



Lowell Program
in Economic Geology

The University of Arizona
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Dear Colleagues:

Please find enclosed an outline of the schedule and topics that we will cover in the **Short Course on Porphyry Deposits**.

For your reference, we also include below the dates of meetings of the *Mining Foundation of the Southwest* and the *Society for Mining, Metallurgy, and Exploration*, which will take place here in Tucson prior to the beginning of the Lowell Program short course. You may want to attend these events.

Sincerely,

Lukas Zurcher Manager, Lowell Program in Economic Geology
Eric Seedorff Director, Lowell Program in Economic Geology

Reference Dates

- 3 December 2005, Saturday evening, Mining Hall of Fame dinner, Mining Foundation of the Southwest <http://www.miningfoundationsw.org>. Induction of new members of Mining Hall of Fame; cost not included in short course; \$100 per ticket; contact us for more information.
- 4 - 5 December 2005 Monday SME Arizona Conference at the Doubletree Inn in Tucson. Regional mining conference held annually in Tucson, sponsored by the Society for Mining, Metallurgy, and Exploration, Inc. (SME); cost not included in short course. Additional information can be found on the SME web site <http://www.smenet.org>
- 6 - 15 December 2005, Porphyry Short Course, Lowell Program in Economic Geology**
<http://econ.geo.arizona.edu>

Tentative Schedule and Outline of Topics for Porphyry Short Course

5 December 2005, Monday

7:00pm - 10:00pm Reception and Organizational Meeting: Lobby Bar of Marriott University Plaza Hotel

6 December 2005, Tuesday

7:00am - 10:00am Travel from Tucson to Safford, AZ with road stops
Coffee Break

10:30am - 12:30pm *Talks*

- Introduction
- Geologic Framework and Context

12:30pm - 1:30pm *Lunch*

1:30pm - 6:30pm *Talks*

- Space-Time Relationships at the Regional Scale
- Deposit Classification
- Alteration Classification
- Alteration Types and Relative Ages
- Regional Settings of Porphyry Provinces

7:30pm

Dinner talk on Morenci District by a member of industry

Spend night in motel in Safford

7 December 2005, Wednesday

8:00am - 10:00am *Talk*

- Supergene Characteristics

10:30am - 11:30am Drive Safford to Morenci

11:30am - 12:00pm *Lunch*

12:00pm - 5:00pm Field exercise on supergene characteristics

5:00pm - 6:00pm Return to Safford

Spend night in motel in Safford

8 December 2005, Thursday

7:00am - 8:00am Drive Safford to Morenci

8:30am - 1:30pm Tour of processing facilities at Morenci

1:30pm - 2:00pm *Lunch*

2:00pm - 5:00pm Travel from Morenci to Tucson, AZ

Spend night in the Marriott University Plaza Hotel

9 December 2005, Friday

8:00am - 12:00pm *Talks*

- Alteration Geochemistry
- Vein Types and Breccia Types

12:00am - 1:00pm *Lunch*

1:00pm - 3:00pm *Talks*

- Mineral Characterization

3:00pm - 6:00pm Laboratory exercise

Spend night in the Marriott University Plaza Hotel

10 December 2005, Saturday

8:00am - 12:00pm *Talks*

- Hornfels-Skarn Replacement Characteristics
- Igneous Rocks
- Igneous Rocks, Alteration, and Spatial Characteristics (Zoning)

12:00am - 1:00pm *Lunch*

1:00pm - 3:00pm *Talks*

- Space-Time Temperature Relationships
- Levels of Systems and Structural Dismemberment

3:00pm - 6:00pm Laboratory exercise
Spend night in the Marriott University Plaza Hotel

11 December 2005, Sunday

Day off:
Visit some of Tucson attractions!
Spend night in the Marriott University Plaza Hotel

12 December 2005, Monday

8:00am - 12:00pm *Talks*

- Radiometric age dating, with tour of analytical laboratories
- Stable Isotope Geochemistry, with tour of analytical facilities
- Structural Controls on Localization of Porphyry Deposits
- Controls on Petrogenesis of Porphyry Deposits

12:00am - 1:00pm *Lunch*

1:00pm - 5:00pm *Talks*

- Mining Methods
- Pyrometallurgy: Smelting of Copper
- Rock Mass Characterization

Spend night in the Marriott University Plaza Hotel

13 December 2005, Tuesday

8:00am - 12:00pm *Talks*

- Economics of Porphyry Deposits through Time
- Hydrometallurgy
- Environmental Geology and Geochemistry

12:00am - 1:00pm *Lunch*

1:00pm - 2:00pm Set up Field Trip
2:00pm - 5:00pm Laboratory exercise review
Spend night in the Marriott University Plaza Hotel

14 December 2005, Wednesday

7:00am - 9:00am Leave Tucson for field exercise in Tortilla Mountains
9:00am - 12:00pm Field exercise though porphyry system
Hike through tilted Teacup-Grayback composite pluton and associated hydrothermal systems

12:00am - 1:00pm *Lunch*
1:00pm - 6:30pm Ray and Superior Stops, Resolution Discovery Talk
7:30pm *Dinner talk on Resolution by a member of industry*
Spend night in motel in town of Globe

15 December 2005, Thursday

7:00am - 12:00pm Field exercise
Globe-Miami district: Geologic setting and mine tour (Webster Gulch)

12:00am - 1:00pm *Lunch*
1:00pm - 5:00pm Field exercise
 Roots of hydrothermal systems: the Schultze pluton and relation to
 porphyry systems
5:00pm - 7:30pm Return trip to Tucson
8:30pm *Final dinner in Tucson*

16 December 2005, Friday

Short course attendees fly out of Tucson