Coordinator: Research & Technology Development Team

CAMINOS DE AGUA
SAN MIGUEL DE ALLENDE, GTO
WWW.CAMINOSDEAGUA.ORG

Description

Position: Research and Technology Development Coordinator
Type: Full time
Reports to: Executive Director
Location: San Miguel de Allende, Gto., Mexico and surrounding areas
Start date: January, 2019 working with the current coordinator; full position responsibilities go into effect in June, 2019

About the organization

The Alto Río Laja Watershed in Central Mexico, where Caminos de Agua works, is facing unprecedented water challenges. Unsustainable over-extraction of our aquifer is causing the water table to drop 2-3m per year. This concentrates naturally-occurring minerals in community water supplies to harmful levels. Today, wells are going dry and the water that remains often contains toxic levels of arsenic and fluoride, which are known to cause dental and crippling skeletal fluorosis, developmental disabilities, organ failure, and cancer.

Our mission is to make open-source water solutions accessible to communities at-risk in the watershed and leverage those solutions for others confronting similar challenges throughout the world. We work in partnership with local communities, leading research institutions, and other diverse actors to innovate and implement water solutions that create adequate access to safe and healthy drinking water supplies.

Our Research and Technical Development Team conducts rigorous science and engineering to create technology including rainwater harvesting systems and filters capable of removing...
the arsenic and fluoride. These technologies support the organizing processes of local community-based organizations and have potentially global applications.

Caminos de Agua is a registered 501(c)(3) nonprofit in the U.S. and a Mexican Asociación Civil (A.C.).

Position overview

The Research and Technology Development Team (“Tech Team”) at Caminos de Agua is the organization’s technical arm. The team focuses on:

- Developing novel water-related technologies;
- Optimizing existing water technologies;
- Improving manufacturing processes;
- Rigorously piloting and testing all technologies before implementation; and
- Collaborating with other branches of Caminos de Agua to plan successful technology implementation strategies.

The coordinator supervises Tech Team members and oversees all research and development projects at Caminos de Agua. The coordinator acts as a bridge between the Tech Team and Caminos de Agua’s executive staff, making sure that all research and development work is aligned with the organization’s priorities.

The Tech Team coordinator has a diverse set of responsibilities. The team has historically been made up of students, recent graduates, professional placements, and volunteers. They come from science and engineering programs around the world, through NGO partners like Engineers Without Borders - UK, and through our becari@ program that recruits recent Mexican graduates for six-month placements. Managing such a diverse array of scientists and engineers -- including chemists, coders, material scientists, treatment plant design specialists, and mechanical, civil, environmental, chemical, and manufacturing engineers -- requires the coordinator to be flexible, have a broad background, and change tasks quickly. The coordinator must think ahead and recruit enough qualified staff to keep the organization’s projects moving forward on schedule. While still giving appropriate technical guidance on current projects. The coordinator also manages relationship with technical advisors, university contacts, and research partners, and connects members of the Tech Team to mentorship and/or professional development opportunities. The coordinator reports to and works with the executive director on a weekly basis.
Current Tech Team projects include ceramic filter optimization, media development for arsenic and fluoride adsorption, and groundwater treatment system piloting. Caminos de Agua’s ceramic filters remove sediment and 99.9999% of biological pathogens from rain and surface water. While we have distributed over 2,000 units over the past five years, we are looking to scale production, improve quality, and make the filter universally installable and compatible with other inline filters. This project involves working with industry contacts and distribution partners, designing quality experiments and controls, mechanical adapter design and testing, shipping considerations, and design of granular media cartridges. The media development project uses primarily chemical engineering and material science to develop novel sorbents to efficiently, effectively remove arsenic and fluoride from drinking water at a low cost. We are currently piloting an arsenic-removal system and soon hope to be piloting centralized and decentralized systems that remove both arsenic and fluoride. Future projects may include rainwater harvesting technology design and optimization, new filtration projects, groundwater analysis, arsenic and fluoride detection, and others.

Since the Coordinator position is demanding and has many diverse responsibilities, to ease the transition, this position has a built-in changeover period, compensated at partial salary, where you will work hand-in-hand with the current Coordinator. This six-month period includes a three to four month stint as a member of the Tech Team, followed by a co-coordination period where you and the current Coordinator will manage the Tech Team together. After that time is complete, you will be transitioned into the Coordinator role. To make sure that this transition happens smoothly, we can accommodate various starting dates and compensation during this overlap period.

Roles and responsibilities

- Facilitate technical and non-technical orientation sessions;
- Communicate with domestic and international technical partners and advisors;
- Recruit and hire new Tech Team members including staff, fellows, and volunteers;
- Supervise all Tech Team projects;
- Create and manage internal documentation protocols;
- Lead regular technical check-in sessions with team members;
- Manage inventory, purchasing, and logistics for laboratory-related stock;
- Maintain relationships with former Tech Team members;
- Coordinate appropriate technical mentorship for Tech Team members;
- Write quarterly technical report on team progress;
Stay up-to-date on publications that apply to the Tech Team’s current research;
Allocate projects to members of the Tech Team according to the individual’s skills and background and Caminos de Agua’s priorities;
Be an available technical resource for Tech Team members;
Keep track of project management for all current and pending Tech Team projects;
Participate in research or technology development projects (time dependent);
Prototyping and preparing technologies for their appropriate deployment;

Qualifications

Required criteria

- Bachelor degree in science or engineering;
- At least three years of work experience in a field related to science or technology development. Work experience must include a role where you managed other people;
- Experience working with or studying water treatment and/or management;
- Fluent in Spanish or English, at least working proficiency in the other with a commitment to improve any deficiency;
- Experience dealing calmly with people from diverse backgrounds and having emotionally intense one-on-one conversations;
- Ability to plan ahead, prioritize tasks, work under pressure, and meet self-imposed deadlines;
- Willingness to constantly self-critique and improve based on constructive feedback;
- Background in experimental design and statistical data analysis;
- Experience in rapid prototyping and production-focused experimentation;
- Experience writing technical reports for technical and non-technical audiences;
- Proficiency with standard business software and general computer literacy;
- Dedication to the development of technology that promotes social justice.

Additional preferred criteria

- Experience designing and modeling gravity-driven water treatment systems;
- Experience developing and assessing novel sorbents for water treatment;
- Working proficiency in CAD for 3D modeling, Fusion360 preferred;
● Web development;
● Proficiency with statistics and data analysis;
● Experience with mathematical modeling;
● Familiarity with databases, querying, and data management;
● Familiarity with workflow automation in Zapier;

To apply

Send a cover letter and resume to Aaron Krupp at aaron@caminosdeagua.org.

Caminos de Agua is an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability status, protected veteran status, or any other characteristic protected by law in Mexico or the United States.