATIONS

- "Mechanical properties testing of nacre: combined in-situ tensile testing with x-ray diffraction" presented in Symposium Z of the Fall 2008 Meeting of the Materials Research Society, Boston, MA.
- "Mapping Hillocks in Gold Thin Films with X-ray Microdiffraction: Mesoscopic Mapping and In-Situ Growth Studies" presented in Symposium NN of the Fall 2008 Meeting of the Materials Research Society, Boston, MA.
- J.W. Morris Jr., K.R. Magid, N. Tamura and J.N. Florando, "Multiscale Characterization to Clarify Patterns of Deformation." invited talk at the Fourth International Conference on Multiscale Materials Modeling (MMM2008), Tallahassee, Florida.
- "Mesoscale Deformation Patterning in Compressed Copper Single Crystals Measured via X-ray Microbeam Diffraction" presented in the "Plasticity from the Atomic Scale to the Constitutive Laws: Rate Limiting Behavior and Informed Constitutive Laws" symposium of the 2007 annual meeting of the TMS, Orlando, FL.
- "Hierarchical Multiscale Characterization of Compressed Copper Single Crystals" presented in Symposium EE of the Fall 2006 meeting of the Materials Research Society, Boston, MA.
- "Hierarchical Characterization of Deformation Heterogeneities in BCC Crystals." Karen R. Magid, Erica T. Lilleodden, Nobumichi Tamura, Jeff Florando, Dave Lassila, Rozaliya I. Barabash, and J. W. Morris in *Dislocations, Plasticity, Damage and Metal Forming: Material Response and Multiscale Modeling*, edited by Akhtar S. Khan and Amir R. Khoei, Plasticity 2005 Proceedings, Kauai, HI, 2005, pp.631-633.
- "X-Ray Microdiffraction Characterization of Deformation Heterogeneities in BCC Crystals." K.R. Magid, E.T. Lilleodden, N. Tamura, J.N. Florando, D.H. Lassila, M.M. LeBlanc, R.I. Barabash, and J.W. Morris Jr. in *Neutron and X-Ray Scattering as Probes of Multiscale Phenomena*, edited by S.R. Bhatia, P.G. Khalifah, D. Pochan, P. Radaelli, Mater. Res. Soc. Symp. Proc. 840, Boston, MA, 2004.