Soil Data Operations Specialist

The Soil Health Institute (SHI), www.soilhealthinstitute.org, is a global non-profit organization created to safeguard and enhance the vitality and productivity of soil through scientific research and advancement. The Institute brings together leaders in soil health science and the industry to conduct research and empower farmers and landowners with the knowledge to successfully adopt regenerative soil health systems that contribute economic and environmental benefits to agriculture and society. SHI has a dynamic team of scientists and educators working together to assess and promote soil health practices on U.S. farms.

SHI is seeking a Soil Data Operation Specialist to help improve and scale data collection, management, and dissemination for the Institute. This is a long-term position having clear, short-term goals for 2023, with opportunity for creative growth and development in subsequent years. The successful candidate will work under supervision of the Institute's Soil Database Manager , and work with scientists, field technicians, project managers, laboratory professionals, and partners to accomplish the following:

(1) Improve, scale, and automate data management flows related to soil health data collection, and (2) Facilitate the growth in SHI data collection and management and help ensure compliance with FAIR principles to improve all dimensions of data quality, privacy protection, and delivery.

Achieving these goals will include:

- Working closely with SHI scientists, SHI field staff, commercial lab technicians, and SHI scientific partners at universities and research centers, in the context of field sample collection, tracking samples through labs, and quality control in SHI databases
- Contributing to improvement and/or development and implementation of workflows and procedures for quality control/assessment, scientific review, flagging, revisions, etc.
- Developing and implementing semi- or fully-automated procedures and workflows for data enrichment and gap-filling (e.g., spatial data attributes, index calculation)
- Using ESRI Field Apps technology to develop smartphone templates and web applications for sample submission, submitting edits to sample ID attributes, sample ID and attribute creation, and capturing spatial geometry for points, lines, and polygons
- Improving existing and developing new Excel workbook and/or app templates for metadata entry, sample ID generation, and management data capture
- Developing template code (R and/or Python) and/or identifying application(s) for generating sample labels for multiple styles and printing templates
- Using Microsoft Power Automate or similar technology to create template automated workflows such as sample submission email notification and auto populating Excel sheets or database tables from ESRI Field Apps and form submissions
- Creating and maintaining a self-serve library of training documentation and templates, and continually assisting in setup, deployment, usage, data retrieval, privacy, and deletion
- Contributing to the development, improvement, and management of existing SHI code base (Python, R, SQL) for data intake and warehousing, with emphasis on increasing automation, flexibility, transparency, and reusability

Qualifications – Must Have

- Some combination of education and/or experience in agricultural sciences, conservation, soil science, natural resource management and data management. We need fluency in soil and agronomic jargon, an understanding of field-based agriculture, and someone knowledgeable in the process of data collection, curation, and sharing.
- Experience in, thorough coursework and/or work, using desktop GIS software (ArcGIS or QGIS), including knowledge of coordinate systems and projections, editing features, geodatabase and file organization, and mapping
- A working proficiency in one or more of, and ability to learn script execution in all, the following programming languages: Python, R, SQL
- Strong personal independence combined with a can-do attitude and desire for identifying and learning useful technologies that help get the job done
- Desire and enthusiasm to contribute to a professional team of that is mission-oriented to enhance and safeguard soil vitality for agriculture
- Comfort with large geo-spatial data sets or databases, such as SSURGO, POLARIS, Daymet, digital elevation models, etc.
- Existing permanent authorization to work in the United States

Qualifications – Nice to have

- Experience or desire to learn low- or no-code application development technology for data capture and management, especially the suite of ESRI Field Apps and Microsoft Power Automate (SHI will provide guidance and training resources as needed)
- Experience with content creation, organization, and management in ArcGIS Online
- Experience with data-related computer programming and scripting in Python, R, or SQL (including PostGIS), particularly in areas such as text manipulation, data frame operations, updates, (geo)JSON schema, and APIs
- Experience in relational database design best practices

Work Environment

SHI prefers the successful candidate to work at the SHI office in Morrisville, NC on a full- or part-time basis (i.e., 2-3 days/week). Fully remote work scenarios will be considered. This position will report to SHI's Database Manager. Travel to selected soil sampling campaigns will be required in year 1, less than 10% of time.

Compensation

The expected starting salary is approximately $85,000/year, with relevant experience, demonstration of completed projects, and ability to work on site. This is a full-time position with competitive paid leave, life, health and dental insurance, 401K, and other benefits.

To Apply

Email a cover letter, resume/C.V., copy of college transcripts (unofficial copy is okay), and the contact information of at least 2 references to Dr. Michael Cope, Soil Health Institute, mcope@soilhealthinstitute.org. References will not be contacted without the candidate being notified first. In the subject line of the email, please write "Soil Data Operation Specialist Application." Review of

applications will begin immediately, and the position will remain open until filled, with a goal of beginning work on or around January 2, 2023.