

Position: Reactive Transport Modeler - Senior Scientist (*Full-time*)

Company Overview:

Terradot is building the foundation to regenerate the world's soils to restore ecosystems, ensure abundant food production, and stabilize Earth's climate for generations to come. We do this by building and implementing high-integrity measurement, reporting, and verification (MRV) platforms for nature based carbon removal and storage solutions. Originally with Stanford's Soil and Environmental Biogeochemistry Lab, we leverage technological innovation using ground truth sampling, remote sensing, and biogeochemical & Reactive Transport Modeling modeling. We are a public-benefit team driven by passion and purpose in service to our planet, people, and prosperity for all.

Location: In Person (San Francisco, CA) / Flexible / or Remote

Position Overview: We are seeking an experienced Reactive Transport Modeler (RTM) - Senior Scientist to be a part of our team to make meaningful and purpose driven outcomes in the space of MRV using enhanced rock weathering. This is an opportunity to work and be supported by a team who all share a desire to change the world for future generations using regenerative ag, soil amendments, and technology. The RTM will play a critical role developing tools to upscale reactive transport modeling at field level.

Key Responsibilities:

Model Calibration and Validation:

- Integrate greenhouse/field measurements into the coupled reactive transport-crop model predicting the long-term implications of ERW on global and regional carbon cycles.
- Develop Python pipelines to upscale the coupled reactive transport-crop model across regions and environments.
- Lead the calibration, validation, and immersion of reactive transport and Earth Systems models.
- Direct sensitivity analysis to understand the primary determinants influencing ERW outcomes.
- Lead the model verification under certified ERW protocols.

Collaboration:

- Engage with a network of geochemists, agronomists, and other domain experts to refine ERW measurement methods.
- Coordinate with an interdisciplinary team of scientists, engineers, & agricultural experts to optimize ERW deployment strategies based on accurate measurements.
- Collaborate with an enthusiastic and mission-driven team creating an enriching and supportive environment to meet our shared visions.

Communication:

- Publish findings in top-tier, peer-reviewed journals, emphasizing the intricate chemistry and isotope dynamics of ERW.
- Represent the organization at international conferences, focusing on the sophisticated measurement techniques utilized in ERW research.
- Disseminate the implications and potential of ERW to diverse audiences through public lectures, media engagements, and educational initiatives.

Qualifications:

- PhD in Geochemistry, Hydrogeology, Environmental Science, Computer Science, or a related discipline.
- Previous experience with simulation of flow, transport, and chemical processes in groundwater and soil systems, and scientific programming to support quantitative data analysis and development of customized simulation tools using Python.
- Strong modeling expertise including geochemical/reactive transport models (e.g. PHREEQC), groundwater flow (e.g. MODFLOW), flow and transport through unsaturated soils (e.g. HYDRUS).
- Demonstrated leadership in data interpretation and simulation related to reactive transport modeling and parameter estimation (e.g. PEST, Monte Carlo).
- An established track record of publications, especially in the realms of geochemical modeling.
- Strong interpersonal and communication skills, with a proven ability to lead and inspire multidisciplinary teams.
- Willingness and ability to travel to key regions for fieldwork and collaborative efforts.
- Industry experience developing Python pipelines and modeling applications.

What We Offer:

- Competitive salary and comprehensive benefits package.
- A leadership role in pioneering an innovative climate solution.
- Access to state-of-the-art research tools and a global network of preeminent experts.

To apply, please forward a cover letter explaining your interest and qualifications for the role, a CV, and a list of three professional references. We will consider applications until the position is filled.

We are an inclusive employer and value diversity. All qualified candidates are encouraged to apply.

Send email to jony@terrardot.earth