Making Natural Connections:
An Authentic Field Research Collaboration

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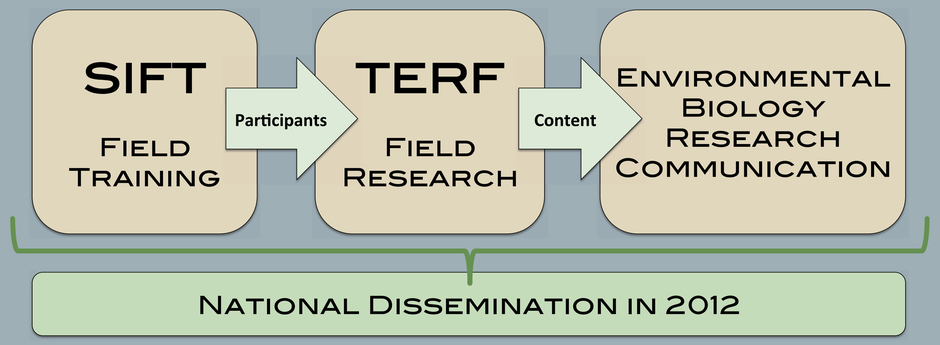
Project Design

Our NSF-funded project provides two field-based informal science education programs in environmental biology targeting St. Louis area teenagers. The project aims for engagement of a science research institution and career scientists in the execution of informal science education programming, bringing real and dynamic context to the science content. Participants act as a conduit to communicate current environmental biology research through community presentations and displays, bridging the communication gap between scientists and the public. The project provides a model for integration of informal science education into the research and restoration projects at biological field stations and nature reserves.

Partnered Programs Engaging Teens in Field Research



SIFT Program
Shaw Institute for Field Training

Introductory field skills training program designed to engage teens in scientific exploration of the natural world

- Five day summer session with overnight at Shaw Nature Reserve
- Training in outdoor safety, biotic and abiotic measurement/observation, Missouri ecosystems, GPS, GIS
- Saturday sessions in fall and spring, winter weekend with overnight
- Focus on collaboration, field skills acquisition, and science content
- Exposure to a variety of field projects and career field scientists
- 100 hours of learning and paid field work during summer and school year

TERF Program
Tyson Environmental Research Fellowships

More advanced field research internship program that provides teens with extended work experience on current research projects and training in scientific communication

- Four week paid summer internship at Tyson Research Center
- Cultural apprenticeship in university-based environmental biology research
- Communication of research projects to high school biology classes and community audiences, design of research posters for public audiences

Benefits of Collaboration

The project has forged a collaborative partnership between practicing scientists and science outreach educators at two separate institutions, benefiting both while also impacting high school students in the St. Louis community.

Shaw Nature Reserve

- Addition of high school level programming to educational opportunities hosted at Shaw
- Continuing access to scientists has allowed for deeper scientific investigation within curricula
- Leveraging of teens for progress on large-scale restoration activities and initiation of new research activities at Shaw
- Engagement of new segments of the St. Louis community at Shaw

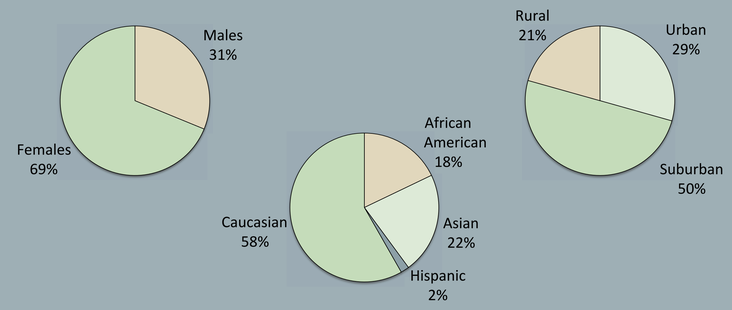
Tyson Research Center

- Integration of pre-college outreach into on-going university research activities
- Opportunity for mentoring at multiple levels
- Leveraging of teens for set up and continuing progress on small, large-scale, and landscape level research projects at Tyson
- Use of Shaw as research site by Tyson scientists
- Engagement of new segments of the St. Louis community at Tyson

Measurable Success

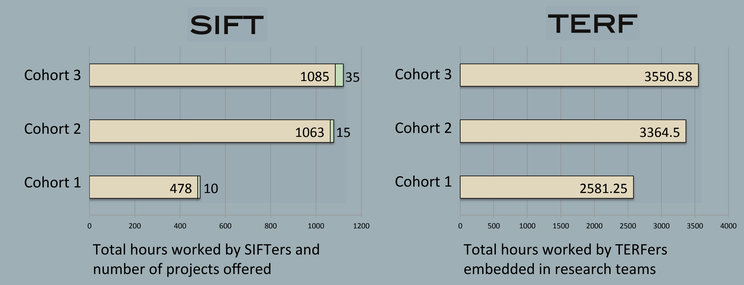
Teen Participants

Accepted participants come from a wide cross-section of the St. Louis community. Students from 51 separate high schools and homeschooled students are represented in SIFT Cohorts 1-4. (n=220)



Scientists

Research scientists reap tangible benefits from engaging motivated teens in their projects, and gain valuable mentoring opportunities to strengthen their teaching skills. We have found that a small investment in training time can result in a large gain of productive work hours during the field season.



Evaluation

Teen participants complete voluntary climate and career attitude surveys throughout the SIFT and TERF programs. Interviews and observations are also conducted to triangulate data on the quality of experiences.

Data indicates the combined SIFT and TERF programs:

- develop students' awareness of environmental science careers and seriousness of this career pursuit
- increase confidence in completing environmental science activities and college science/math courses
- develop the perception of fewer career achievement barriers and increase levels of confidence in overcoming remaining barriers
- provide feeling of greater environmental career supports