

Ph.D. position in planetary mineralogy/geochemistry

at Southern Illinois University (USA)

The Geochemistry Lab @ Southern Illinois University (Dr. Liliana Lefticariu) in collaboration with Jacobs, NASA Johnson Space Center (Dr. Tanya Peretyazhko) and Illinois State Geological Survey (Dr. Martin Pentrak) is seeking a highly motivated graduate student candidate for an interdisciplinary project in Planetary Geochemistry/Mineralogy. The project aims to study the transformation mechanisms of phyllosilicate minerals under laboratory and field Mars-relevant conditions and to identify mineralogical, chemical, and spectroscopic signatures of unaltered and acid-altered phyllosilicates under varying geochemical conditions. The ideal candidate should have an excellent background in phyllosilicate mineralogy and general wet laboratory techniques and be familiar with at least one characterization technique, including X-ray diffraction, infrared and Raman spectroscopies or Electron Microscopy.

The 3-year assistantship includes monthly stipend and full tuition and fee waiver.

Tasks:

- Design and perform laboratory and field experiments reacting phyllosilicates under varying pH and redox conditions, fluid compositions, and water/rock ratios.
- Field experiments will involve driving to an AMD site (~30 minutes from SIU campus) and sample installation and maintenance on the regular basis.
- Characterize samples using diverse analytical techniques.
- Determine the changes in structure, composition, and behavior of phyllosilicates.
- Publish in peer-reviewed journals and present research at scientific meetings.

Qualifications:

- MSc degree in geochemistry, mineralogy, environmental sciences, or inorganic chemistry (or related fields).
- Strong interest in planetary geochemistry and mineralogy.
- Documented experience in the use of one or more of the following analytical techniques (i.e., XRD, SEM, TEM, IR, FTIR, Raman, IC, ICP-MS)
- USA valid driver's license would be an asset.
- Capacity for interdisciplinary team-work and excellent communication skills.
- Proficiency in spoken and written English.
- Starting date: January 1, 2022 or August 15, 2022

Application deadline: **Applications received by 15 October 2021 will be given priority.**

Search Contact: Please address further questions and the application consisting of (a) a full CV, (b) a cover letter detailing your qualifications and motivation statement;(c) the names, emails, and full addresses of three referees in one coherent PDF file to [Dr. Liliana Lefticariu \(lefticar@siu.edu\)](mailto:lefticar@siu.edu) before the application deadline.