



## *September 2019- August 2020 Service Year* POSITION DESCRIPTION

### Position Title

Research Assistant

### Sponsoring Organization

Rich Earth Institute  
Brattleboro, VT

### Sponsoring Organization's Mission

Rich Earth Institute's mission is to engage in research, education, and technological innovation to advance the use of human waste as a resource. We envision a world with clean water and fertile soil achieved by reclaiming the nutrients from our bodies as elements in a life sustaining cycle.

### Goals for the ECO AmeriCorps Position

- Gain solid knowledge base about potential for eco-sanitation through integrating in all Rich Earth activities such as our Nutrient Reclamation Project, Eco-Sanitation Portable Toilet Service, Research Projects, and Public Engagement efforts.
- Successfully represent Rich Earth Institute at events, meetings, and outreach efforts in the Windham County Region
- Contribute as active participants to the planning and execution of our mission including collect/transport/treatment/application of urine-derived fertilizer and urine diversion installations at facilities
- Maintain a balanced service flow to meet self-identified professional goals while working at Rich Earth Institute.

### Essential Functions. Functions that the applicant must be able to perform

- Assist with testing, fabrication, data collection, and data analysis to support development of proprietary urine collection/treatment/storage technology including freeze concentrator and pasteurizer.
- Help maintain Rich Earth's constant stream of innovation by working with novel and innovative technologies that create measurable environmental impacts.
- Promote safe and efficient tools that will enable new communities to understand and practice nutrient recycling.
- Support Rich Earth's Eco-Sanitation Festival Toilet service by coordinating logistics, staffing the Rich Earth info booth at festivals/public events, and educating event attendees about nutrient recycling.

Marginal Functions. These are secondary to Essential Functions, may be negotiable, and can be completed as time allows.

- Attend events to meet and collaborate with local urine donors, as well as farmers, Rich Earth's staff, and Rich Earth's Board of Directors.
- Collect, organize, and manage data by utilizing spreadsheet calculations and graphing as well as taking notes about the set up and execution of different experiments.
- Documenting research results so the information can be used in peer-reviewed publications

#### Projects May Include

Rich Earth operates our nation's first community scale urine recycling system, transforming "waste" into a resource. Funded by the EPA, USDA, and National Science Foundation, and National Fish & Wildlife Foundation, Rich Earth uses alternative waste management technology to produce a legally approved sanitized Class A fertilizer product from nutrients in human urine. Since launching our Nutrient Reclamation Project in 2012, Rich Earth has established research partnerships, built proprietary equipment, convened community networks, and pioneered regulatory pathways that support urine diversion practices.

Measures of impact and performance include:

- Number of acres on farms where Rich Earth's fertilizer is applied
- Pounds of nitrogen and phosphorus removed from Connecticut River Watershed
- Number of urine diversion systems installed in our region's public and private facilities
- Number of people engaged in eco-sanitation practices or education at public events
- Gallons of water conserved through prevented toilet flushes by practicing urine diversion

#### Desired Qualifications

Background in one of the following fields: Chemistry, Biology, Research, Water Quality, Engineering, Environmental Science, Ecology

- Ability to serve as part of a collaborative team
- Ability both to take initiative and to take direction
- Ability to engage in open and direct communication
- Laboratory or field experience, with commitment to precise and consistent execution of procedures and management of data
- Commitment to ongoing learning about the field of urine diversion and related ideas
- Bachelor's degree or higher in related field
- Experience developing, executing, analyzing, and publishing scientific research
- Mechanical or carpentry skills, and familiarity with basic shop tools and materials
- Experience with and ability to develop digital data acquisition and control systems such as:
  - Arduino microcontrollers
  - Familiarity with Academic Writing
  - Comfortable handling human waste

#### Networking Opportunities

Rich Earth is a community-based organization with an international network and a visible platform for public engagement. Our programs in the southern Vermont region connect Rich Earth to homeowners, business owners, farmers, legislators, academic institutions, media outlets, charitable foundations, public events, and project partners such as the Windham Regional Commission, the Windham Solid Waste Management District, Brattleboro Wastewater Treatment Plant. Specifically, the ECO Americorps position at Rich Earth will have access to networking opportunities as they:

- Assist with operating our eco-sanitation portable toilet business at festivals/public events
- Help coordinate urine diversion system installations at public and private facilities
- Contribute to organizing stakeholder engagement events
- Be a part of the team that fields inquiries and represents Rich Earth in the community

#### Service Conditions

Services to be performed both indoors and outdoors, including the following settings:

Rich Earth Research Center

Rich Earth Farm Partners

Rich Earth Eco-Sanitation Service at Festival Events

May include some irregular hours on weekends and evenings, as needed

Telecommuting and flexible scheduling are possible

#### Minimum Qualifications:

- Be a US citizen, a national, or legal permanent resident alien of the U.S.;
- Be at least 18 years of age upon entering the Pre-Service Orientation (there is no upper age limit);
- Be a high school graduate or have a GED certificate, or be willing to work towards their GED as part of their service-year successful completion requirement. A member cannot have dropped out of high school to join AmeriCorps. If a member has a documented medical reason/professional opinion why they cannot finish high school, they might be eligible; call in this case;
- Has not been convicted of murder or sexual assault and is willing to undergo a National Service Criminal History Check;
- Must submit to Agency of Human Services checks, i.e. Adult Abuse and Child Abuse Prevention;
- Be committed to the ECO AmeriCorps program, and its ethic of service and personal and professional development of its participants;
- Have the ability and enthusiasm to drive to, attend, and participate in required trainings and events, and be prepared to drive up to 2-3 hours each way.

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