



AGS NEWSLETTER

ARIZONA GEOLOGICAL SOCIETY, INC. APRIL 2006

DINNER MEETING SPEAKER APRIL 4, 2006

AMANDA B. CLARKE

ASST. PROFESSOR, ARIZONA STATE UNIVERSITY
MONITORING ACTIVE VOLCANOES

ABSTRACT: Some of the most hazardous products of volcanic eruptions are pyroclastic flows, which are generated by a number of mechanisms, including gravitational collapse of lava domes and eruption columns. Active pyroclastic flows are a common occurrence at the Soufrière Hills volcano on the island of Montserrat, British West Indies, where the current eruption has been ongoing since 1995. Real-time monitoring of this and other active volcanoes is a valuable tool for authorities responsible for protecting local populations and for scientists seeking deeper understanding of mechanisms controlling volcanic eruptions. The most frequently measured parameters are seismic signals, volcanic gases (flux and chemistry), and edifice deformation. Besides offering the possibility of eruption prediction, these parameters can be used to indicate locations of large reservoirs of magma, identify the type of magma movement, and locate zones of high overpressure in the subsurface.



In 1997 on Montserrat, eruptive activity followed a cyclic pattern such that eruption prediction in the short-term was reasonably reliable. Seismic amplitude, gas flux, ground deformation, and pyroclastic flow activity peaked at ~10-hour intervals, and cycle amplitude increased with increasing magma ascent rate, providing a real-time means of monitoring subsurface dynamics. The cycles were also used to plan field campaigns and rescue missions, and led to a general understanding of subsurface mechanisms controlling lava dome collapse and explosive eruptions. The cycles were attributed to high overpressures in the shallow subsurface, caused by large changes in magma viscosity due to degassing and crystallization during ascent. The high pressure was released via sudden extrusion or explosion, thus preparing the system for another period of pressurization. *Amanda Clarke can be contacted at Amanda.Clarke@asu.edu or (480) 965-6590.*

Dinner Meeting Schedule:

Inn Suites Hotel: 475 N. Granada Ave. in Tucson

Cash Bar @ 6 pm Dinner @ 7 pm Talk @ 8 pm

Cost: With reservation: Members \$20, Guest \$22, Students \$7 Without reservation \$2 additional. Please call (520) 663-5295 by 5 pm by **April 3rd**. Indicate if a low-salt or vegetarian meal is required. Please cancel if you are unable to attend.

CALENDAR OF EVENTS:

- April 18 AGS Symposium Committee Mtg 5:30
- May 2 AGS Dinner Meeting Jon Fuller, Arizona Flood Hazards

AGS Symposium News:

The Fundraising Subcommittee and Treasurer now report that donations totaling \$36,500 have been received to date. **Phelps Dodge** has donated at the Platinum level, **Newmont** at the Gold level, **SRK Consulting** at the Silver Level, and **Gordon Wieduwilt** at the Molybdenum Level.

A subset of the committee recently received a guided tour of the El Conquistador Resort, and we now have a tentative room assignments attached to the meeting schedule. Lots of progress has been made recently in the areas of programming, field trips, and budgeting. The next round of publicity is focused on the alumni of the Geosciences Department at the University of Arizona and on the attendees of the May 2006 meeting "Wealth Creation in the Minerals Industry", which will be hosted by our cosponsoring organization, the Society of Economic Geologists.

There is still room for you to get involved. We need an enthusiastic volunteer to head the Core Shack Committee. The next meetings of the AGS Symposium Committee are on Wednesday evenings, **19 April, and 17 May 2006** at 5:30 pm at 353 ENRB (USGS Building) on the U of A campus. Hope to see you there.



ARIZONA
GEOLOGICAL SOCIETY

P.O. Box 40952
Tucson, AZ 85717-0952

Phone: (520) 663-5295
www.arizona Geological Soc.org

NON-PROFIT ORG.
U.S. POSTAGE PAID
TUCSON, ARIZONA
PERMIT NO. 1346

SEE WWW.AGSSYMPOSIUM.ORG FOR
INFO ABOUT THE AGS 2007
SYMPOSIUM

For info on ordering AGS
publications, visit
www.arizona Geological Soc.org.
AGS books & maps are sold at the
dinner meetings and by the
Arizona Geological Survey.

Current membership stands at 380. If you have a "05 Renew" on your address, please renew your 2006 calendar year dues. As always, please keep us up-to-date as you move, change jobs, or email addresses.

2006 AGS MEMBERSHIP APPLICATION OR RENEWAL FORM

Please mail check with membership form to: Arizona Geological Society, P.O. Box 40952, Tucson, 85717

Dues (check box) 1 year: \$15; 2 years: \$30; 3 years: \$40; full-time student (membership is free)

Name: _____ Position: _____

Company: _____

Mailing Address: _____

Street City State Zip Code

Work Phone: _____ Home Phone: _____

Fax Number: _____ Cellular Phone: _____

E-Mail: _____ I wish to receive newsletter by E-mail

If registered geologist/engineer, indicate registration number and State _____

Enclosed is a _____ tax-deductible contribution to the J. Harold Courtright Scholarship Fund.

Enclosed is a _____ tax-deductible contribution for the 2007 AGS Symposium.