The NSF Research Traineeship (NRT) program is designed to encourage the development and implementation of bold, new, and potentially transformative models for STEM graduate education training. The NRT program seeks proposals that ensure that graduate students in research-based master’s and doctoral degree programs develop the skills, knowledge, and competencies needed to pursue a range of STEM careers. The NRT program addresses both workforce development, emphasizing broad participation, and institutional capacity building needs in graduate education. Strategic collaborations with the private sector, non-governmental organizations (NGOs), government agencies, national laboratories, field stations, teaching and learning centers, informal science centers, and academic partners are encouraged.

The NRT program includes two tracks:

1. **Traineeship Track**: This track is dedicated to supporting highly effective training of STEM graduate students in an interdisciplinary research area through a comprehensive traineeship approach that comprises elements that are innovative, evidence-based, and aligned with changing workforce and research needs.

Goals of the Traineeship Track program are to:

- Catalyze and advance cutting-edge interdisciplinary research in high priority areas,
- Increase the capacity of U.S. graduate programs to produce interdisciplinary STEM professionals with technical and transferable professional skills for a range of research and research-related careers within and outside academia, and
- Develop innovative approaches and knowledge that will promote transformative improvements in graduate education.
For FY2016, there are **four priority areas**:

1. Data-Enabled Science and Engineering (DESE)
2. Understanding the Brain (UtB)
3. Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS)
4. Any other interdisciplinary research theme of national priority.

Regardless of the research area, proposals must clearly describe an overarching interdisciplinary research focus and outline how the research theme will foster high-return, interdisciplinary synergies. Proposals should also describe how the training and research elements will be integrated and justify the need for bold and innovative approaches to train graduate students in the thematic area.

NRT trainees must be master's and/or doctoral STEM students in a research-based degree program that requires a thesis or dissertation. If an institution's NRT program includes both master's and doctoral students, the proposal should identify any differences in NRT program requirements, as well as mechanisms to foster the development of a collective NRT graduate student community.

**2. IGE Track:** This track is dedicated solely to piloting, testing, and validating innovative approaches to graduate education and to generate the knowledge required for the customization and implementation of the most successful, transformative ones. The primary target population for IGE projects must be master’s and/or doctoral STEM students in a research-based degree program that requires a thesis or dissertation. Activities proposed may include, but are not limited to, student professional skill development, career preparation and vocational counseling, faculty training, inventive partnerships, international experiences, internships, outreach, virtual networks, and mentoring.

Goals of the IGE Track are to:

- Catalyze rapid advances in STEM graduate education broadly as well as those responsive to the needs of particular disciplinary and interdisciplinary STEM fields, and
- Generate the knowledge base needed to inform model implementation and adaptability.

Leadership teams (PI/Co-PIs) comprising professional expertise in the learning sciences and pedagogy, as well as in the principal science domain(s), are strongly encouraged.

**AWARD INFORMATION**

NRT Traineeship Track Awards are expected to be up to five (5) years in duration with a total budget up to $3,000,000.
NRT IGE Track Awards are expected to be up to three (3) years in duration with a total budget between $300,000 and $500,000.

**LIMIT ON NUMBER OF PROPOSALS PER ORGANIZATION**

An eligible organization may participate in two Traineeship Track proposals and two Innovations in Graduate Education Track proposals per competition.

Participation includes serving as a lead organization on a non-collaborative proposal or as a lead organization, non-lead organization, or subawardee on a collaborative proposal. Organizations participating solely as evaluators on projects are excluded from this limitation.

**KEY DATES**

Internal Letter of Intent Due: October 29, 2015 (by midnight)
Internal Proposal Due (by Invitation): November 12, 2015 (by midnight)
Notification by: November 24, 2015

Sponsor Letter of Intent Due (Required): December 9, 2015
Sponsor Proposal Due: February 9, 2016

**SUBMITTING A MANDATORY LETTER OF INTENT**

Faculty members interested in applying are required to submit a letter of intent (LOI) by the deadline specified above. If interest exceeds the number of submissions the university is allowed, an internal competition will be held. Typically, all investigators that submit an LOI will be invited to submit an internal proposal. Occasionally, as appropriate, based on the LOI, only selected applicants will be invited to submit an internal proposal.

1. Click here to access the form.
2. Name the LOI as follows: “LastName-FirstInitial-NSF-NRT-2016”, replacing “LastName” with your last name and “First Initial” with your first initial.
3. Click on the following link: https://grants.nubic.northwestern.edu/welcome.
4. Login with your NU NetID and password.
5. Under the “Limited Submissions - Office of Research Development” heading, click “Apply” next to the “Letter of Intent: NSF Traineeship Program (NSF 16-503)”.
6. Update your profile.
   a. Populate the following fields: Phone, Title, and Department.
   b. Click on “Save draft and continue” to save your profile and move to the competition application page.
7. Insert proposal title. Click on “Save draft and continue.”
8. Click the Browse or Choose File button and navigate to your file on your hard drive or network. Select your file and click “Submit”. No supplemental documents are accepted.
You will receive a confirmation email from ORD indicating that your application was received.

**INTERNAL PROPOSAL GUIDELINES**

Proposals should be prepared with at least 1/2 inch margins, all around, 11 point font size and type and are required to contain the following components:

1. **Cover page** with descriptive title, your name, NU key personnel, and external partners (1 page limit).
2. **Introduction** (1 page limit) ONLY if you previously submitted an NRT internal/external proposal. Summarize how your current proposal differs from the previous one. If you submitted a proposal to the NSF, include the review statements and explain your plans to address them.
3. **Project Summary** (1 page limit):

   *For Traineeship Track:*

   Address the research area and theme, the training plan, and the research-education integration. Include the expected number of NRT trainees who will receive an NRT stipend, the number of additional NRT trainees who will not receive an NRT stipend, and the grand total. Specify whether the program will serve master’s students, doctoral students, or both. Each NSF merit review criterion (Intellectual Merit and Broader Impacts) must be addressed in a separate statement.

   *For IGE track:*

   Summarize the graduate education model or approaches that will be piloted and tested, or the existing pilot that will be adopted or expanded, as part of the IGE project. Describe the disciplinary field(s) involved, the knowledge that will be generated to inform implementation and adaptability of transformative approaches to STEM graduate education, and how the project is responsive to a need and/or opportunity. Each NSF merit review criterion (Intellectual Merit and Broader Impacts) must be addressed in a separate statement.

4. **Project Description** that includes the following components and follows the detailed corresponding instructions in the FOA Section V. A. Project Description for the Traineeship or IGE Track, respectively:

   *For Traineeship Track (3 page limit):*

   a. Theme, vision, and goals: Describe the overarching theme, vision, and goals of the proposed NRT with a focus on implementing new approaches
to training of STEM graduate students in the targeted high priority interdisciplinary research area, through a comprehensive traineeship.

b. Education and Training: Describe the adopted traineeship model and its components, including the justification and rationale for their inclusion, and how they are integrated with NRT research activities.

c. Major Research Efforts: Describe the novel, potentially transformative research that the NRT will catalyze through interdisciplinary synergies emerging from currently funded activities at the institution(s) and/or via separate NRT-funded interdisciplinary initiatives.

d. Recent Student Training Experiences: Describe the experience of the PI and Co-PIs with leading or participating in STEM education and training over the past five years. Describe any overlap and/or complementarity between the training and the proposed NRT program.

For IGE Track (2 page limit):

Innovation(s) in Graduate Education:

a. Describe the overarching goals of the proposed IGE with a focus on piloting and testing potentially transformative improvements in graduate education.

b. Specify the approaches or models to be piloted and tested, the targeted graduate student population, and the justification for their inclusion.

c. Identify the potential of the IGE project to provide appreciable and meaningful added value to the current degree programs at the institution(s) or in the discipline(s).

d. Discuss the potential for extending the approaches and activities nationally and how they could advance the modernization of graduate education across STEM disciplines.

e. Describe institutional plans that address facilitation of the pilot and how successful approaches, practices, and models will be shared across the institution and nationally.

f. If a collaborative proposal is proposed, describe the role of the non-lead institution(s) and the participating personnel roles, and the mechanisms for project communication.

In addition to NSF Merit Review Criteria, the following Additional Solicitation Specific Review Criteria will be used in reviewing the Internal Proposal:

For Traineeship Track:

- Integration of Research and Education: Does the proposal address training needs that are not currently available at the institution(s) and/or in disciplines, and are there clear and compelling connections between the training elements and the interdisciplinary research theme?
• Interdisciplinarity: What is the degree of interdisciplinarity and the potential for high impact synergies among the disciplines?

For IGE Track:

• STEM education, disciplinary, interdisciplinary, and workforce needs: To what extent would the project fulfill STEM education, disciplinary, interdisciplinary, and workforce needs?
• Knowledge generation: To what extent would the project generate the knowledge needed to inform implementation and adaptability of potentially transformative improvements to graduate education?

5. **NSF Biosketches** for the leadership team and other senior personnel, based on your best judgment regarding which biosketches would be most valuable for the review of your proposal (2 page limit for each biosketch).

6. **Recommendation letter** from your department Chair. If you are a Department Chair and/or your Department Chair is a key personnel on any proposal for this competition, please provide a letter from your Research Dean.

Prepare your proposal as a SINGLE PDF FILE. It should be named “LastName-FirstInitial-NSF-NRT-2016,” replacing "LastName" with your last name and "FirstInitial" with your first initial.

**UPLOADING THE INTERNAL PROPOSAL**

1. Click on the following link: [https://grants.nubic.northwestern.edu/welcome](https://grants.nubic.northwestern.edu/welcome).
2. Login with your NU NetID and password.
3. Under the “Limited Submissions - Office of Research Development” heading, click “Apply” next to the “Internal Proposal: NSF Traineeship Program (NSF 16-503)”.
4. Update your profile.
   a. Populate the following fields: Phone, Title, and Department.
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5. Insert proposal title. Click on “Save draft and continue.”
6. Click the Browse or Choose File button and navigate to your file on your hard drive or network. Select your file and click “Submit”. No supplemental documents are accepted.

You will receive a confirmation email from ORD indicating that your application was received.

**ASSISTANCE WITH PROPOSAL PREPARATION**
The Training Grant Support Office assists faculty in the preparation of institutional training grant applications, including: Data table production involving institution-wide and Training Grant Support Office-tracked data; Proposal development aids; Advice,
sharing of best practices, tips and traps; Coordination of special funding/ commitment requests made to The Graduate School in support of the training grant; and Special training grant-related projects. Please contact Jennifer E. Hobbs, PhD, Assistant Dean, Graduate and Postdoctoral Training and Development (jennifer-hobbs@northwestern.edu).

COLLABORATION OPPORTUNITIES
The Office of Research Development offers assistance in identifying and facilitating collaborations, putting together interdisciplinary teams, programmatic and administrative development of large, cross-school proposals, and leveraging institutional resources for outreach and education. Contact Fruma Yehiely (yehiely@northwestern.edu), Director of ORD, for more information.

CONTACT AND ADDITIONAL INFORMATION
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Limited Submissions web site:
http://www.research.northwestern.edu/ord/funding/limited-submissions/