

Retirees
Enhancing
Science
Education through
Experiments &
Demonstrations



*A Guide to Developing a
Local Chapter of
Northeastern University's
RE-SEED Program*

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1 | Introduction

The RE-SEED program was started at Northeastern University in Boston, Massachusetts in 1991 with support from the National Science Foundation. RE-SEED pioneered the training and use of retirees whose knowledge and love of science and engineering uniquely qualify them to help middle school science teachers provide inquiry-based science instruction. RE-SEED Director, Professor Christos Zahopoulos, and members of the Northeastern University faculty have developed a thirty-hour training program that prepares qualified volunteers to provide effective in-classroom support to science teachers. It models how to combine high level science content with state of the art pedagogy based on the latest research on how people learn.¹ The workshops are customized to each state's science standards. The participants learn how to help teachers implement their science curriculum. Once trained, RE-SEED places the retirees in middle schools, as volunteers, to provide in-classroom support to science teachers. Typically, a RE-SEED volunteer spends one day a week in a middle school working with his or her assigned teacher for at least one academic year.

Presently, about 100 RE-SEED volunteers participate in Massachusetts middle schools and 40 outside of Massachusetts. RE-SEED's national presence, which began in 1996 with the support of the Institute of Electrical and Electronics Engineers (IEEE) Life Members Committee, has allowed RE-SEED to scale up the program resulting in the training of more than 500 volunteers who have offered close to 500,000 hours of their time to more than 100,000 students in eleven states.

2 | Need

One of the most significant challenges facing schools today is the shortage of teachers trained to teach science (especially physical sciences) and mathematics, which is leading to a growing number of students being taught these subjects by people teaching outside of their academic fields. RE-SEED volunteers help to bridge this gap because they have talent and expertise

¹ "How People Learn: the Brain, Mind, Experience, and School," National Research Council, National Academies Press, Washington DC, 2000.

that complement the skills of teachers. They bring with them a wealth of knowledge and experience that allows them to make science interesting and relevant to everyday situations.

3 | Starting a local RE-SEED program

Starting a local RE-SEED program or what we call a Regional RE-SEED Center (RRC) is a joint effort between Northeastern University and an organization in the area where the RRC will be located. The partner organization can be an institution of higher education, school district, volunteer organization, and other entities that have an appropriate infrastructure and school contacts to run the program.

The RE-SEED training, when held outside of Massachusetts, consists of five full-day workshops customized to the state's science standards. Participants receive a sourcebook of science activities, a kit of materials, and the RRCs receive a set of videotapes that match the topics of the sourcebook.

The second year of the training includes a 'train the trainer' model in which a group of volunteers chosen from those trained the previous year will be prepared to become RE-SEED instructors, called Leaders. This model of training local RE-SEED Leaders will significantly reduce the cost of running the training programs in future years.

4 | Logistics

Typically, the RRC handles the following aspects of running the program. Although, Northeastern University's RE-SEED program has the capability to offer assistance on some of these tasks as needed:

- 1) Recruit qualified individuals to take part in the training program with direction from Northeastern University's RE-SEED program.
- 2) Provide a location for 10-20 participants in the 5-day training program.
- 3) Reimburse Northeastern University's RE-SEED program for expenses related to running the one-week program

(materials, travel, instructors). Costs vary by location. Northeastern will provide a budget.

- 4) Place volunteers with teachers in the local school district and follow-up with the volunteers after placement is made to ensure that the school assignments are working well.
- 5) Host follow-up meetings for the volunteers on a regular basis (at least twice a year) to allow them to share ideas and receive feedback about their experiences in the classroom.
- 6) After the first year of training, seek funding to sustain the program. Northeastern University's RE-SEED program will advise and assist with this fundraising effort by sharing information about potential sponsors and collaborating on proposals.

Northeastern University's RE-SEED program provides the following services to the RRC:

- 1) Assist RRC with recruiting qualified volunteers by:
 - a) Providing mailing information for targeted population (IEEE Life Members, Northeastern University alumni in the area).
 - b) Giving the local coordinator ideas for other organization to contact (medical societies, universities, volunteer centers).
 - c) Providing samples of promotional letters, press releases, advertisements, registration forms, as well as RE-SEED brochures and news articles about the program.
- 2) Order and ship all training materials for workshops to training location.
- 3) Provide an on-site five-day training program for 10-20 volunteers that is customized to the state's science standards in consultant with the local school district.
- 4) Advise and assist RRC regarding fundraising efforts as needed. Some examples of this is providing samples of proposals, discussing strategy for reaching local foundations and individual sponsor contacts, and collaborating on proposals.
- 5) Provide a customized budget for the program and cost share when possible. Northeastern University's RE-SEED program is consistently seeking funds to match the RRC's funds.

Organizations with the appropriate infrastructure and connections to local schools are encouraged to explore becoming RRCs. For more information, please contact Deirdre Weedon at 888-742-2424 or d.weedon@neu.edu.