

Engineer or Associate Engineer

Focus: Design of instrumentation for field-based atmospheric and ecosystem measurements

Institution: Ecology & Evol. Biology and Biosphere 2, University of Arizona, Tucson, AZ

Start Date: Summer 2008

We seek a creative engineer with background applicable to the design, construction, deployment and maintenance of robust systems of field-deployable automated instrumentation. This position will provide self-starting individuals with opportunity to manage instrumentation projects from design phase to final construction and field testing/troubleshooting, and to collaborate with research scientists using the instrumentation for research.

The engineer will work initially with an interdisciplinary team on deploying a new optical spectrometer (using Quantum Cascade Lasers, QCL) for measurements of atmospheric CO₂ and its isotopic composition (¹³C/¹²C and ¹⁸O/¹⁶O), along with support instrumentation including a precisely controlled automated gas-flow calibration system. Deployment includes field sites (at the Harvard forest site in Central Massachusetts, and possibly in the Amazon of Brazil), and within the University of Arizona's Biosphere 2, the unique enclosed ecosystem system science facility outside of Tucson, AZ. The science goal is to study mechanisms controlling coupled carbon and water exchange between ecosystems and the atmosphere.

The selected candidate must have training and experience in mechanical, civil, or electrical engineering, and familiarity with software packages used in computer-aided design, data acquisition, and in data analysis (such as Splus or Matlab). Desired areas of engineering experience include pressure and flow control, thermal management, electronics, and optics. Additional background in ecosystem science applications, including techniques for measuring isotope ratios in gases or materials, or of biosphere-atmosphere fluxes, is a strong plus.

The position is based at University Arizona, but may involve time commitments near Boston, MA for the first year, during which the instrument will be deployed for testing and measurements at Harvard Forest (collaborating with scientists at Aerodyne Research, and at Harvard University's laboratory for atmospheric chemistry). Subsequent work would focus on design and implementation of related Biosphere 2 instrumentation.

This position provides exceptional opportunities to contribute to addressing problems of both scientific and societal interest using cutting-edge technology (see web pages below).

Competitive salary and benefits are provided; the University of Arizona is an equal-opportunity employer.

To apply, go to: <https://www.uacareertrack.com/> (search postings for job number 40537)

Also send (electronically) a CV, and the names and contact information of three references to:

Dr. Scott Saleska
Ecology & Evolutionary Biology
University of Arizona
saleska@email.arizona.edu

For more information on this project (including related publications), see:

<http://eebweb.arizona.edu/faculty/saleska/research.htm> (Saleska group)

<http://www.b2science.org/> (University of Arizona Biosphere 2)

<http://www.aerodyne.com/> (Aerodyne Research, Inc.)