National Institute of General Medical Sciences

Division of Training & Workforce Development

National Institute of General Medical Sciences

December 4, 2024

Modules for Enhancing Biomedical Research Workforce Training (R25) PAR-24-040 NOT-GM-24-039

2024 Applicant Webinar

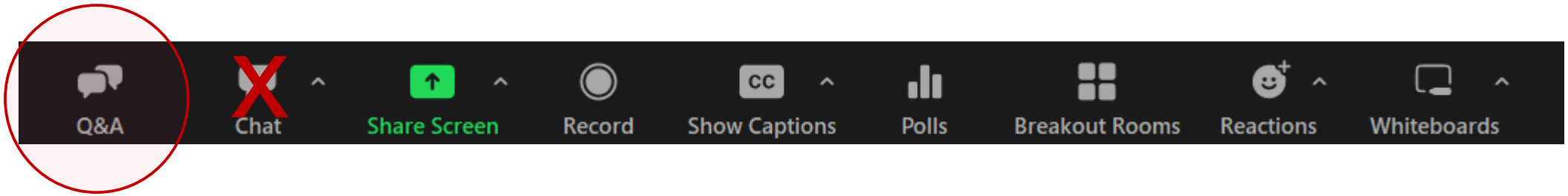
Program Officers: Kalynda Gonzales Stokes and Joyce Stamm

Review: Lee Slice

Grants Management: Adam Barnhart

Webinar Information

- This **webinar is being recorded** and will be available online.
- The **slides will be posted on the Training Modules webpage** (video will be posted in the coming weeks).
- Please **type your questions in the Q&A box** throughout the webinar.



- If time permits, there will be an open Q&A period at the end of the webinar.

Webinar Participants: NIGMS Program Staff

Joyce Stamm, Program Director
Training & Workforce Development Division at NIGMS
joyce.stamm@nih.gov

Kalynda Gonzales Stokes, Program Director
Training & Workforce Development Division at NIGMS
kalynda.stokes@nih.gov

Webinar Participants: NIGMS Staff

Lee Slice, Scientific Review Officer
Scientific Review Branch at NIGMS
slicelw@mail.nih.gov

Adam Barnhart, Senior Grants Management Specialist
Grants Administration Branch
adam.barnhart@nih.gov

Webinar Agenda

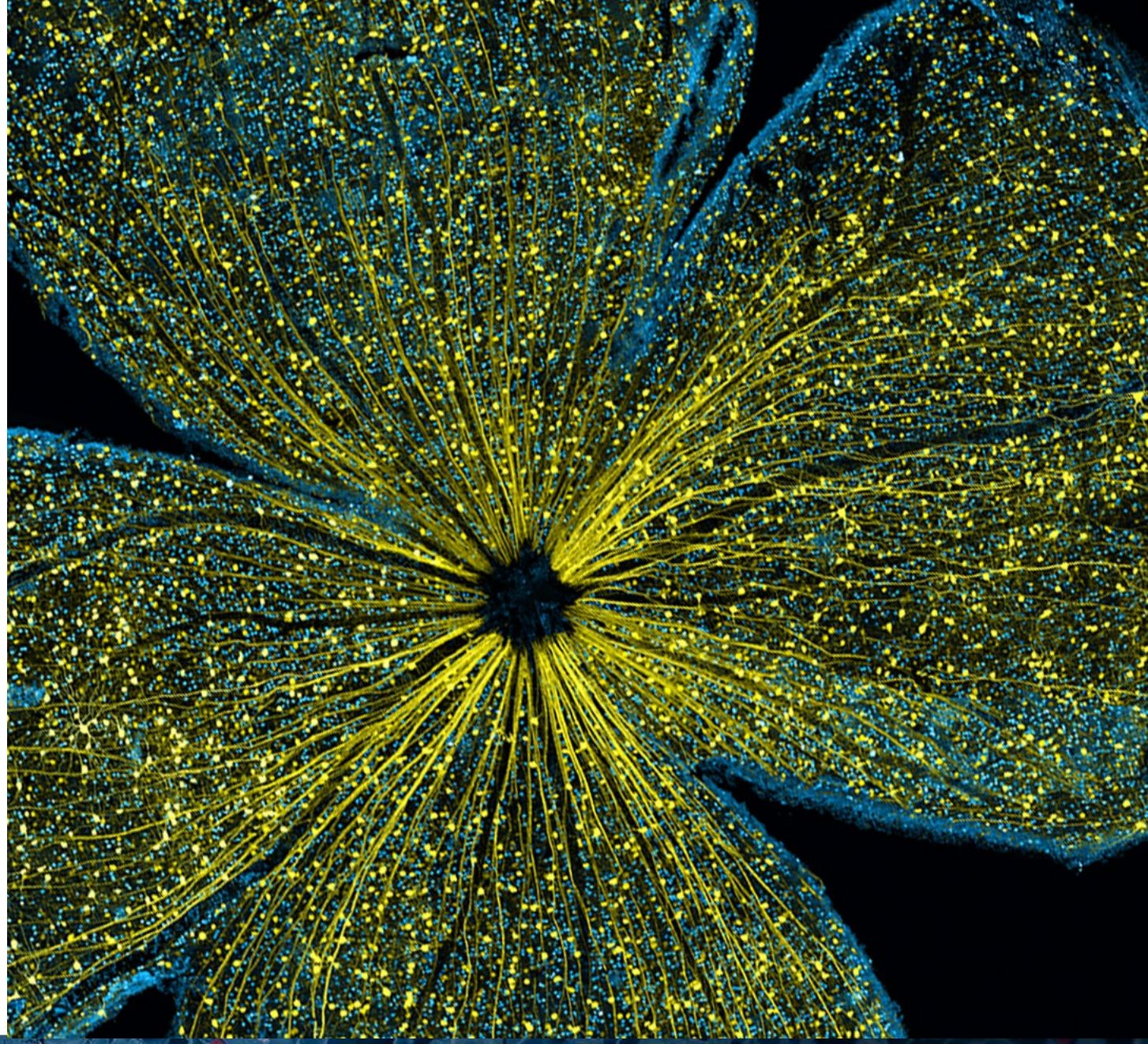
- Training Modules Background, Structure, & Eligibility
- Peer Review
- Budget Overview
- Questions

Disclaimer

This presentation and accompanying slides are for informational purposes only. They serve as an overview of the NIH Training Modules program and are not meant to be comprehensive in coverage of all required components an application.

Applicants are responsible for following the instructions detailed in the Notice of Funding Opportunity (NOFO), any Related Notices (included in the NOFOs Overview Information section), and the **SF424 Application Guide Research (R) Instructions**.

Program Background, Structure, & Eligibility



Modules for Enhancing Biomedical Research Workforce Training PAR-24-040

Purpose: To support the development of training modules (educational resources) designed to be freely available, at no cost to the broader community to advance the training of the biomedical research workforce.

Educational activities with a primary focus on:

1. **Courses for Skills Development**
2. **Curriculum or Methods Development**.

Training Module Development

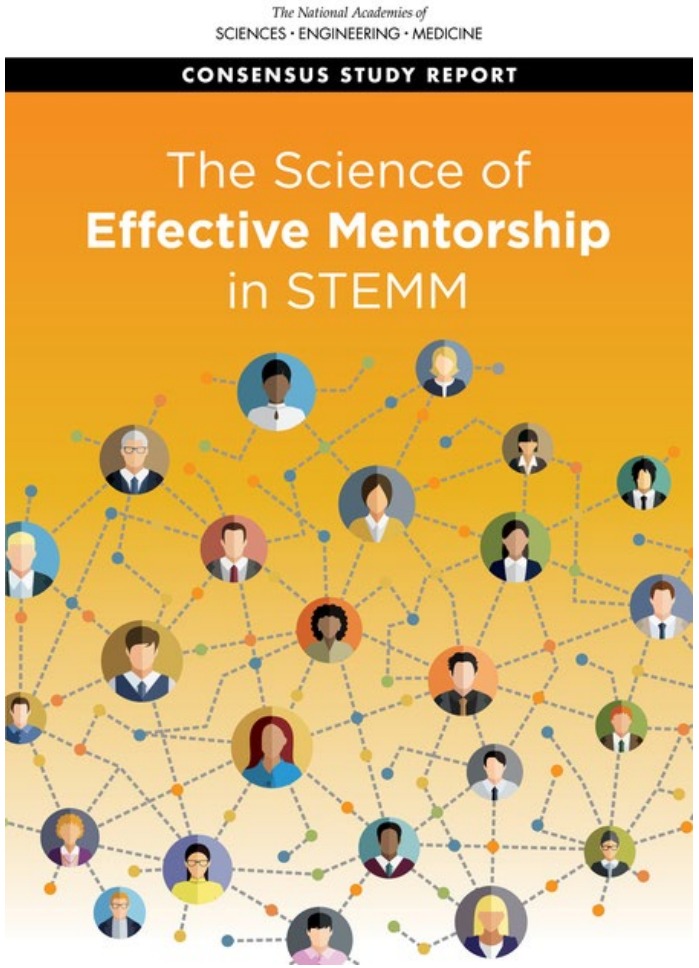
- Should assess **the current training needs** of the intended audience, specifying the skills and knowledge that will be gained by the audience and how the module will enhance the biomedical research workforce.
- Should **fill a gap in the existing educational resources** and ensure the content is **relevant and broadly useful** for audiences that include **biomedical researchers** at one or more professional levels including students, postdoctoral scientists, staff scientists, clinical researchers, research faculty, etc.
  - When piloting the modules, the developers should recruit participants for feedback that are reflective of the intended audience to ensure the effectiveness of the modules.

Topics of Interest

- Applicants must address one of the responsive topics indicated through **Notices of Special Interest (NOSIs)** released annually by NIGMS.
- Current NOSI NOT-GM-24-039 areas of interest:
    1. Improving Mentorship Experiences
    2. Improving Mental Health and Well-Being through Organizational Change
    3. Addressing Equity in the Biomedical Research Enterprise
    4. Promoting Laboratory Safety in Research Environments
    5. Strengthening Rigor, Reproducibility, and Transparency of Biomedical Research Techniques
    6. Enhancing Program Evaluation Capacity
- Because of the complex nature of these topics, expert(s) in the subject areas are encouraged to be included on the investigator team.
- The PD/PI can hold a professional role other than professor or research faculty but should be able to demonstrate the expertise needed for the PD/PI position.

NOSI Topic 1: Improving Mentorship Experiences

- Effective mentorship is critical to the development and retention of scientists and the advancement of research.
- Formal training and ongoing professional development in effective mentoring practices has been shown to improve the knowledge and skills of research mentors across career stages.
- The 2019 NASEM report highlights the need to address **ineffective mentoring experiences** due to a lack of structure and purpose, poor mentor matching and preparation, lack of leadership support, and low engagement and participation.
- Modules should address the barriers and challenges to effective mentorship and how to overcome them.
- **Potential topics:** general mentorship education for departments, divisions, colleges, etc., including how to address negative mentoring or ineffective mentorship methods; mentor education for the needs of a broad range of scholars to avoid ineffective mentoring; mentee education about how to guide their mentoring relationships and careers to mitigate ineffective mentoring.



https://www.nationalacademies.org/our-work/the-science-of-effective-mentoring-in-stemm

NOSI Topic 2: Improving Mental Health and Well-Being through Organizational Change

- Navigating the biomedical research training pathway can be overwhelming and lead to stress, anxiety, and self-doubt.
- Organizations are in a position to establish programs that support the mental and physical well-being of the biomedical research workforce.
- The U.S. Surgeon General's Framework for Workplace Mental Health and Well-Being, intended to spark organizational dialogue and change in the workplace, establishes five essential components to help re-imagine workplaces as engines of well-being.
- Training modules should effectively address **one or more of these five essential components** at different organizational levels, such as departments, divisions, offices, and laboratories and may span multiple career stages, from students to organizational leadership.

NOSI Topic 3: Addressing Equity in the Biomedical Research Enterprise

- A dire need exists to address equity across career stages in the biomedical research enterprise.
- Training modules should focus on addressing disparities in recruitment, retention, and success of trainees and other researchers and to promote access, inclusion, equity, and accessibility in the biomedical research environment.
- Modules should focus on how to create research training environments optimized for productive learning and research - **free from harassment, intimidation, and discrimination** - where all participants feel safe and are treated in a respectful and supportive manner.
- Applications must specify how the module will help the participants address the structures and ways of thinking that are barriers to success.


THE WHITE HOUSE

JANUARY 20, 2021

Executive Order On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government

BRIEFING ROOM › PRESIDENTIAL ACTIONS

https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/

https://www.nih.gov/ending-structural-racism/nih-extramural-applicants-awardees

NOSI Topic 4: Promoting Laboratory Safety in Research Environments

- Training modules should help catalyze a strong culture of responsibility and obligation to maintain high standards for physical, chemical, and biological safety in research training environments.
- Specifically, environments in which physical, chemical, and biological safety is prioritized, and the core values and behaviors of leadership and the research and training communities emphasize safety over competing goals.
- Must specify the skills and knowledge that will be gained by the participants and how it will help the participants address physical, chemical, and biological safety in the research environment.

NOSI Topic 5: Strengthening Rigor, Reproducibility, and Transparency of Biomedical Research Techniques

- Principles of rigorous biomedical research are cross-cutting concepts, processes, and practices that promote rigorous, transparent, and robust scientific experiments.
- NIH defines scientific rigor as “the strict application of the scientific method to ensure robust and unbiased experimental design, methodology, analysis, interpretation and reporting of results".
- Training modules should develop content that promotes rigorous, reproducible, and transparent execution of **biomedical research techniques** relevant to the NIGMS mission.
- Approaches to proper controls, sample size, statistical analyses, transparent reporting, among others, associated with each method should be discussed.

Principles and Guidelines for Publishing Preclinical Research

Explore principles to enhance rigor and further support research that is reproducible, robust, and transparent, developed by journal editors at a workshop representing over 30 basic/preclinical science journals.

Guidance: Rigor and Reproducibility in Grant Applications

Learn how to address rigor and reproducibility in your grant application and discover what reviewers are looking for as they evaluate the application for scientific merit.

Resources for Preparing Your Application

Resources for Preparing Your Application Learn how to prepare a rigorous application with select excerpts of rigor from awarded applications, authentication plan examples, and resources like the experimental design assistant (EDA), guidance on sample size calculation, and more.

Training and Other Resources for Rigor and Reproducibility

Resources and training on many aspects of rigor and reproducibility, including sex as a biological variable, research methods, reviewer guidance and more.

NIH Resources: https://grants.nih.gov/policy-and-compliance/policy-topics/reproducibility

NOSI Topic 6: Enhancing Program Evaluation Capacity

- Applications should focus on the development of evaluation capacity at organizations with biomedical research training programs.
- Training modules should inform program directors and administrators about effective and practical approaches to evaluate biomedical research training programs.
- Expected to be developed with input from a range of experts (for example, social scientists, statisticians, education professionals).

Training Module Development & Accessibility

- Modules will employ different formats and approaches but should be **timely, informative, engaging, and easily accessible** to the research training communities.
- **Platforms:** A shareable format that is easily available to the public at **no cost**. Examples include, but are not limited to, interactive online modules; videos or case studies with supporting discussion materials or problem sets; online open courses; or computer-video simulations.
- **Length of awards:** should be developed, piloted, and disseminated within the **first two years** of the award. Depending on the complexity of the project, budgets may be **awarded for up to three years** to allow for module evaluation, modification and dissemination in year three.
- **Accessibility:** expected to be accessible to scientists from **all** backgrounds and abilities. Funded activities are encouraged to **explore innovative methods** to enhance the accessibility of materials so that all members of the biomedical research workforce may benefit from the training modules.

Program Considerations

- This funding opportunity is **not** designed to support a training program with funded trainees or participants.
- The purpose is to create educational modules to be used in biomedical research training environments.
- Training modules may **complement** ongoing research training and education occurring at the applicant institution, but the proposed educational experiences **must be distinct** from those training and education programs currently receiving Federal support.
  - Research education programs, including the R25, may augment institutional research training programs (e.g., T32, T90) but cannot be used to replace or circumvent NRSA programs.

Program Director/Principal Investigator Team

- Provide evidence that the Program Director/Principal Investigator (PD/PI) or PD/PI team has the **appropriate expertise and ability** to organize, administer, monitor, disseminate, and evaluate the training module.
- Provide evidence that the PD/PI team **has sufficient time** to devote to the successful implementation of the plan.
- Members of the PD/PI team may hold a professional role **other than** professor or research faculty.
- For **programs proposing multiple PDs/PIs**, describe the complementary expertise of the team, their roles and leadership approach, and governance appropriate for the planned proposal.

Module Instructional Staff

- If the training modules development process requires the **recruitment of prospective developers or presenters of the educational content** (Module Instructional Staff), describe plans to recruit individuals with the appropriate expertise to develop and present the educational content.
- NIH encourages participation of **appropriate role models** for the intended audience, and the pool of prospective Module Instructional Staff should include individuals from diverse backgrounds, for example, individuals from underrepresented racial and ethnic groups, persons with disabilities, and women (see NIH's Interest in Diversity).
- Describe the process to ensure that the participating Module Instructional Staff will have skills, knowledge, and experience to **effectively educate** the intended audience.
  - This may include recruiting a pool of individuals who have a strong record of working effectively with scientists from a wide variety of backgrounds and actively promoting inclusive, safe, equitable, and accessible scientific biomedical research environments.

Module Development Participants

- Training module development should include **testing the content for effectiveness and relevancy** with representatives of the intended audience within the biomedical research workforce.
- Applications should focus **on one or more** professional levels including students, postdoctoral scientists, staff scientists, clinical researchers, research faculty, etc.
- Participants should be from **diverse backgrounds**, for example, individuals from underrepresented groups (see NIH's Interest in Diversity).
- Applicants should describe **developing the module participant pool** in the **"Recruitment Plan to Enhance Diversity"** section.
  - Describe the module development participant **selection process and criteria** (such as education and career level) to ensure a representative sample of participants exists.
  - All selection processes must be consistent with applicable laws.
  - Do not duplicate information provided in the *Proposed Training Module Plan* or the *Recruitment Plan to Enhance Diversity*.

Recruitment Plan to Enhance Diversity

- Applications **must provide** a recruitment plan to enhance diversity.
- Include **outreach strategies and activities** designed to recruit prospective Module Development Participants from diverse backgrounds, for example, individuals from underrepresented racial and ethnic groups, persons with disabilities, and women (see the Notice of NIH's Interest in Diversity.
- Describe the specific efforts to be undertaken by the training module development team.

Evaluation Plan

- Evaluations must be conducted to monitor the success of achieving the goals outlined in the application.
- Application may include evaluation instruments, blank survey and questionnaire forms or interview questions **in the appendix** as instructed in the SF424 (R&R) Application Guide.
- A clear evaluation plan should include:
  - A description of the timeline of the training module deployment.
  - Verifiable outcomes and how the module developers will obtain feedback about the effectiveness of the training.
  - How the implementation milestones, including content development, piloting and refinement, dissemination, evaluation, and maintenance will be measured, monitored, and revised as needed.
  - The methods for piloting and assessing the effectiveness of the training module and how the modules will be refined before public release. Explain how the development team will be responsive to participant input and incorporate changes into the module.
  - How the educational goals of the publicly available training module will be measured. Include the methods and measures to determine whether the training module is effective in meeting the educational goals.
  - Plans are encouraged to utilize measures that go beyond self-reported gains and include verifiable outcomes. If possible, a comparator group should be included in the evaluation.

Dissemination & Sustainability Plan

- Must reach a broad, diverse group of biomedical researchers at **no cost**.
- A specific dissemination plan must be provided and should describe the following:
  - Activities to disseminate nationally, the need for the content, an overview of the modules, progress in developing the modules (such as pilot studies and evaluation results), and tutorials for effective use of the modules.
  - A stated commitment to submit training modules on the NIGMS training module clearinghouse website.
  - Plans for sustaining the content beyond the granting period (do not duplicate information provided in the *Letter of Institutional Commitment*).
- Examples of dissemination include but are not limited to the following:
  - **Scientific or Educational Conferences:** Through participation in a conference(s), grantees are encouraged to present an overview of the modules, progress in developing the modules such as pilot study and evaluation results, and tutorials for effective uses of the modules.
  - **NIGMS portal:** Once the modules have been developed, tested, and made available, links to these educational resources will be posted on the NIGMS training module clearinghouse website.

Letter of Institutional Commitment

- A **Letter of Institutional Commitment** must be attached as part of the Letters of Support.
- Appropriate institutional commitment should include the provision of adequate staff, facilities, and educational resources needed for the development, dissemination and sustainability of the training module.
- Should not duplicate information in the *Facilities & Other Resources* section.
- Should include a **sustainability statement** to describe how the institution will maintain the developed, publicly-available training module as described in the application and ensure access to the content through the NIGMS training module clearinghouse web site after the funding ends.
- **Applications lacking a letter of institutional commitment will not be reviewed.**

Appendix

- Only limited Appendix materials are allowed.
- Follow the instructions for the Appendix as described in the SF424 (R&R) Application Guide.
- These items are allowable:
  - Evaluation Instruments
  - Blank Survey and Questionnaire Forms
  - Interview Questions

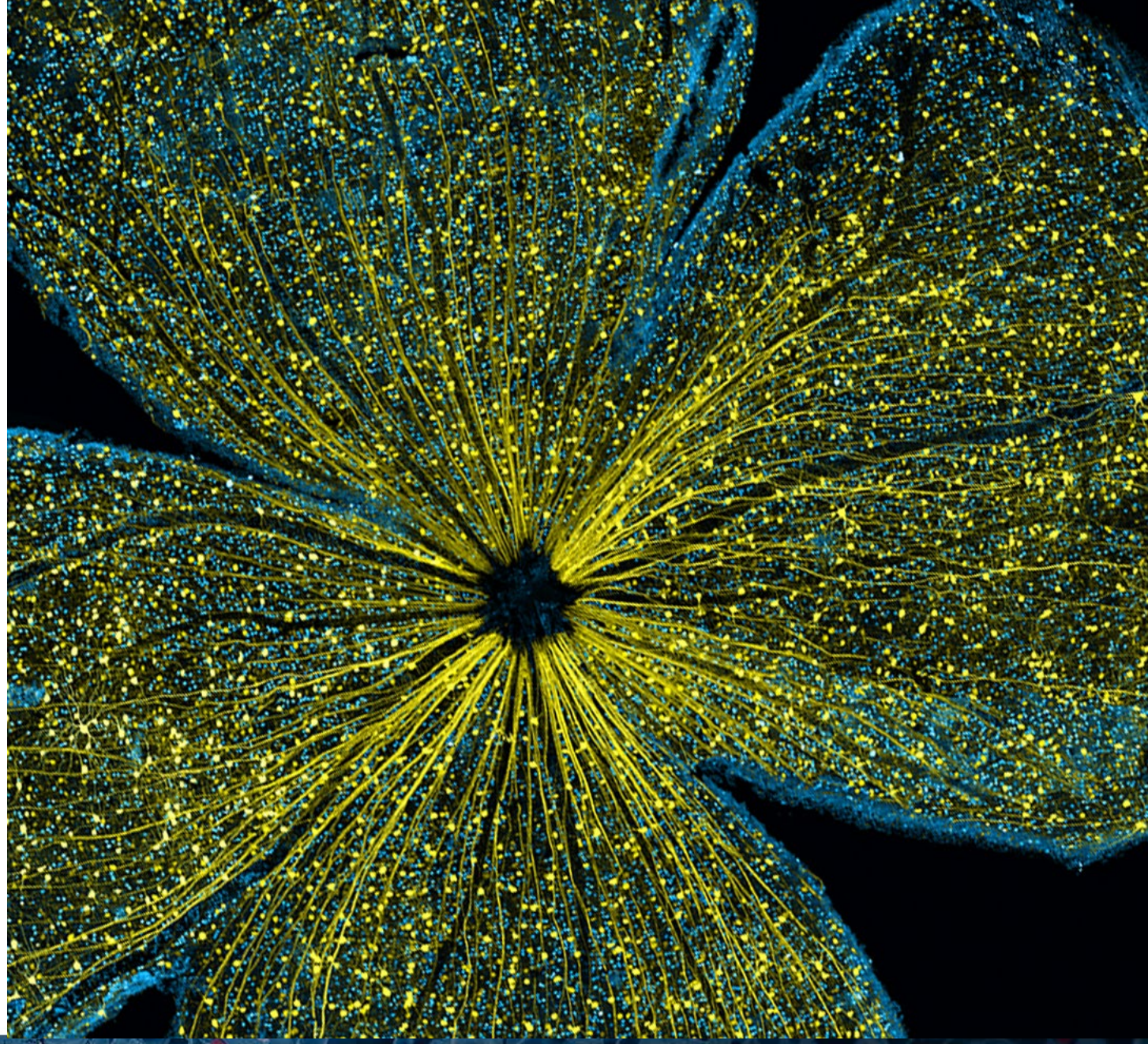
Components Not Required for the Training Modules Application

- Resource Sharing Plan
- Training in the Responsible Conduct of Research
- Training in Methods for Enhancing Reproducibility

Application due date:
January 28, 2025

Applicant organizations may submit more than one application, provided that each application is scientifically distinct.

Peer Review



Review of Applications

- Applications will be reviewed by a Special Emphasis Panel.
- Receipt letter from scientific review officer (SRO) will provide information about meeting dates, instructions for providing updates, link for committee roster, and people to contact during the review and post-review process.
- Scores and summary statements accessed through PI's eRA Commons account.

Review of Applications (cont'd.)

- Please read the review criteria described in **Section V** of the NOFO while preparing your application. Make sure all the required information is included.

- Review panel will assess your application against the review criteria.

Criteria

- Only the review criteria described below will be considered in the review process. Applications submitted to the NIH in support of the NIH mission are evaluated for scientific and technical merit through the NIH peer review system.
- For this announcement, note the following: The goal of this program is to support the development of training modules designed to be accessible and freely available, at no cost to the broader community. The modules should address the current gaps in the educational training of the biomedical research workforce.

Overall Impact

- Reviewers will provide an overall impact score to reflect their assessment of the likelihood for the project to strongly advance research education by fulfilling the goal of this research education program, in consideration of the following review criteria and additional review criteria, as applicable for the project proposed.

Scored Review Criteria
(Section V of NOFO)

Significance

- Evaluate the degree to which the proposed training module focuses on a current gap in training aimed at a broad participant audience in the biomedical research workforce.
- Assess if the proposed module addresses barriers in learning and will advance education and training of the biomedical research workforce.
- Consider if the training module dissemination will be accessible, useful, and effective for the intended audience.

Scored Review Criteria, cont'd

PD/PI Team and Module Instructional Staff

- Assess if the PD/PI team has the appropriate expertise for the proposed activities and will be able to organize, administer, monitor, disseminate, and evaluate the proposed plan.
- Consider if an appropriate level of effort will be devoted by the program leadership to ensure the program's intended goal is accomplished.
- For collaborative or multi-PD/PI projects, discuss whether the investigators have complementary expertise and if their leadership approach, governance, and organizational structure are appropriate for the project.
- Consider whether the plans are likely to recruit a diverse pool of prospective Module Instructional Staff who have the skills, knowledge, and experience to serve as effective role models and successfully educate the intended audience.

Scored Review Criteria, (2)

Innovation

- Evaluate the degree to which the proposed training module employs evidence-informed education or training methods that promote effective, supportive, inclusive, and accessible learning environments to achieve the goals.
- Assess if the skills and knowledge of the audience will be improved in a meaningful and effective way, leading to the advancement of the biomedical research workforce.
- Discuss whether the proposed activities are likely to be broadly utilized by the biomedical research workforce.

Scored Review Criteria, (3)

Approach

- Evaluate whether the proposed training module has appropriate, specific, and measurable goals.
- Discuss whether the audience, educational content, and the intended outcomes align.
- Discuss whether the planned educational content is of the appropriate scope and depth for the intended audience.
- Assess if the module is based on sound educational concepts and principles and likely to achieve the goals.
- Evaluate if the selection process and criteria (such as education and career level) for module development participants will lead to the appropriate representation of the intended audience. Discuss whether the feedback is likely to be incorporated into improvements to the training module.
- Discuss if the proposed module and digital material will exist in a shareable format that will be accessible and available to the broader community at no cost.
- Consider if the timeline is feasible for public release and the milestones for progress are reasonable.
- Assess if the evaluation plan is logical, rigorous, and likely to provide useful information on the effectiveness of the module content and module deployment.
- Evaluate if the dissemination and sustainability plans seem reasonable and likely to provide useful and accessible information to the broader biomedical research community beyond the granting period.

Scored Review Criteria, (4)

Environment

- Assess if the environment and institutional commitment will contribute to the stated goals.
- Evaluate the adequacy of the institutional commitment and support for staff and resources as well as the plans for sustainability of the training module content beyond the granting period.

Additional Review Criteria

As applicable for the project proposed, reviewers will evaluate the following additional items while determining scientific and technical merit, and in providing an overall impact score, but will not give separate scores for these items.

Protections for Human Subjects

- Generally not applicable.

Inclusion of Women, Minorities, and Individuals Across the Lifespan

- Generally not applicable.

Vertebrate Animals

- Generally not applicable.

Biohazards

- Generally not applicable.

Additional Review Considerations

As applicable for the project proposed, reviewers will consider each of the following items, but will not give scores for these items, and should not consider them in providing an overall impact score.

Recruitment Plan to Enhance Diversity

- Plans will be rated as acceptable or unacceptable, and the summary statement will provide the consensus of the review committee.

Select Agent Research

- Generally not applicable.

Budget and Period of Support

Advice for Applying

- **Submit early**—at least two days before the deadline to allow time for review.
- Always review your application and check for completeness.
- Correct any errors and address all warnings:
  - Note that not all failures to comply are caught by the automated notification.
  - We cannot accept any missing items after the receipt deadline**.**

🚫 **Applications will be *withdrawn* if anything is missing *or* unallowed materials are included!**

(NIH grants application guide)

Application Preparation - Tips

- Don’t expect reviewers to “read between the lines” to figure out what you are proposing. Directly and clearly state the most important information.
- Include clear, measurable and attainable goals for the training module.
- Make sure biosketches are up-to-date and relevant for training module (personal statement).
- Data in tables and text should be consistent throughout the applications.

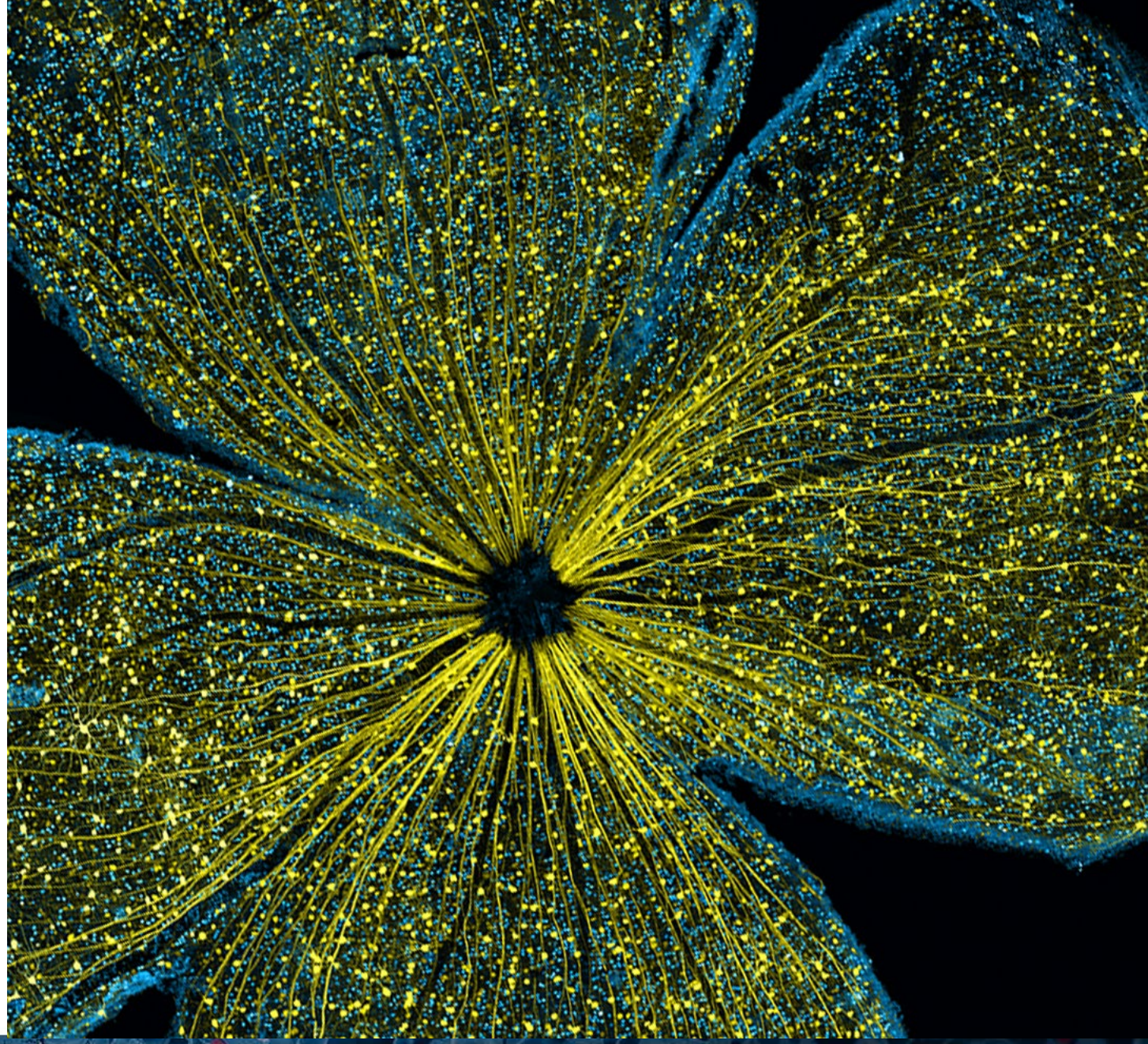
Review Process: Usual Timeline

From submission date:

Timeframe	Activity
1 - 2 months	Referral
2 - 6 months	Review Panel
6 - 7 months	Summary Statement Available
7 - 8 months	Advisory Council
8 - 9 months	Funding Decisions
9 - 10 months	Award Start Date

Reach out your SRO with review questions (during review phase)
Post review- reach out to your PO for next steps

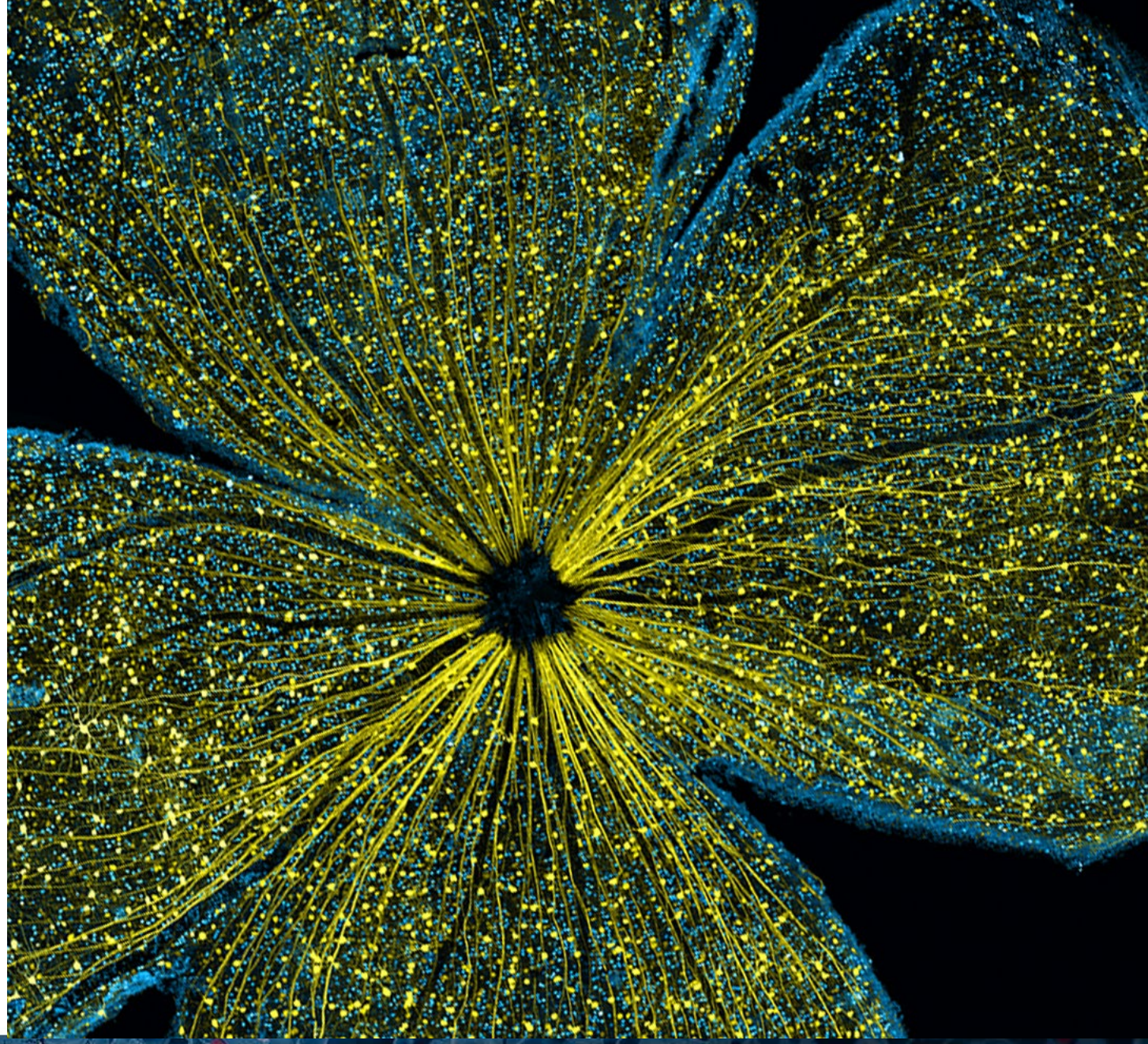
Budget Overview



Budget Overview (cont'd.)

- Direct costs < $250,000 for entire award period (3 years)
- No inflation escalation
- Salaries/wages for key personnel allowed
  - If mentoring activities are considered part of academic duties, costs associated with mentoring not allowed
- Participant costs allowed
  - Include in Participant section of SF424 budget pages
- Other Direct costs may be allowable
  - Consultants, equipment, supplies, and/or travel must be well-justified
- Indirect costs capped at 8% modified total direct costs

Final Thoughts



Important Reminders

- A NOSI topic **must be** the focus of the application
- This is **not** a training grant or should **not** compete with training grant activities
- Modules are developed for biomedical researchers, not healthcare workers **who are not** performing research (please see other resources via AHRQ and HRSA)
- **No resubmissions or renewals allowed** – must submit a new application each time
- Foreign components are **not allowed**

Resources

- Please see our webpage for more information: https://www.nigms.nih.gov/training/Pages/Training-Modules-for-Enhancing-Biomedical-Research-Workforce-Training-R25.aspx
- **Program Directors:**
  - Kalynda Gonzales Stokes – kalynda.stokes@nih.gov
  - Joyce Stamm – joyce.stamm@nih.gov
- **Scientific Review:**
  - Lee Slice - slicelw@mail.nih.gov
- **Grants & Budget Management:**
  - Adam Barnhart - adam.barnhart@nih.gov

Connect, Follow, and Subscribe!

- NIGMS Blogs
  - *Feedback Loop:*
    - loop.nigms.nih.gov (blog)
    - bit.ly/nigmstrainee (trainee list)
  - *Biomedical Beat*: biobeat.nigms.nih.gov
- NIGMS Media Coverage: go.nih.gov/mediacoverage
- Find NIGMS on Social Media

Questions?

Thank you for joining!
Best wishes on your application!