



Soil for Society Network

Team Science Manual

An onboarding resource for members

NSF AccelNet Design Award #2201335

Introduction

Soil for Society Network is an international network-of-networks initiative to accelerate research. The project is funded by the National Science Foundation AccelNet program (design-track; award #2201335) beginning fiscal year, 2023.

The **vision** is to empower a globally connected network of soil systems partners for sustainable development. The **mission** is to co-create a diverse and inclusive soil systems community of scientists, practitioners, and society toward climate-adaptive, sustainable, food and water systems. The current **objectives** are to (1) establish a diverse network-of-networks that is global and crosses disciplines, societal sectors & cultures; (2) conduct capacity building activities that provide training in skills needed for emerging professionals & underserved communities, including critical and systems thinking; and (3) synthesize knowledge leveraged by the network and develop the communication mechanisms needed to share with local communities, practitioners, and legislatures.

The leadership team upholds the following values:

1. **Community** - creating a diverse and inclusive, evidence-based community of soil-enthusiasts spanning career stages, geographies, cultures, disciplines, and sectors of society.
2. **Capacity Building** - preparing an emerging/NextGen workforce of systems thinkers to address complexities of future sustainable development.
3. **Space** - providing an inclusive space that fosters a culture of integrated systems thinking.
4. **Empowerment** - supporting communities with local knowledge and applied tools to guide adoption of evidence-based decisions and policies.
5. **Knowledge Exchange** - creating a platform for transparent, safe data and knowledge exchange.
6. **Co-Design** - utilizing a systems approach across social and economic dimensions to create community based, innovative solutions.
7. **Access to Knowledge** - facilitating access to data & knowledge through transdisciplinary collaboration.

This document was created by the award leadership team (PI, co-PIs, and Senior Personnel) to reflect a Team Science framework being used for creating international network-to-network research collaborations. This type of work by nature requires a significant amount of attention to the science of team science and collaboration to facilitate successful team dynamics to enable research advancement. This document serves a role in facilitating the onboarding process for new members, to ensure clarity in our approach to team collaboration.

This is a living document that will be periodically updated to reflect team collaboration preferences of current members.

Team Management

1. Team Functioning

The leadership team includes Principal Investigators (PIs), Senior Personnel, and a Project Coordinator. The lead PI and co-PIs are responsible for critical decision making (*e.g.*, budgets, activities, exchanges, personnel, data sharing, *etc.*) with support from the leadership team.

Contributions from each team member will vary based on individual strengths, interests, and availability, including (1) taking on leadership roles, (2) promoting inclusivity, diversity, and equity, (3) providing feedback, and (4) coordinating activities. Workflow for critical project tasks will involve discussions, documentation, and collective decision making. Guidelines and policies will be established as the project progresses. The Project Coordinator plays a holistic role in project facilitation and implementation.

To attend to team functioning, the leadership team meets biweekly and reviews and updates (if applicable) the collaboration manual quarterly.

2. Accountability

The leadership team promotes a sense of personal responsibility among team members by setting clear expectations and timelines and communicating regularly to share progress and updates.

3. Onboarding New Team Members

The leadership team recognizes the integration of new team members as fundamental to project growth and the mutually beneficial nature for the project to support the new member and the new member to support the project. A Team Science approach will be used to onboard new members, including an informal mentoring process that clearly discusses expectations and values of the team consisting of monthly (1) meetings with one PI or co-PI for the first six months, (2) meetings with the Project Coordinator, (3) engagement with the team of early career professionals.

4. Project Success

A primary indicator for project success will include the ability to secure long term sustainability of the network. To achieve project goals, the leadership team prioritizes implementing a Team Science framework, fostering a positive team dynamic with open and frequent communication, and creating an inclusive & purposeful network that meets existing gaps and barriers to progress.

Project success can be monitored by measuring over time (1) the quantity, quality, and diversity of networks and the quality of links between them, (2) commitment and participation in events, (3) hosting and facilitating collaboration activities, (4) broader impacts (*e.g.*, transformative behavior, policymaker, and public recognition of the importance of soil), and (5) inclusivity.

To be successful, the leadership team recognizes the need for (1) a well-defined governance structure, (2) a clear vision and mission, (3) fostering a social environment that builds trust, accountability, inclusivity & enjoyment, and (4) effective project management facilitated by effective communication, transparent decision making, and timeline tracking.

Team Communication

1. Internal Communication

The leadership team currently meets at a minimum biweekly for one hour over a video conferencing platform (*e.g.*, Zoom). Team members communicate frequently over email and occasionally over messaging or phone if the need is urgent. The expectation is for all general communication to include all team members, and all other types of communication regarding the project to include the lead PI.

The leadership team values differences in opinion, personality, expertise, and work styles among team members and leverages these differences by upholding respect for one another during conversation and discussion through listening and active engagement and participation.

The leadership team holds quarterly project reflections of the values, vision, mission, and progress.

2. Network Communication

Communication between the leadership team and the network will occur regularly and can come from any leadership members with lead PI approval of content or majority of group consensus. The Project Coordinator distributes announcements and promotional material, ensuring consistency with approval by the leadership team, via email, newsletter (using email marketing software like Mailchimp, social media ([LinkedIn](#)), and website (<https://soilforsociety.org>).

Public presentations can be given by any member of the leadership team after content has been approved by the lead PI, or a majority consensus of the leadership team. Media inquiries will be handled by the lead PI or Project Coordinator with leadership team guidance and support to ensure alignment with project objectives.

Team and Network Dynamics

1. Managing Conflict

In effort to leverage conflict for positivity, the leadership team prioritizes (1) trust through clear communication and using a proactive approach to addressing concerns, (2) creating a safe and confidential space for raising concerns to promote open dialogue, (3) disclosing conflicts of interest, and (3) ensuring all members have an accessible way to voice concerns to the lead PI and Project Coordinator.

The leadership team takes a proactive approach to managing relationship conflict (scientific or other) through prioritizing open communication, collaborative problem solving, and creating shared values. For conflicts that are not resolved internally, external mediation services will be employed.

2. Psychological Safety

The leadership team prioritizes creating a culture of psychological safety within the leadership team and across network members. The leadership team values building trust, maintaining respect, and creating a safe and inclusive environment where every person's input is valued. Allowing for open communication and anonymous feedback fosters a collaborative and supportive team dynamic, ensuring that all team members feel heard and valued.

As the project progresses, the leadership team will implement policies and practices to ensure a safe and inclusive environment, including: a code of conduct, community guidelines, multiple pathways for contribution, anonymous feedback surveys, independent facilitation and evaluation, transparent selection processes, and an emphasis on respect and professionalism.

3. Network Participation

We invite and include all team and network members to share news through the project platform newsletter.

Network of Networks Coordination and Collaboration

1. Technology

Given the global nature of the network, the leadership team prioritizes the use of virtual tools (*e.g.*, video conferencing and email) for accessibility and inclusivity. The network has been designed using these virtual communication tools and therefore, all current members are using these tools. Depending on how the network grows over time, the leadership team will continue to explore other tools to ensure wide accessibility.

To aid exploration of other tools, the leadership team will conduct a quarterly review of communication needs. In preparation for this review, members will be given an opportunity to express their communication needs through a questionnaire delivered via email. The leadership team will leverage existing resources available to test new tools and provide training to members.

2. Collaboration

Current challenges to collaborate include limited time and funding. Individual challenges include balancing responsibilities within the network with other commitments and personal life and managing a heavy workload while ensuring sustainable work practices.

Leadership priorities to enhance collaboration include navigating complex decision making, effectively leading a diverse team and fostering an inclusive environment and managing conflicts and promoting constructive resolutions.

Priorities to enhance collaboration across the network include facilitating seamless collaboration and communication among diverse networks, allocating resources efficiently and ensuring fair distribution of opportunities, managing challenges related to the expansion of the network while maintaining coherence, and keeping all network members motivated and engaged in achieving common goals.

Collaboration with early career professionals is integral to the success of the project and the leadership team prioritizes creating opportunities for learning, growth, and engagement in valuable collaborative training/experiences. The leadership team will utilize a mixture of formal and experiential training methods and provide mentorship. The leadership team will continuously review priorities for early career professional development and collaboration as the project evolves.

3. Authorship and Credit

The leadership team will follow established APA guidelines for assigning authorship and credit for public presentations, abstracts, articles, and intellectual property/patent applications. In addition, the leadership team will discuss authorship and credit as early as possible and use clear communication and consider the uniqueness of all circumstances.

4. Data Sharing

To support data management and sharing across the network, the leadership team prioritizes trust and adherence to national and international ethical guidelines. The leadership team will follow the

FAIR principles that ensure data are findable, accessible, interoperable, and reusable. In addition, guidelines at leadership institutions will be consulted and followed.

To build trust and encourage data sharing across networks, the leadership team will adopt a declaration that encompasses commonly used ethical standards, demonstrates best practices, and creates a culture of respect and inclusion.

Technology and platforms used to share data will follow institutional guidelines of leadership institutions, be cost effective and user friendly, and will be tailored to specific data characteristics. The advisory committee will be responsible for ensuring compliance and accountability. Institutional experts will be consulted to ensure compliance with institutional policies.

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Contact Information

Phone: +1-608-265-9065

Email: soilforsociety@gmail.com

Address: 460 Henry Mall, Madison, Wisconsin 53706, USA