

Colorado State University
AIRIE Program – Department of Geosciences

in collaboration with

Geological Survey of Norway

POSITION DESCRIPTION

<u>Position Title:</u>	Postdoctoral Research Associate #2
<u>Key Descriptors:</u>	Re-Os, hydrocarbons, petroleum geochemistry, organic geochemistry
<u>Location:</u>	Colorado State University, Fort Collins, Colorado
<u>Start Date:</u>	As soon as possible
<u>Duration:</u>	Full-time (includes benefits) One year initial term with up to 3-year extension based on performance.

Project Statement: The AIRIE Program is undertaking a major project in Arctic geology in collaboration with the Geological Survey of Norway, based on samples from the Barents Sea region. The goal is to refine methods for Re-Os isotopic analysis of organic material in black shales and migrated hydrocarbons, and use the results to ascertain the behavior of Re and Os in hydrocarbon systems, correlate migrated hydrocarbons with potential source rocks, determine the timing of hydrocarbon migration, and perform basin-scale modeling of petroleum systems. The funding is provided by a research grant (Petromaks) from the Norwegian Research Council and the Norwegian petroleum industry. The project duration is four years.

Specific responsibilities for the incumbent of this position include:

1. Experimentation with new analytical techniques, both for the chemical extraction of Re and Os from hydrocarbons and for instrumental methods for analysis of Re and Os isotopic ratios.
2. Re-Os isotopic analyses of hydrocarbon samples.
3. Research on behavior of Re and Os in hydrocarbons during maturation and migration, and distribution of Re and Os among hydrocarbon species.
4. Literature review and communication with active researchers to define new, significant questions in petroleum exploration that can be addressed by correlation of migrated hydrocarbons with source rocks and/or timing of migration.
5. Integration of newly acquired Re-Os isotopic data for hydrocarbons with other data from stratigraphy, structural geology, biogeochemistry, and organic geochemistry to contribute to basin-scale models for hydrocarbon migration using Re-Os.
6. Presentation of results at international scientific conferences, publication of journal articles, and contributions to future research proposals.
7. Assist with routine laboratory work, as needed.

The incumbent has the potential to grow with the position, contributing to new methods and concepts as personal skills develop and the science evolves.

Requirements:

1. PhD in geology, geochemistry, organic chemistry, or closely related field.
2. Experience, through either employment or education, in isotope geochemistry, including wet chemistry laboratory techniques for isolation of elements and thermal ionization mass spectrometry.
3. Computer skills, including expertise in use of standard software (e.g., Excel, Corel Draw), comfort with networking and web site construction, and ability to do simple programming (e.g., Basic).
4. Knowledge of the geosciences and petroleum geochemistry.

Desirable capabilities:

1. Background in petroleum geology and/or organic geochemistry.
2. Ability to design chemical experiments to track elemental and isotopic fractionation (particularly Re and Os) and isolate hydrocarbon fractions working with natural samples.
3. Familiarity with operation and maintenance of mass spectrometers; ability to work with technical support to repair the instrument or manipulate software.
4. Knowledge of statistics and fundamentals of quality control in an isotope laboratory.
5. Strong communication skills, both written and oral.
6. Comfort with other cultures, working with colleagues from varied backgrounds, and traveling internationally.
7. Enthusiasm, work ethic, intellectual curiosity, and interpersonal skills for working as a member of a scientifically vibrant and forward-thinking team.
8. Self-starter and a finisher.

Supervision:

Position is supervised by Dr. Holly Stein, Senior Research Scientist and Director of the AIRIE Program. Ultimate hiring authority rests with the Head of the Department of Geosciences.

Application procedure:

Send a statement of qualifications, CV, and names and e-mail addresses as e-mail attachments to Dr. Holly Stein at hstein@warnercnr.colostate.edu. Applications will be accepted until the position is filled, but for full consideration, apply before review begins on November 1, 2007.

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