Adam Sarafian

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Education:

- Ph.D. Oceanography
  Wood Hole Oceanographic Institution/MIT
  June 2013 – Forever

- MS Geology – Planetary geochemistry
  University of Georgia
  Graduation: December 2012

- BS Geology
  University of Georgia
  Graduation: August 2009

Current Research (guest student – Woods Hole Oceanographic Institution 5/2012-present):

- Apatite inclusions from Archean and Hadean zircons – Project involves precise EPMA measurements of Cl, F, and trace elements in addition to measurement of D/H by SIMS to better establish crustal generation and volatile processes on the early Earth.
- Stable isotopes in apatite – Project involves measuring D/H and Cl isotopes in apatite from eucrites to better understand volatile processes on eucrite parent body.
- Veins in eucrites – Characterization of quartz/sulfide veins in one eucrite. Project involves using the LA-ICP-MS, EMPA, and SIMS to measure accurate and precise $\delta^{34}S$, $\Delta^{17}O$, and trace-element compositions in vein material that, in turn, will allow for determination of fluid composition and PT conditions of crystallization. Confocal microRaman spectroscopy has been used used to map vein morphologies and search for fluid inclusions.
- $\delta^{51}V$ in seawater and meteorites – Project involves development of pre-concentration technique to introduce into cation exchange columns (6 columns total) to extract V from seawater. MC-ICP-MS will be used to determine the $\delta^{51}V$ of seawater.
- Serpentonization of LL6 chondrite – Project includes determining fluid-flow pathways and alteration products of primary chondrite phases when subject to seawater at moderate temperatures (~200°C). I am also interested in the H generation during the oxidation of Fe during serpentonization of chondrites.

Publications and Conference proceedings:

- **Sarafian, A.R.,** Marshall H.R., "Melt-rock reaction at the vestian Moho." Submitted, Geochemica et Cosmochemica Acta.
- **Sarafian, A.R.**, Roden, M.F., Patiño-Douce, A.E. "The nature of volatiles in Vesta: Clues from apatite in eucrites." Submitted, Meteoritics and Planetary Science
- **Sarafian, A.R.**, Marschall, H.R., Singerling, S.A. "The origin of Stannern trend eucrites by melt-rock interaction." 2012 Fall Meeting, AGU; 2012
- **Sarafian, A.R.**, Roden M.F., Patiño-Douce A.E. "The nature of volatiles in Vesta: Clues from apatite in eucrites." 43rd Lunar and Planetary Science Conference; 2012

- **Sarafian, A.R**. and Harris, R.S. Classified Meteorite (NWA 5136, LL6 chondrite) Accepted 2011
- **Sarafian, A.R.**, Roden M.F., Patiño-Douce A.E. "Apatite as a probe of volatile composition of HED magma." 74th Annual Meteoritical Society Meeting; 2011
- McGregor, H., Hamil, B., **Sarafian A.R.**, Roden, M.F., Patino-Douce A.E., and Davis, L.L. "Petrogenesis of contemporaneous sodic and potassic alkaline magmas at Spanish Peaks, CO." Geological Society of America. *Abstracts with Programs*, Vol. 43, No. 5; 2011
- McGregor, H., **Sarafian, A.R**., Roden M.F., Patiño-Douce A.E., Davis L.L.: "Petrogenetic Relationship Between Potassic and Sodic Alkaline Magmas at Spanish Peaks, CO." Geological Society of America. *Abstracts with Programs*, Vol. 42, No. 1, p. 53; 2010
- Co-author: "Mineralogy of Pegmatite Dikes from the Keystone Blue Quarry Elberton Batholith, Northeast Georgia and Implications for the Origin of the Pegmatic Texture." Geological Society of America. *Abstracts with Programs*, Vol. 41, No. 1, p. 45; 2009

Oral Presentations:

- **Invited speaker** – University of New Mexico, Institute of Meteoritics, Albuquerque, NM (2/4/13) "The nature of volatiles on the 4-Vesta: Clues from apatite"
- **Invited speaker** – University of California, Los Angles (10/26/11) "The nature of volatiles on the 4-Vesta: Clues from apatite"
- **Invited speaker** – Woods Hole Oceanographic Institute (7/19/11) "Apatite as a probe of volatile composition of HED magma"
- 43rd Lunar and Planetary Science Conference (3/23/12) "The nature of volatiles in Vesta: Clues from apatite in eucrites."
- Meteoritical Society, London (8/12/11) "Apatite as a probe of volatile composition of HED magmas"

Short Courses attended:

- Ion microprobe (Cameca IMS 6f and NanoSIMS) short course (1/2013) – Phoenix, AZ
- Confocal microRaman spectroscopy short course (9/2012) – Edison, NJ
- Springer metasomatism workshop (7/2012) – Montreal, Canada
- Ion microprobe (Cameca IMS 1280) short course (4/2012) – Woods Hole, MA

Technical Skills:

- Proficient independent user of the JEOL 8600 and Cameca SX100 electron microprobes
- Proficient independent user of the Hitachi TM3000 desktop scanning electron microprobe
- Working knowledge of the Cameca IMS-1280 and Cameca NanoSIMS 50L ion probes
- Working knowledge of the Horiba LabRamHR confocal microRaman spectrometer
- Working knowledge of the ThermoFinnigan ICPs (quadrapole, high resolution, multi-collector) for solution based and laser ablation
- Experience in trace-metal clean lab working with various resins, peristaltic pumps, and cation exchange columns
- Proficient with the handheld Niton XRF and magnetic susceptibility meter
- Working knowledge of the Overhauser GSM-19 backpack magnetometer and laser theodolite
- Proficient with a Brunton Compass (strike dip) and Dip Dip compass
- Basic knowledge of ArcGIS and Maple (math modeling software)

- Proficient with Microsoft XP, Microsoft Office, Mac OS X, Adobe Photoshop/Illustrator

Field Experience:

- **WHOI,** Team leader/lead engineer/assistant diver, Advanced Imaging and Visualization Lab, Aug 2012
    - Constructed and tested hyperspectral jellyfish camera and light array in Havana harbor, Cuba.
    - 24-hour maintenance and monitoring of prototype jellyfish camera and light system during Diana Nyad's three-day swim attempt from Cuba to Florida.
    - Provided in-water support for detection of jellyfish and maintenance of jellyfish camera and light system
- **WHOI**, Advanced Imaging and Visualization Lab with William Lange and Evan Kovacs, May-Aug 2010, June-July 2011
    - Designed and tested multispectral imaging system to analyze coral health, speciation, and detect crude oil as proof of concept (Dry Tortugas Nat'l Park, FL). Participated in development of experimental 3-D High Definition underwater cameras for the Discovery Channel (No Name Key, FL), National Park Service, and WHOI scientific staff
- **University of Alaska Field School**, Fairbanks, AK, Jun-Aug 2009
    - Study included detailed mapping of field sites and measuring, recording and plotting structural data in prospective mines and national parks. Correlated geophysical data with map patterns
- **University of Georgia Study Abroad field program**, Argentina (various sites), June-July 2008
    - Examined sedimentary, igneous, and metamorphic rocks, as well as fluvial systems; mapped and identified structures in different rock types

Leadership Experience:

- Graduate student representative to the faculty, University of Georgia, 2010-2011
- Treasurer and cofounder of the "Geology Club" at University of Georgia, 2008-2012
- Head geology/geography tutor for athletes, 2009-2012
- Mathematics tutor for athletes, 2009-2012
- Captain of the University of Georgia Track and Field team. Responsibilities included organizing and running practices, mentoring incoming athletes, and assisting in the recruitment of new athletes, 2004-2009
- Coached and mentored students in gymnastics and pole vaulting at various camps and clinics, 2002-2010

Honors:

- Tutor of the year, University of Georgia Athletic Association, 2009-2010
- Southeastern Conference (SEC) Honor Roll
- President's List – Fall 2008
- Athletic Honor Roll – Scholar Student Athlete
- 2006 NCAA D1 All-American (pole vault)
- 2004 High School National Pole Vault Champion
- 6 time All-American (pole vault)

Funding (merit based):

- $2,000 Geological Society of America grant to study trace elements in Archean apatite
- $995 Sigma Xi student research grant to use SIMS on apatite from eucrites
- $750 Watts-Wheeler research grant to use SIMS on apatite from eucrites
- $2,500 Disability Resource Center Student Research Grant to use SIMS on apatite from eucrites
- $1,100 Watts-Wheeler travel grant (Meteoritical Society 2011)
- $1,220 NASA-USRA travel grant (Meteoritical Society 2011)
- $200 Watts-Wheeler research grant to obtain/characterize apatite SIMS standards
- $750 Levy Grant to study seafloor gabbros

Outreach:

- Origins of the Solar System – Presentation to high school science classes – 5/2011, Queens, NY
- University of Georgia Disability Services Speakers Bureau – Presented information to inform professors and the public about the challenges for students with disabilities in the academic environment
- Geology club – several outreach programs to local middle schools and boy scout troops

Employment Experience:

Univ. of Georgia Athletic Department Athens, GA

Graduate Assistant Aug 2010-May 2012

- Scheduled over 80 tutors and 400 student-athlete's tutoring sessions
- Hired and trained 30 tutors
- Supervised tutors' progress and maintained payroll
- Served as a tutor Aug 2009-April 2011
- Advised students in study tactics and strategies
- Tutored students in geology classes
- Maintained records on student's progress

Aerials Gymnastics Eatontown, NJ

Coach/Manager 2001-2007

- Assisted in hiring and training new employees
- Created advertisements for newspapers and billboards
- Created and maintained company website
- Maintained safety of all equipment for 800 students
- Coached gymnastics