NATIONAL SCIENCE FOUNDATION
LTER NETWORK
LONG TERM ECOLOGICAL RESEARCH

*Broadening Participation Committee*
*& Graduate Student Committee*

# Recruiting & Retaining Scientists in the LTER

*How to find and keep the best and brightest!*

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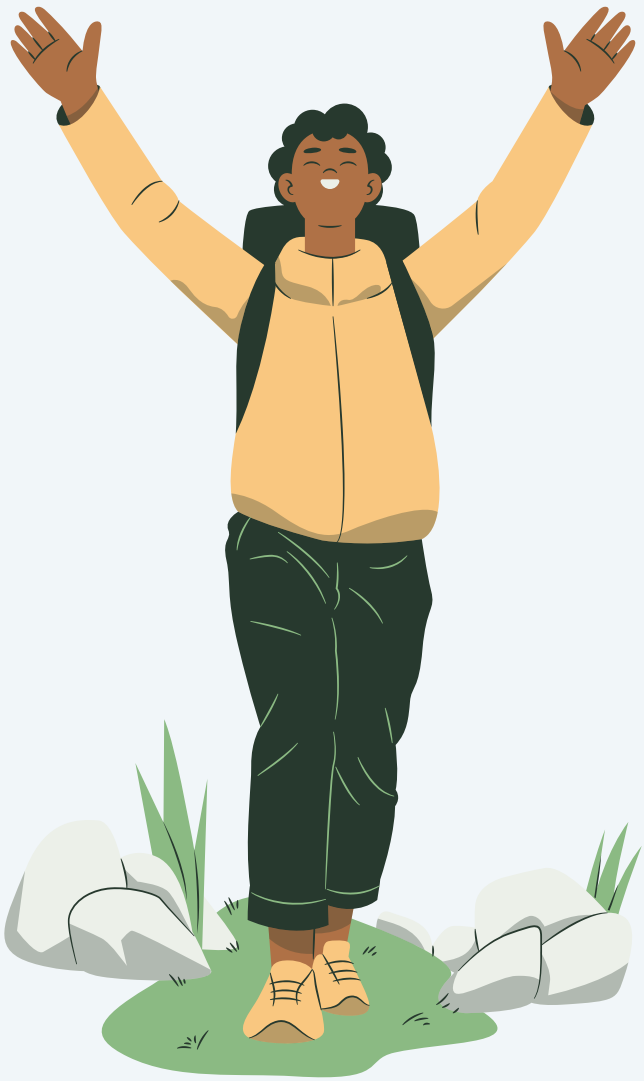
# Welcome Message



Results from the Long Term Ecological Research (LTER) Network's recent climate survey showed that sites' personnel become more uniform as their tenure increases. This mirrors trends within the discipline of ecology – and broadly within STEM – where senior leadership often does not represent the field at large. A significant pool of early-career ecologists exists across the LTER Network, and several LTER sites have drawn from this pool to introduce new perspectives to their co-PI teams and collaborative projects. This pool of researchers presents an opportunity to broaden participation within LTER leadership at the site and Network levels by adjusting our recruitment practices and retention to find and keep the best and brightest scientists in the field.

The Graduate Student and Broadening Participation Committees facilitated a discussion-based community call to crowdsource resources and strategies to improve recruitment practices and retention across LTER sites. The discussion focused on how to improve recruitment and retention via official procedural changes (modifying recruitment practices) or simple, personal changes (providing resources to more widely distribute job postings).

This community call began with a short presentation about the importance of adjusting recruitment processes to reach a broader audience and share simple steps we can all take toward this goal. Participants were then invited to participate in breakout groups to discuss specific topics within recruitment and retention. These discussions were used to produce this "Recruitment and Retention Handbook" to be shared across the LTER Network. This resource is meant for anyone connected to an LTER.

> ***Help us recruit and retain the best and brightest across the LTER Network and our broader scientific fields!***

# How LTER is Introduced & Presented

## Key Themes & Recommendations

**1. Welcome Packets and Orientation Processes**

- Clear, accessible onboarding materials are essential for helping new participants feel prepared.
- Strategies include welcome packets (like Hubbard Brook's Resident Packet - HB), pre-deployment Zoom sessions with flexible topics/times, and open Q&A with experienced students.
- Materials may be created by sites or PIs, but questions remain about ownership and keeping them up to date.
    - Example: McMurdo Dry Valleys (MCM) uses a "Deployers' Bill of Rights" to outline boundaries and expectations.

**2. Training and Introductory Resources**

- Short, targeted videos (~1 minute) can efficiently introduce field tasks, labs, sites, and even local logistics (groceries, laundry, recreation).
- These provide students, especially those without field experience, with confidence and clarity before arrival.

**3. Expanding LTER Awareness Beyond the Network**

- LTER can be introduced to broader audiences through undergraduate/graduate coursework, institutional info sessions, and seminar classes.
- Integrating LTER datasets into curricula allows students to engage with Network history, culture, and science.
    - This approach can spark synthesis projects and cross-site collaborations.

**4. Student Confidence, Belonging, and Success**

- Field sites' structured expectations help students, especially those uncertain or hesitant, to gain confidence and feel belonging.
- Sharing student experiences is a valuable tool for reassuring newcomers.
- One reflection highlighted that clear site structures enabled a stronger sense of success and belonging compared to campus settings.

# How LTER is Introduced & Presented

## Suggested Action Items for Sites

- Develop and maintain up-to-date welcome packets and documents with clear ownership and review processes.
- Implement pre-deployment orientation series (Zoom or hybrid) with open Q&A opportunities.
- Create and share short training/introductory videos for site, field, and local life logistics.
- Integrate LTER datasets and history into undergraduate/graduate teaching, seminars, or institutional info sessions.
- Collect and share student reflections on site experiences to normalize challenges and highlight pathways to success.

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# Advertising & Job Boards

## Key Themes & Recommendations

**1. Cast a Wide, Inclusive Net in Recruitment**

- Ensure that principles of open access and full belonging are represented in job advertisements, even in restrictive political climates.
- Avoid preferencing particular groups and focus on equitable access to opportunities.
- Use vetted, inclusive language to ensure that no one is excluded.

**2. Use Targeted Job Boards & Community-Specific Channels**

- In addition to conventional channels, share postings on platforms like:
  - SACNAS Opportunity Board
  - Black in Marine Science Job Board
  - Consider expanding to other similar affinity-based or culturally relevant networks.
- Share and build upon tools like the Kellogg Biological Station (KBS) Job Board Cheat Sheet to support inclusive outreach across LTER sites.

**3. Prioritize Pay Transparency**

- Clearly state compensation details in job postings.
- Highlight stipends, housing, relocation support, etc. (especially critical for early-career applicants or those from low-income backgrounds.)

**4. Focus on Accessibility & Equity in Applicant Pools**

- Intentionally engage:
  - Low-income
  - First-generation
  - Non-traditional candidates
- Recognize and address structural barriers to applying, such as relocation constraints or lack of academic mentors.

# Advertising & Job Boards

## Key Themes & Recommendations

**5. Leverage Networks and Mentorship**

- Many people find positions through faculty connections or conference networks, which can be intimidating without support.
- Encourage PIs and mentors to actively share opportunities with students and early-career scientists, especially those who may lack professional networks.
- Recognize that not everyone has the flexibility to move nationwide for opportunities; highlight remote-friendly or locally accessible roles when possible.

**6. Communicate Opportunities Clearly and Accessibly**

- Write postings in plain, straightforward language. Avoid jargon or buzzwords that may alienate or confuse applicants.
- Emphasize values and policies that resonate widely (e.g., supporting first-generation and low-income applicants).

**7. Adjust Application Timelines Strategically**

- Keep applications open longer to allow more people to apply.
- Time postings to coincide with academic breaks or job-search windows for broader reach.

## Suggested Action Items for Sites

- Develop and share inclusive language guidelines for job postings.
- Post jobs on affinity-based boards to expand reach.
- Require pay transparency by listing salary, stipends, housing, relocation, and benefits in every posting.
- Create plain-language templates for job ads to minimize jargon and improve accessibility.
- Highlight remote or locally accessible opportunities when possible to broaden applicant reach.
- Build a cross-site resource hub (e.g., expanding the KBS Job Board Cheat Sheet) for outreach tools and posting templates.
- Keep applications open for at least 3–4 weeks, and post at optimal times.

# Hiring Practices

## Key Themes & Recommendations

**1. There's No One-Size-Fits-All Hiring Process**

- Hiring varies widely across roles (e.g., field techs, research assistants, interns).
- Flexibility is necessary, but sharing practices across institutions can help increase equity and consistency.

**2. Stick Closely to Job Advertisements**

- Ensure the hiring process aligns with the posted qualifications and responsibilities to maintain transparency.
- Avoid changing expectations mid-process or introducing unwritten criteria.

**3. Emphasize Potential and Trainability**

- Particularly at rural or remote field sites, expand applicant pools by valuing:
  - Willingness to learn
  - Transferable skills over specific prior experience
- Offer on-the-job training to support a broader applicant base.

**4. Improve Candidate Awareness of Working Conditions**

- Provide documentation that outlines:
  - Typical field conditions
  - Physical expectations
  - Living arrangements or isolation
- This increases transparency and ensures applicants can make informed decisions.

# Hiring Practices

## Key Themes & Recommendations

**5. Recognize and Value Diverse Backgrounds**

- Not all applicants have the same access to research experiences - take care to:
  - Compare candidates in context (e.g., paid work vs. unpaid lab internships)
  - Value service-oriented jobs (e.g., retail, food service) for the soft skills they demonstrate.

**6. Use Rubrics to Guide Equitable Hiring**

- Rubrics help depersonalize selection and align hiring with broader mentoring or institutional goals.
- Internal rubrics can also help communicate group values across hiring teams.
  - Example: Virginia Coast Reserve (VCR) REU program uses a rubric that includes:
    - What the student will gain from the experience
    - How much the PI can support their growth
  - Example: Hubbard Brook (HBR) created a Hiring Checklist for PIs and field crew to use during the hiring process to improve communication about job requirements.

## Suggested Action Items for Sites

- Share sample rubrics for various roles (e.g., REUs, techs, postdocs).
- Include clear descriptions of field/lab conditions in job postings.
- Emphasize growth potential and be explicit about available training.
- Develop a cross-site resource hub where institutions can share hiring guides, checklists, and sample materials.

# Field Safety

## Key Themes & Recommendations

**1. Acknowledge Fieldwork as a High-Risk Space for Inclusion & Safety**

- Field experiences can be where participants feel least prepared or most uncomfortable.
- Being proactive about preparation, communication, and inclusive practices helps prevent harm and build belonging.

**2. Provide Site-Specific Training & Resources**

- Consider trainings like FieldFutures or Fieldwork Initiative, which can be customized for each site.
- Use models like VCR's Field Gear + Preparation document paired with annual safety calls organized by ecosystem (scenario-based discussions, individual needs, etc.).
- Complement technical safety with community-focused resources (e.g., Life on the Shore document).

**3. Foster an Inclusive Culture in Remote Environments**

- Create spaces where everyone feels they can be themselves, even in isolating or hierarchical field settings.
- Example: communal dining halls with TV monitors broadcasting rotating announcements, including weekly field safety and inclusion tips (University of Alaska-Fairbanks (UAF) FieldSafetyInclusion-WeeklyTips).

**4. Normalize Flexibility and Psychological Safety in High-Risk Activities**

- For specialized activities (e.g., research diving at Moorea Coral Reef-MCR), frequent check-ins are key.
- Encourage participants to speak up without stigma if they feel unsafe or uncomfortable. Embrace the opportunity to explore ways to adjust activities to improve safety and comfort for all.

# Field Safety

## Key Themes & Recommendations

**5. Address Power Dynamics and Pressure to Conform**

- Students and early-career researchers may feel pressure to "keep up" with more experienced peers.
- Building trust is essential so participants feel comfortable voicing discomfort or admitting limits.

**6. Broaden Definitions of Success in Fieldwork**

- Recognize that sometimes fieldwork reveals that someone is not interested in this type of research.
- Use LTER field experiences as opportunities to introduce participants to the wide range of ecological careers beyond traditional field research.

## Suggested Action Items for Sites

- Incorporate scenario-based safety calls annually, tailored to specific ecosystems and field conditions.
- Share and adapt resources like the Virginia Coast Reserve - VCR Field Gear + Preparation doc and UAF's Field Safety & Inclusion Weekly Tips.
- Offer opt-out mechanisms for high-risk activities (e.g., diving, boating) without penalizing participants.
- Establish trust-building practices such as regular check-ins, anonymous feedback, or mentoring systems.
- Highlight alternative pathways in ecology during field experiences for participants who discover fieldwork isn't a fit.

# Culture and Community-Building

## Key Themes & Recommendations

**1. Challenges of Building Community Across Distributed Sites**

- Sense of community is harder to establish when participants are spread out, especially post-COVID.
- Lack of a focal site or central location can create hurdles for those trying to foster connection.

**2. Leverage Virtual and Hybrid Engagement**

- Use Zoom or other virtual platforms for monthly grad meetings, pre-field orientations, or skill workshops.
- IM or chat platforms can support ongoing engagement between site visits when use is actively encouraged and intentionally cultivated.
    - Establishing clear norms, identifying moderators, and seeding early conversations can help prevent platforms from becoming inactive.

**3. In-Person and Social Opportunities**

- Weekend outdoor activities, off-site events, and non-science social events can help build rapport.
    - When staff capacity is limited, sites can support participant-led activities by sharing local resources, providing simple planning templates, and encouraging participants to take turns hosting informal events, helping distribute responsibility while strengthening community.
- Highlight local resources (grocery stores, hikes, etc.) to ease new participants into the community.
- Non-hierarchical science discussions and informal “talking shop” sessions foster inclusivity.
    - Example: Hubbard Brook’s traditional Science Nights

**4. Supportive Leadership and Maintenance of Culture**

- Leadership matters at all levels (PIs and grad students) to initiate and maintain spaces for interaction.
- A strong community requires intentional effort from someone willing to facilitate social and casual interactions.

# Culture and Community-Building

## Key Themes & Recommendations

**5. Principles and Expectations**

- Establish norms like an “Deployer’s Bill of Rights” to set expectations for participation and inclusion.
- Skill-based workshops can leverage community knowledge while fostering collaboration.

## Suggested Action Items for Sites

- Hold regular meetings to maintain connection (virtual if needed).
- Organize in-person or social events to foster community.
- Provide informal spaces for science discussions and knowledge sharing.
- Highlight local amenities for newcomers.
- Assign leaders to coordinate and sustain community-building efforts.
- Establish and share community norms.

# Mentoring

## Key Themes & Recommendations

**1. Early-Career Mentoring & Leadership Development**

- Mentoring among principal investigators (PIs) is often under-discussed, particularly the role senior PIs can play in supporting newer or early-career PIs as they step into leadership positions. This mentoring is crucial for sustaining leadership continuity.

**2. Balancing Site Identity and Inclusivity**

- Sites can become "cliquey," so it's important to maintain a unique site culture without being exclusionary.
- Mentoring should help students and early-career researchers navigate the site and LTER Network hierarchy effectively.

**3. Structured Mentorship Programs**

- Pilot mentorship programs highlight the importance of setting clear communication standards and expectations.
- Mentorship should include plans for situations when direct mentors are unavailable, ensuring support for newcomers like REUs or visiting students.

**4. Clear Documentation & Institutional Knowledge Sharing**

- Introductory documents on roles, responsibilities, and expectations are critical for onboarding new participants and sharing knowledge across generations.
- Examples: Virginia Coast Reserve (VCR) Roles & Responsibilities document; Arctic (ARC) welcome/roles document.

# Mentoring

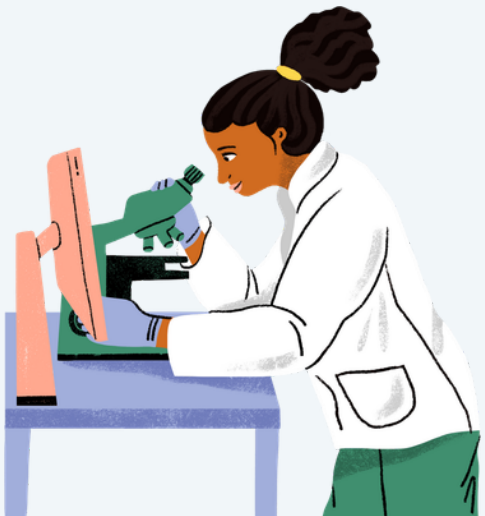
## Key Themes & Recommendations

**5. Feedback & Continuous Improvement**

- Identify mentorship gaps and communicate them to improve the program.
- Standardized expectations help everyone understand roles, responsibilities, and opportunities for growth.

## Suggested Action Items for Sites

- Develop mentorship programs that include both early-career researchers and students.
- Provide clear onboarding documents detailing roles, expectations, and institutional knowledge.
- Establish communication standards and backup support for when direct mentors are unavailable.
- Monitor and address mentorship gaps to improve program effectiveness.
- Balance site culture with inclusivity to prevent cliques and encourage Network-wide engagement.



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