Mineralogical Society of America and Geochemical Society Short Course Announcement

MINERALS, INCLUSIONS & VOLCANIC PROCESSES

Dates: Short Course sessions are Saturday and Sunday, December 13-14, 2008 (preceding the Annual fall meeting of the American Geophysical Union in San Francisco). The Short Course will start at 8:00 AM on Saturday, December 13, and end 5:00 PM the evening of Sunday, December 14.

Location: Short Course sessions are at the Sir Francis Drake, San Francisco, 450 Powell Street, San Francisco, CA, 94102; Tel: +1 (800) 795-7129.

Convenors: *Keith Putirka*: Department of Earth & Environmental Sciences, California State University, Fresno, CA 2576 East San Ramon Ave. M/S ST24, Fresno, CA 93740, USA; Tel: +1 (55)-278-4524; kputirka@csufreso.edu.
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Fees:

		on or before 09/30/2008	*after 09/30/2008*
Professional Registration:	Member ‡	$235	$285
	Non-member	$325*	$375*
Student Registration[1]:	Member ‡	$ 50	$ 70
	Non-member	$ 95*	$115*
Speaker		no cost	no cost

‡ Mineralogical Society of America (MSA) and Geochemical Society (GS) members.
*includes 2009 MSA membership dues and electronic access to *American Mineralogist.*
[1]Student slots are limited

Registering: Online registration is at http://www.minsocam.org/MSA/SC/. Printable registration forms are also available online as well as from the MSA Business Office, 3635 Concorde Pkwy Suite 500, Chantilly, VA 20151-1125 USA. phone: +1 (703) 652-9950; fax: +1 (703) 652-9951; e-mail: j_a_speer@minsocam.org. Registration forms with payment must be returned to the MSA Business Office. Registration fees will be partially refunded if cancellation is received in writing on or before September 15, 2008. All participants and speakers must register.

Practical: Registration fee includes MSA/GS short course sessions, *Reviews in Mineralogy and Geochemistry* volume, and refreshments at the following times: pasteries in the morning, and an afternoon lunch on both Saturday and Sunday, and mid-morning and mid-afternoon breaks on both days. Registration fee does <u>not</u> include room, other meals, or any transportation costs to or from the short course site. Both participants and speakers must make arrangements and pay their own lodging and transportation. Participants may contact the Sir Francis Drake, 450 Powell St, San Francisco, CA, 94102; +1 (800) 795-7129 to make reservations and pay for rooms.

Short Course description: Minerals and their inclusions provide a valuable archive of volcanic processes, ranging from the depths and temperatures of magma storage, to the rates of magma ascent and the history of magmatic evolution and eruption. The goal of this short course is to bring together scientists who use different methods to understand these highly related issues. Key areas to be covered are: 1) thermobarometry, 2) the geochemistry of fluid and melt inclusions, 3) isotopic studies and age-dating techniques applied to minerals, 4) the kinetics of mineral growth and the genesis of mineral textures, 5) the role of volatiles during magma evolution and ascent, and 6) the physics of mineral-melt segregation. We hope to spark new collaborations, which may initiate new avenues of research, and possibly, transform our understanding of how volcanoes work.

In the context of the short course, attendees will learn how to: 1) Estimate pressures and temperatures of crystallization and ascent rates from melt and fluid inclusions and mineral compositions. 2) Estimate water and CO_2 contents for silicate liquids; use saturation models to infer depths of magma storage and dehydration. 3) Determine primary magma compositions and their diversity in the subduction factory, from olivine-hosted silicate melt inclusions. 4) Date mineral aggregates and individual crystals and estimate residence times from U-series disequilbria and diffusion profiles. 5) Estimate magma ascent rates from mineral textures and use isotopes to identify magma batches and processes. 6) Use imaging methods and isotopes to evaluate open-system processing and untangle the evolution of co-mingled crystals. 7) Utilize and test new

physical models of liquid-crystal separation to place temporal and *P-T* estimates into context. And perhaps most importantly, 8) synthesize items 1) – 7) into a coherent picture of magma storage, transport and eruption. For additional information see the MSA web site: http://www.minsocam.org

Short Course Topics and chapter titles for RiMG Volume

1. Thermometers and Barometers for Volcanic Systems.....Keith Putirka
2. Mineral-Melt Thermobarometers in Granitic Systems.....Lawford Anderson, Andrew Barth, & Joe Wooden
3. Magma Ascent Rates.....Malcolm Rutherford
4. Interpreting H_2O and CO_2 Contents in Melt Inclusions: Constraints From Solubility Experiments and Modeling.....Gordon Moore
5. Volatile Abundances in Basaltic Magmas and Their Degassing Paths Tracked by Melt Inclusions.....Nicole Metrich & Paul Wallace
6. Melt Inclusions.....Adam Kent
7. Reconstructing Subvolcanic Magma Chambers and Processes Using Melt Inclusions.....Jon Blundy & Katherine Cashman
8. Fluid Inclusions as a Tracer for Magmatic Processes.....Thor H. Hansteen & Andreas Klügel
9. Inter- and Intra-Crystalline Isotopic Disequilibria.....Frank Tepley & Frank Ramos
10. U-series Crystal Ages.....Kari Cooper & Mary Reid
11. Oxygen in Minerals: Using Oxygen Isotopes in Individual Crystals to Unravel Magma Origins.....Ilya Bindeman
12. Time Scales of Igneous Processes From Diffusion Modeling of Crystal Zoning Patterns.....Fidel Costa, Ralf Dohmen and Sumit Chakraborty
13. Mineral Textures and Zoning as Indicators of Open System Processes.....Martin Streck
14. Experimental Studies of the Kinetics and Energetics of Magma Crystallization.....Julia Hammer
15. Textural effects of crystallization kinetics.....Pietro Armienti
16. On the Dynamics of Magmatic Systems.....George Bergantz and Olivier Bachmann

Meeting Session: The short course will be held in conjunction with an AGU-sponsored topical session at the subsequent annual fall AGU meeting (the session will have the same title as the RiMG volume: *Minerals, Inclusions and Volcanic Processes*). If you submit an abstract for this session, please inform the convenors.