Why Study Mineralogy?

Perspective from Prof. Ethan Baxter on CAS ES 222 “Mineralogy” offered every Fall semester
Questions? Ask Ethan: efb@bu.edu, http://people.bu.edu/efb

MINERALS PLAY IMPORTANT ROLES THROUGHOUT THE EARTH SYSTEM

- Minerals form in response to a diverse array of Earth processes (igneous, metamorphic, sedimentary) from high- to low-temperature, from Earth’s surface to its deep interior, and from terrestrial to marine.
- Minerals influence and respond to physical, chemical, and biological processes operating throughout the Earth. This includes tectonics, volcanism, erosion, weathering, climate, the environment, and the very origins of life.

MINERALS ARE THE TIME CAPSULES OF EARTH HISTORY

- Minerals are the primary recorders of ancient earth processes. If you are interested in studying any past earth process, and if you can identify a mineral that formed in response to that process, then you can potentially use that mineral to learn about the process or event of interest.

MINERALS HAVE SOCIETAL & ENVIRONMENTAL RELEVANCE

- Minerals represent some of Earth’s most important natural resources including industrial minerals, ores, and gems. The very infrastructure of our society is made from these mineral resources (ex. copper wires, gold jewelry, diamond rings, aluminum cans, steel bridges, plaster walls, cell phones, nuclear reactors, and more).
- The geologically controlled geographic distribution and mining of these societally relevant mineral deposits can have significant, and sometimes disastrous, environmental and human consequences.

ACADEMIC PREPARATION & GRADUATE SCHOOL IN GEOSCIENCES

- Mineralogy is a foundational course for students with broad geosciences interests.
- Mineralogy is a recommended pre-requisite for ES301 (Structural Geology) and ES424 (Petrology).
- Mineralogy is a required class for many geological field camps.
- Mineralogy is expected undergraduate coursework for applicants to many geosciences graduate programs.

CAREERS IN GEOSCIENCES

- Mineralogy is valuable, and often expected, background for many non-academic geosciences careers including environmental consulting firms, geotechnical firms, materials industry, minerals & mining, the oil & gas industry, the USGS and other government agencies.

MINERALS ARE FUN

- Dazzling colors, crystals, and microscope optical effects make the study of mineralogy fun and exciting.