NIH T32 PI Informational Meeting
April 14, 2020 | 1:00 p.m.

Office of Research Affairs + The Graduate Division

AGENDA

- Welcome & Introductions

- New NIH requirements from a reviewer's perspective

- New institutional strategy, resources, and process

- Q&A

WELCOME & INTRODUCTIONS

- Welcome from Professor Mark Lawson, Faculty Director – Postdoctoral Training and Education
- Introductions
  - Who is on the call today?
- General updates

NEW REQUIREMENTS FROM A REVIEWER's PERSPECTIVE

- Professor Elizabeth Komives, Chemistry and Biochemistry
  - What are the new requirements?
  - What is NIH's rational for the change?
  - How will the letter be reviewed/scored?

Outline

1. My background
2. What is NIGMS NIH's rational for the change?
3. What are the requirements and major changes?
    1. Mentor Training
    2. Mentor demographics
    3. Holistic Review
    4. Evaluation/assessment/reporting outcomes
    5. Career Development
    6. R & R
    7. Letter - How will the letter be reviewed/scored

My Background

PI of NIH T32 since 1995
PI - Molecular Biophysics Training Grant since 2010
Scored 1.4 five years ago – top score.
Trained >30 graduate students
Currently reviewer on TWD-B panel that reviews NIGMS T32s
Just renewed for another two-year term

Rationale for change in training grant FOA

1. Expand diversity of workforce
2. Recognition that trainees need to explore diversity of careers. Many stuck at post-doc since there are few jobs for faculty and also now fewer jobs for biotech industry.
3. Expand training in soft-skills for alternative careers
4. Recognition that people trained in medical science can contribute to society in many different ways
5. Realization that prior trainee assessments didn't correlate with success (GREs, GPAs) so need for alternative measures of assessment.
6. Continued challenges with T32s simply being source of funding and not actually accomplishing NIH's goals

Requirements and major changes – Mentor training and Mentor demographics

Mentors need to be diverse in terms of background (underrepresented groups, women…) and career stage

"Have the PDs/PIs received training on how to effectively mentor trainees, including those from underrepresented groups, and promote inclusive and supportive research training environments?

Do the PDs/PIs have a demonstrated commitment to training the next generation of the biomedical research workforce, leading recruitment efforts to enhance diversity, and fostering inclusive research environments?

Mentors MUST have receive Certified Mentor Training – offered by Center for Improvement of Mentored Experience (CIMER) this training must be in person by a certified trainer – we need campus-wide coordination, there is now a good group of faculty who have received this training but no list of who these people are. Joann Trejo coordinates in SOM.

Requirements and major changes – Holistic Review

A broad understanding across biomedical disciplines and the skills to independently acquire the knowledge needed to advance their chosen field;

The ability to think critically, independently and to identify important biomedical research questions and approaches that push forward the boundaries of their areas of study;

A strong foundation in scientific reasoning, rigorous research design, experimental methods, quantitative approaches, as well as data analysis and interpretation;

A commitment to approaching and conducting biomedical research responsibly and with integrity;

Experience initiating, conducting, interpreting, and presenting rigorous and reproducible biomedical research with increasing self-direction;

The ability to work effectively in teams with colleagues from a variety of cultural and scientific backgrounds, and to promote inclusive and supportive scientific research environments;

The skills to teach and communicate scientific research methodologies and findings to a wide variety of audiences (e.g., discipline-specific, across disciplines, and the public); and

The knowledge, professional skills and experiences required to identify and transition into careers in the biomedical research workforce (i.e., the breadth of careers that sustain biomedical research in areas that are relevant to the NIH mission).

Requirements and major changes – Evaluation/assessment/reporting outcomes

"This FOA provides support to eligible, domestic institutions to develop & implement effective, **evidence-based approaches** to biomedical graduate training and mentoring"

- Are the mission and objectives for the training program **specific and measurable**…producing a diverse pool of well-trained scientists with the technical, operational, and professional skills necessary to transition into careers in the biomedical research workforce?
- Will the courses, structured training activities, mentoring, and research experiences **achieve the stated mission and objectives** of the training program
- Does the training program plan explain how the courses, structured training activities, mentoring, and research experiences **employ modern, evidence-based approaches** to training, mentorship, inclusion and professional development?
- Does the application provide examples of … how the trainee's performance… will be monitored and evaluated?
- Are there plans to accommodate differences in preparation among trainees?
- Is it clear how the proposed program will enhance the research training environment and not simply provide financial assistance for the trainees?
- Is it clear how the training activities will be available to other students in the program(s), department(s) or institution(s) from which the trainees are drawn?
- For multi-disciplinary and/or multi-departmental programs, is it clear how the individual disciplinary and/or departmental components of the program are integrated and coordinated and how each will relate to an individual trainee's experience?

Requirements and major changes – Career Development

- Will the applicants and trainees be **provided with information about the career outcomes of graduates of the program** and about the overall biomedical research workforce employment landscape?
- Will the trainees be provided with adequate and appropriate information regarding the wide variety of careers in the biomedical research workforce for which their training may be useful?
- Will the trainees learn the skills, knowledge, and steps needed to attain positions in the sectors of the biomedical research workforce that are of interest to them?

Will the training program or institution provide experiential learning opportunities (e.g. internships, shadowing, informational interviews) that allow trainees to develop the professional skills and networks necessary to transition into careers in the biomedical research workforce? For applications for a Biotechnology Training Grant, are there plans to include industrial internship experiences in the research training program?

Career outcomes of trainees must be tracked, compared to similar students who were not appointed to the grant, and posted on the training grant website

Requirements and major changes – Training in Rigor and Reproducibility

The plan must describe how trainees will be instructed in principles important for enhancing research reproducibility including:

> evaluation of foundational research underlying a project (i.e., scientific premise),
> rigorous experimental design and data interpretation,
> consideration of relevant biological variables such as sex,
> authentication of key biological and/or chemical resources,
> data and material sharing,
> record keeping,
> transparency in reporting.

Are instruction strategies sufficiently well integrated into the overall curriculum; are they taught at multiple stages of trainee development and in a variety of formats and contexts?

Will all program faculty reiterate and augment key elements of methods for enhancing reproducibility when trainees are performing research in their laboratories?

Requirements and major changes – Institutional Letter

They must include a signed <10 page letter on institutional letterhead from key institutional leader(s) describing the institutional commitment to:

developing and promoting a culture in which the highest standards of scientific rigor, reproducibility and responsible conduct are advanced

ensuring sufficient start-up funding to permit early stage faculty to participate in training, **and bridge funding to ensure that training may continue if a mentor experiences a hiatus in funds**

supporting core facilities and technology resources, and describing how they can be used to enhance training;

providing adequate staff, facilities, and educational resources to the planned program

supporting the PDs/PIs and other key staff associated with the planned training program;

ensuring faculty have protected time available to devote to mentoring, training and research

considering activities integral to excellent graduate training (such as teaching and mentorship) in tenure and promotion decisions

promoting diversity and inclusion at all levels of the research training environment (trainees, staff, faculty, and leadership);

ensuring the research facilities and laboratory practices promote the safety of trainees

ensuring the research facilities are accessible to trainees with disabilities

ensuring a positive, supportive and inclusive research and training environment for individuals from all backgrounds

ensuring that trainees will continue to be supported when they transition from the training grant to other sources of support;

providing resources and expertise for evaluating the training outcomes of the program.

For institutions that have multiple NIGMS-funded predoctoral training grants, the letter should also explain what distinguishes the proposed program from existing ones at the same training level, how the programs will synergize and share resources when appropriate, and how the training faculty, pool of potential trainees, and resources are sufficiently robust to support the proposed program in addition to existing ones

NEW INSTITUTIONAL STRATEGY

- Professor Mark Lawson
  - UC San Diego's institutional strategy for meeting these new requirements

- Cory Davis, Research Scholar Manager
  Postdoctoral and Research Scholar Affairs
  Office of Research Affairs
  - Institutional Support Letter process

- Tamara Schaps, Assistant Dean of
  Graduate Strategic Initiatives
  Graduate Division
  - Graduate student support requests