Data Science Rotations for Advancing Discovery (RoAD-Trip)

Description

The purpose of the RoAD-Trip program is to provide fellowship support to junior biomedical scientists wishing to integrate their prior training and experience together with expertise and Big Data/resources being housed at leading institutions around the United States. Specifically, this unique program seeks to promote new collaborations between junior biomedical scientists and more senior-level data scientists to analyze pre-existing data. Through a process of "match-making", junior biomedical scientists will be paired with data scientists possessing access to large-scale computational infrastructure and expertise to conduct a focused "two-week"* joint project. Only new projects, in contrast to already established collaborations, will be considered under this program.

Once selected to participate in the RoAD-Trip program, the data science mentor and the biomedical fellow teams will complete the two-week* scientific rotation within five months and will submit an abstract for the finished project no later than April 3, 2017. Projects must be completed within this deadline.

A maximum grant award amount of $4000 will be granted to reimburse the RoAD-Trip Fellow for travel expenses. The grant award budget is composed of the fellow's airfare, hotel and per diem to help defray living expenses during the research training experience. Once the fellow has returned from the minimum 2-week RoAD-Trip, the fellow MUST notify the TCC RoAD-Trip Review team and submit receipts for travel expenses. Receipts should be submitted as soon as possible to expedite the reimbursement process. A $1000 honorarium will be awarded to mentors for their participation in the RoAD-Trip program. Honorariums will be distributed after the RoAD-Trip Data Science rotation projects have been finalized (i.e. after the abstract for the finished project is submitted).

For the minimum two-week* timeframe of the award, individuals are expected to pursue their joint research training on a full-time basis, normally defined as 40 hours per week. The month prior to the RoAD-Trip, we encourage applicants to begin preparing to benefit optimally from the RoAD-Trip itself; guidance on how best to structure this should be provided by the mentor and documented in the Joint Data Science Research Plan and RoAD-Trip Timeline (see "Application Process" below for more details about the two-phase application process).

Individuals are strongly encouraged to spend one month before and one month after the scientific rotation at the identified host institution to complete the project. This other time is not supported by the award.

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*The duration for data science rotations is expected to be a minimum of *2 weeks.* However, proposals for extended visits under the same funding amount are welcomed.
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Eligibility

The data science rotation should occur in a strong research environment that has appropriate human and technical resources and is committed to research training.

Individuals from underrepresented racial and ethnic groups, as well as women, and individuals with disabilities are strongly encouraged to apply. Only individuals with a primary appointment at a domestic research university or educational institution are eligible to apply. NIH employees are welcome to participate in the RoAD-Trip program, but due to limitations imposed on federal employees they may not be able to accept a fellowship or honorarium award.

Both fellow and mentor applicants must have their PhD at the time of initial application.

Application Process

The RoAD-Trip application process consists of two phases.

<u>Phase I</u>

During the first phase, junior biomedical scientists and senior data scientists will submit separate applicant profiles, an NIH Biographical Sketch, and a Letter of Reference, or Letter of Institutional Support (See the "Apply Now" options on the main program page to begin your applicant profile).
After a period during which such profiles will be gathered, potential fellows and mentors will be "matched." The review team will forward a list of compatible matches to prospective fellows and mentors, and they may decide to "like" each other. Once feedback is received from both parties, the review team will finalize the "matching" process.

    Phase I Required Application Documents:

    Fellow/Biomedical scientists:
- RoAD-Trip Fellow Applicant Profile
- Standard NIH Biographical Sketch
- Letter of Reference

    Mentor/Data Scientist:
- RoAD-Trip Mentor Applicant Profile
- Standard NIH Biographical Sketch
- Letter of Institutional Support

    Standard NIH Biographical Sketches

    Both the fellow applicant and mentor applicant must contribute current NIH biographical sketches. For more information regarding format, visit the <u>NIH Biosketch Instructions</u> page.

Letters of Reference

One letter of reference is required from the fellow applicant's institution chair or program head. One Statement of Institutional Support is required from the mentor/host institution outlining endorsement of the data science mentor's participation in the RoAD-Trip program during the proposed time frame.

The information retrieved in phase I will allow the review team to effectively arrange compatible matches between prospective junior fellows and senior data science mentors.

Phase II

In phase II, when compatible matches between junior fellows and senior data science are already established, both parties will be asked to jointly submit a Data Science Research Plan, and a timeline for the RoAD-Trip and related activities. The research plan should describe the purpose, methods, resources, and expected outcomes of a project where the biomedical scientist provides the data while the senior data scientist provides the computational and analytic resources. The specific contributions of the mentor applicant and the Big Data resources already in place at the host institution must be articulated along with a description of the research environment and the availability and quality of needed research facilities and research resources (e.g., equipment, laboratory space, computing resources, data). Importantly, this joint plan description must have an articulated goal of promoting the translation of "Big Data" into new knowledge within or bridging research fields relevant to the mission of the Big Data to Knowledge (BD2K) initiative, which include all NIH Institutes and Centers.

Phase II: Required Application Documents:

Fellow and Mentor
- Joint Data Science Research Plan
- RoAD-Trip Timeline

The RoAD-Trip Joint Data Science Research Plan should be no longer than 5 pages and include the following sections:

1. Project title, brief abstract, the names of the junior biomedical scientist and senior data scientist, and the institution(s) where the work will be performed
2. The biomedical subject matter of the project as a data science challenge
3. The background leading to the proposed research
4. The significance and the specific aims of the research
5. Proposed approach to analyzing the data (e.g. design and methods, resources)
6. Potential pitfalls and solutions
7. The expected outcomes of the project
8. Relevance of the project to the NIH BD2K initiative

Individuals are strongly encouraged to spend at least one month before and one month after the scientific rotation at the identified mentor institution to complete the project.

Important Dates:

Applications Due............................ September 2, 2016

Matching Completed.........................September 10, 2016

Joint Research Plan Due................. September 30, 2016

RoAD-Trip Awardees Notified........November 1, 2016

Finished Project Abstract Due........ June 1, 2017

Selection Process

Submitted Joint Data Science Research Plans will be critically evaluated by a RoAD-Trip Review Group chaired by the BD2K TCC Director, comprising members of the BD2K training community and representative(s) from NIH. Up to ten RoAD-Trip projects will be selected annually.

Post-Science Rotation Evaluation

In carrying out its stewardship of this program, the BD2K TCC may request information essential to an assessment of the effectiveness of this program from databases and from participants themselves. Participants may be contacted after the completion of this award for periodic updates on various aspects of their employment history, publications, support from research grants or contracts, honors and awards, professional activities, and other information helpful in evaluating the impact of the program.

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