ECO AmeriCorps

2024-2025

Research Associate

Rich Earth Institute, 355 Old Ferry Road Brattleboro, Vermont 05301

Organizational Mission: Engages in research, education and technological innovation to advance the use of human waste as a resource.

Position Supervisor: Jamina Shupack, Executive Director

As the Executive Director of the Rich Earth Institute, my leadership and organizational strengths contribute to maintaining a high performance team at Rich Earth. Jamina also supports our organization's robust platform for educating the public about the possibilities and practicalities of nutrient recycling. My role at Rich Earth focuses on program development and implementation, staff support, financial oversight, and fundraising. Specifically, these responsibilities include:

- Oversight of active grant deliverables
- Contributing to grant and programmatic decisions
- Supervising AmeriCorps Volunteers & Rich Earth Internship Program
- Financial planning and oversight
- Conducting regular workflow check-ins with staff members
- Directing fundraising campaigns
- Supporting Portable Toilet Service Operations

<u>The Role:</u>

The Rich Earth Institute operates the first community scale urine recycling network in the United States to produce a legally-approved sanitized Class A fertilizer product. Our organization engages local, statewide, national, and international stakeholders as we promote nutrient recycling activities and related educational resources. Since 2019, an ECO Americorps Service Member has directly

supported projects to carry out these activities in order to help Rich Earth build our networks and gather data about the outputs of our operations.

Rich Earth advances the field of ecological sanitation through research, hands-on application, and education. There is a steady flow of projects in each of these arenas for an ECO Service Member to support and potentially lead. The ECO service position will be tailored to the skill set and interests of the Service Member. Some possible projects for this service position include but are not limited to:

- Data collection and analysis from lab trials, field tests, and social research interviews
- Application of pasteurized urine as fertilizer in agricultural settings
- Designing materials and lesson plans for educational and outreach projects
- Reviewing literature of cutting edge research in ecological sanitation
- Supporting Rich Earth's portable composting-toilet service
- Tending Rich Earth's demonstration garden and vermiponics food production system
- Manage email inquiries for Rich Earth's info@ inbox

As a small team of committed personnel working towards a paradigm-shifting mission, support from an ECO Service Member has and continues to be a tremendous boost to Rich Earth's overall project flow capacity. Service Members have taken leadership on tasks that support many different aspects of our organization's operations. Some of these projects have included management of our vermiponics food production system, transcription to support research, and responding to email inquiries received in our info@ inbox. Support with these projects builds our overall staff capacity by enabling Rich Earth to have a point person for ongoing activities with variable flows of tasks to be completed. Additionally, past Service Members have tabled for Rich Earth at community outreach events during the summer such as Brattleboro's monthly Gallery Walk and some of our region's festivals. This extra support with our community presence has helped Rich Earth engage with the public at more events throughout the warmer weather months.

Rich Earth regularly gathers information about the impacts of our programs and services. Our educational programs distribute follow-up questionnaires through Survey Monkey, which allow participants to offer feedback, ask questions, and document their participation in nutrient recycling. We also document overall participation in our educational programming through attendance records and Zoom registration reports.

Our team tracks the reach of communications through newsletter contacts, social media followers, donors to our annual appeal, and households on our mailing list. We have created spreadsheets that are regularly updated to track metrics such as email inquiries received, educational events hosted, sites served by our portable toilet service, and progress on installations.

Additionally, Rich Earth tracks the total volume of urine we recycle by recording the amount of urine pasteurized, and this data allows our team to calculate the following outcomes:

*Total water conserved by preventing toilet flushes

*Total volume of nitrogen and phosphorus diverted from the wastewater stream

*Total volume of fertilizer applied to our region's farmland

<u>Essential Functions:</u>

- Ability to work independently and as part of a team
- Have an enthusiastic, collaborative and flexible attitude
- Execute tasks/procedures with precision and accuracy
- Collect and analyze data from lab trials, field tests, and social research interviews
- Tend to Rich Earth's demonstration garden and vermiponics food production system
- Manage email inquiries for Rich Earth's info@ inbox

Secondary Functions:

The ECO position will be tailored to the skill set and interests of the Service Member. Some possible projects include and are not limited to:

- Apply pasteurized urine on local farmland as fertilizer
- Design materials and lesson plans for educational and outreach projects
- Review literature of cutting edge research in ecological sanitation
- Engage in the regulatory process around sustainable sanitation
- Support Rich Earth's portable toilet service
- Assist in Social research concerning attitudes, values and beliefs among a range of stakeholders
- Contribute to grant prospecting and project design
- Design and conduct social media campaigns
- Plan events such as Rich Earth's annual Food Cycles celebration
- Document research methods and results
- Manage Rich Earth's web store & product dissemination

Desired Qualifications:

- Bachelor's degree or higher in one or more of the following fields: Chemistry, Biology, Research, Water Quality, Engineering, Environmental Science, Ecology, Community Organizing, Science and Technology Studies, Anthropology
- Ability to collaborate with a team, to take initiative, and to engage in open communication
- Enthusiasm for creative approaches to community engagement and storytelling
- Laboratory or field experience; precise & consistent execution of procedures and data management
- Commitment to ongoing learning about the field of nutrient recycling and related ideas
- Computer coding, academic writing, scientific research, or mechanical electronic systems
- Mechanical or carpentry skills, and familiarity with basic shop tools and materials

Goals:

1. Host Rich Earth's sixth consecutive ECO AmeriCorps Service Term between September 2024 and August 2025 as an enriching professional development experience within Vermont's environmental sector.
2. Provide technical training and guidance in order to enable an ECO AmeriCorps Service Member to contribute to the research, education, and demonstration activities of the Rich Earth Institute.
3. Implement a flexible strength-based approach to tailor the scope of our ECO AmeriCorps Service position to align the interests, ideas, and skills of the Service Member.

What initiatives has your organization undertaken to support diversity, equity, inclusion, and justice (DEIJ)?

Rich Earth completed the optional ECO DEIJ Self-Assessment tool in February 2024 and arrived at the following results:

4 (Well on Our Way) - DEIJ Vision

4 (Well on Our Way) - Commitment

2 (Ready to Start) - Leadership

3 (Launched) - Policies

2 (Ready to Start) - Training

3 (Launched) - Diversity

3 (Launched) - Data

4 (Well on our way) - Community

2 (Ready to start) - Decisions and Actions

1 (Not Yet Started) - Accountability

2 (Ready to start) - Inclusion

TOTAL - 30 OUT OF 55 AVAILABLE POINTS

Rich Earth recognizes how defining and advancing our DIEJ commitment is an ongoing and evolving process. Members of our team have formed an Equity and Justice committee, which meets throughout the year. This committee has produced our organization's Equity and Justice statement, provided input on Rich Earth's current strategic plan, and built partnerships with organizations for collaboratively pursuing environmental justice funding.

On our website, we reviewed and revised our Core Values to reflect our DEIJ commitment, and added the section "Our History of Thinking & Intentions for Social Justice" for transparency about our progress on this journey.

Rich Earth's work has a direct alignment with the global movements for food and water sovereignty. We are committed to providing resources to communities that enable water conservation and low-cost fertilizer production. These resources include guidebooks, how-to videos, FAQ sheets, consulting, and technology. We also offer a water and climate justice themed webinar, which includes content exploring circular sanitation tools for addressing sanitation injustice in different US contexts.

Our organization serves as a global hub of information to foster the development of localized nutrient recycling networks. Rich Earth's website continues to serve as a repository of educational resources that are available to the public free of charge, including open-access simple technological designs. On a consistent basis, our staff receives and responds to inquiries from diverse constituents in the global community asking questions about Rich Earth's research and implementation efforts. Our team has also worked to maintain the accessibility of our technology by distributing low-tech household

collection systems (which we work to make accessible to people of all genders, ages, and abilities) on a donation basis and using grant funding to subsidize nutrient recycling installations.

How is climate resiliency part of the work your organization does?

By creating circular flows of nitrogen and phosphorus, our initiative returns nutrients from our bodies back to the land that sustains us. Accordingly, nutrient recycling represents a major step toward returning to planetary boundaries for biogeochemical flows. This ongoing relationship enables soils to continue providing food as we return nitrogen and phosphorus back to the land. As a circular system, nutrient recycling represents a practical approach to building more resilient climate communities with sustainable flows of nutrients to grow crops.

Will the member have access to networking opportunities in this position?

As a community-based organization, Rich Earth creates different opportunities for our team to engage in networking and public engagement. Rich Earth's ECO AmeriCorps Service Members develop community relationships across southern Vermont through serving with our organization. As part of a collaborative research team, our ECO AmeriCorps Service Member builds relationships with farmers, representatives from installation sites, Rich Earth's institutional partners, and participants at both public and digital events. Through the services we provide, Rich Earth team members also build relationships with groups who rent our portable toilets, food distribution sites that receive our produce, and a large network of urine donors.

Misc.

An ECO AmeriCorps Service Member will support the following activities at Rich Earth:

- Rich Earth coordinates a growing network of stakeholders who participate in nutrient recycling to protect waterways, conserve water, and support local agriculture. This network consists of urine donors, farms, municipal agencies, academic institutions, public events, media outlets, and regulators.
- Our work is directly supported by over 240 local urine donors and thousands of participants at events served by our fleet of urine diverting portable toilets. We also receive nutrients that are collected through urine diversion installations at residential and commercial locations.
- Cumulatively, our organization has conserved over 2.7 million gallons of water through preventing toilet flushes. In 2023, we collected 12,373 gallons of urine, which represents our highest annual total volume to date. From our work in 2023 alone, Rich Earth diverted 619 pounds of nitrogen and 36 pounds of phosphorus from the Connecticut River watershed.
- Rich Earth currently partners with farmers in Windham County who apply our fertilizer on hay fields and crop soils. These farms support Rich Earth's Research and Demonstration efforts through federally funded projects.
- Rich Earth's annual calendar of education events includes hosting webinars, leading a global Research Summit, tabling at local public events, welcoming groups for tours of our Research Center, and presenting at conferences.

As the supervisor of this Service Project, Jamina Shupack has adequate time and leadership experience to manage an ECO AmeriCorps Service Member. Jamina's experience of coordinating the Rich Earth Internship Program coupled with being an ECO AmeriCorps alum uniquely qualifies her with a deep understanding of both Rich Earth as an organization as well as what it takes to have a successful AmeriCorps experience. While Jamina will be the Service Project supervisor, our growing

team of personnel at Rich Earth will assist Jamina with training and project coordination for our 2024 full-time ECO AmeriCorps Service Member. Serving with different members of our team will provide opportunities for a Service Member to learn about a range of topics including public engagement, project management, science/research, agricultural practices, environmental stewardship, and technology development.

The Rich Earth team has extensive experience providing training to new staff members, and we have developed a functional model for managing our division of labor. Jamina's leadership continues to develop and sustain Rich Earth's daily operations, staff team, public image/branding, strategic planning, and network of project partners/supporters.

Rich Earth's work enhances climate resiliency through the following ongoing outcomes of nutrient recycling:

1. Mitigating nutrient pollution in waterways. Rich Earth's collection technology diverts the nitrogen and phosphorus in human urine from the wastewater stream including both centralized and onsite systems. Nutrient pollution is becoming more pervasive and threatens clean water supplies around the world. Over 10,000 water bodies in the United States alone are currently defined by the EPA as impaired by nutrient pollution. The impacts of nutrient pollution are best known from dead zones and harmful algal blooms in water bodies.
2. Conserving water by preventing toilet flushes. Toilets are by far the main source of home water use in plumbed communities. According to the EPA, toilets account for nearly 30% of an average home's indoor water consumption. As our changing climate causes more widespread drought conditions, the use of clean water for flushing toilets, and especially flushing urine, is becoming increasingly untenable.
3. Offsetting dependence on synthetic fertilizer. Nutrient recycling offsets energy usage and greenhouse gas emissions from production and distribution of synthetic fertilizer. Especially over the past year, the volatility of the global fertilizer market has been a cause for concern as prices dramatically increased and supply chain stability has been threatened. By providing the appropriate knowledge and tools to communities, this initiative mitigates dependence on synthetic fertilizer and ensures access to a steady supply of fertilizer anywhere in the world.
4. Supporting local agriculture. Rich Earth's fertilizer is distributed to our farm partners free of charge in exchange for use of crops and soil for field testing. Field trials have demonstrated that Rich Earth's fertilizer is effective as a direct replacement for synthetic fertilizer. Access to fertilizer catalyzes economic and public health benefits by strengthening agricultural operations and local food systems.

A Service Member will need appropriate clothing for three seasons (Spring/Summer/Fall) of outdoor agricultural research in the field. Rich Earth has a desktop computer at our Research Center, which could be available for a Service Member to use. However, it is highly recommended that a Service Member bring their own laptop. A reliable vehicle is expected.

Rich Earth has supported the housing search for all of our AmeriCorps Service Members thus far, and we will continue to do so for any future Service Members. We provide all new team members with a community orientation document that contains numerous local resources including community-building events and groups. The community orientation provided to team members who are new residents in our area also includes a tour of Brattleboro during the first week on our team. Our staff members are well networked in the community and are also able to provide recommendations for additional community connections. We have a weekly staff meeting where personal check-ins often include invitations to events outside of Rich Earth's operations that involve members of our team.

These events include small gatherings where members of our staff team spend time together in social settings.

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

Service Conditions:

The Rich Earth Research Center will be the primary space where service activities are performed. The temperature in our Research Center varies with the seasons. Some service activities will be able to be performed from home. Additionally, some service activities will be in other locations including outdoors in agricultural settings, in classroom environments, and at community events.

To apply: My AmeriCorps - Home Page

Position begins September 17th, 2024 and ends August 15th, 2025

The State of Vermont is an Equal Opportunity Employer. Positions are open to all applicants without regard to race, color, national origin, ethnicity, disability, age, gender, gender identity, sexual orientation, political affiliation, veteran's status, religion or creed.

AmeriCorps