NIH
Advancing Research Careers (ARC) Program

Applicant Webinar

October 23, 2023

National Institute of General Medical Sciences

Before We Begin

- This webinar is being recorded and will be available online. The slides have been posted on the [ARC website](#) (video will be posted in the coming weeks).

- Type your questions in the chat box.

- There will be Q&A periods during the webinar.

Webinar Participants

NIH Staff

- Laurie Stepanek, Program Director

- Kenneth Gibbs, Chief of Undergraduate and Predoctoral Cross-Disciplinary Training Branch

- Latarsha Carithers, Chief of Training, Mentored Research, and Diversity Section of the NIGMS Scientific Review Branch

- Justin Rosenzweig, Grants Management Team Leader
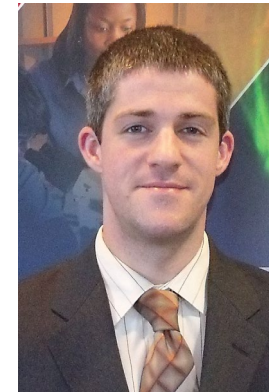
Webinar Agenda

- **Background & Overall Program Description**

- **ARC Program Components** (Description, Review, Grants Management, Questions)
  - Predoctoral to Postdoctoral Transition Award to Promote Diversity (F99/K00)
  - Institutionally-Focused Research Education Award (UE5)

- **Final Questions**

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Disclaimer

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

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

Department of Health and Human Services

Part 1. Overview Information

Participating Organization(s)	National Institutes of Health (NIH)
Components of Participating Organizations	National Institute of General Medical Sciences (NIGMS) National Eye Institute (NEI) National Institute of Biomedical Imaging and Bioengineering (NIBIB) National Library of Medicine (NLM) National Center for Complementary and Integrative Health (NCCIH) Sexual and Gender Minority Research Office (SGMRO)
Funding Opportunity Title	Advancing Research Careers (ARC) Predoctoral to Postdoctoral Transition Award to Promote Diversity (F99/K00 - Clinical Trial Not Allowed)
Activity Code	F99/K00 Pre-doc to Post-doc Transition Award/Post-doctoral Transition Award
Announcement Type	New
Related Notices	• October 6, 2023- Notice of Informational Webinar on the NIH Advancing Research Careers (ARC) Program Notices of Funding Opportunity (F99/K00 and UE5). See Notice NOT-GM-24-002. • August 31, 2022- Implementation Changes for Genomic Data Sharing Plans Included with Applications Due on or after January 25, 2023. See Notice NOT-OD-22-198. • August 5, 2022- Implementation Details for the NIH Data Management and Sharing Policy. See Notice NOT-OD-22-189.

Informational notice – this webinar

Implementation notices – how data management and genomic data management sharing plans should be included in the application

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NIH ARC Program Background

- The ARC program is part of NIH's efforts to **enhance diversity** within the biomedical research workforce.

- ARC is designed as a structured program to enhance participation of trainees from diverse backgrounds, for example individuals from underrepresented groups (see Notice of NIH's Interest in Diversity), as they **transition** from predoctoral research training to postdoctoral research and career development.

Advancing Research Careers (ARC)
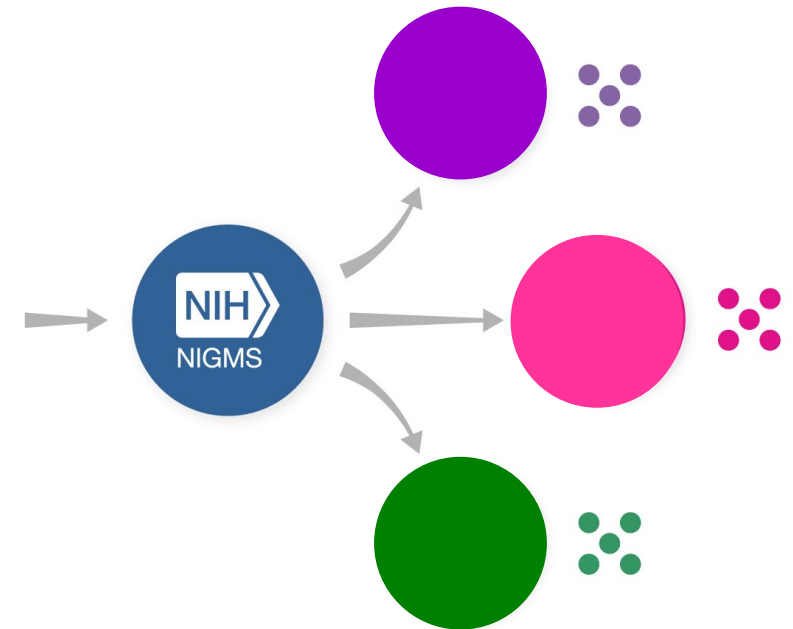
NIH ARC Program Structure

Awards to organizations (UE5) to provide mentoring and career development

ARC F99/K00 applicants compete and are selected by participating NIH ICs

ARC F99/K00 scholars participate in cohorts managed by UE5 recipients

First UE5 application due date: January 29, 2024 (annual)

First F99/K00 application due date: June 13, 2024 (3x per year)

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ARC UE5 – Common Elements

- **Cohort Formation**
- **Postdoctoral Transition**
- **Skills Development**
  - For example, communication, grant writing, navigating career transitions
- **Mentoring and Networking**
  - Identifying additional mentors
  - Engaging primary sponsors/mentors to promote success
- **Career Development Activities**

ARC Predoctoral to Postdoctoral Transition Award to Promote Diversity (F99/K00)

PAR-23-222 - Independent Clinical Trial **Not Allowed**

*Applicants should carefully note which NIH Institutes, Centers and Offices (ICOs) participate in each announcement; this list may change over time. ICOs that do not participate in this announcement will not consider applications for funding. Consultation with NIH staff before applying is **strongly encouraged**.*

Participating ICOs (10/2023): NIGMS; NEI; NIBIB; NLM; NCCIH; SGMRO

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ARC F99/K00 Goal

- To foster the development of individuals from diverse backgrounds who have demonstrated an interest in and potential for pursuing impactful careers in the biomedical research workforce **that typically require postdoctoral training** (e.g., academic research and teaching at a range of institution types, industry or government research).

  - F99 phase (predoc): 1 - 2 years of support to complete predoctoral research training and identify a postdoctoral mentor
  - K00 phase (postdoc): Up to 3 years of support for postdoctoral mentored research and career development

- For the purpose of this NOFO, **NIH encourages institutions to recruit prospective candidates from groups identified as underrepresented in the biomedical sciences** (for examples, see the Notice of NIH's Interest in Diversity).

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ARC F99/K00 Considerations

- Intended for individuals who **require at least 12 months of predoctoral research training** (F99 phase) before transitioning to the K00 award phase. *An individual who cannot provide a compelling rationale for at least one year of additional mentored predoctoral research training at the time of award is not a strong candidate for this award.*

- The candidate's **research interests** should be related to the mission area(s) of one or more of the participating NIH ICOs.

- ARC F99 fellows/K00 scholars will be expected to participate in additional **mentoring, networking, and professional development activities** coordinated by the institutionally-focused research education grant awardees (ARC UE5).

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ARC F99/K00 – Transition to K00 phase

- A K00 award will be made only to a candidate who has successfully completed the F99-supported training, secured an appropriate postdoctoral position, and provided a strong research and career development plan that will occur in a supportive research environment.

- A separate application for the K00 phase will be submitted to the awarding IC no later than 3 months prior to the proposed activation date of the K00 award. This application should be prepared in collaboration with the K00 mentor(s) and demonstrate how the K00 will further facilitate achievement of a career in the biomedical research workforce (see ARC F99/K00 NOFO Section VI.2).

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ARC F99/K00 – <u>Eligibility</u>

- Must have a baccalaureate degree and currently enrolled in a mentored, biomedical PhD or equivalent research degree program. Students matriculated in clinical, health-professional single or dual degree programs are not eligible.

- Must be at the dissertation research stage of training and expected to need 1-2 years to complete the PhD at the time of award.

- By the time of the award, **must be a US citizen, non-citizen National or permanent resident**.

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ARC F99/K00 – <u>Required</u> Attachments ⭐

1. Diversity statement (1-page maximum). The application must include a diversity statement from the candidate applying for the F99/K00 award. Should include:

- A description of the individual's commitment to diversity in the biomedical sciences.

- Any **past or present leadership**, mentoring and outreach activities to enhance diversity – especially involving groups underrepresented in the biomedical research enterprise (e.g., certain racial/ethnic groups, persons with disabilities, students from disadvantaged backgrounds, women, and other groups as described in the NIH [Notice of Interest in Diversity](#)).

- Describe **planned activities** during the award to develop or enhance skills in working effectively with scientists from a wide variety of backgrounds and to promote inclusive and equitable scientific biomedical research environments.

2. Description of Candidate's Contribution to Program Goals

- The sponsoring institution must provide a document on institutional letterhead that explains how the candidate's participation will further the goals of the program to promote [diversity](#) in health-related research.

- Must be dated and **signed by an institutional official**.

ARC F99/K00 – Biographical Sketch

- In the Candidate "Personal Statement" section:

  - Address how completion of postdoctoral training will help you achieve your career goals.

  - You may also:

    - Describe experiences that contributed to your professional development and form the foundation for the training proposed.
    - Include activities that demonstrate your passion and commitment to a scientific career.
    - Provide an example of a challenge you faced in research and overcame using creativity and persistence.

ARC F99/K00 – Candidate Section

- Training Goals and Objectives

  - Justify the need for further research training in **both phases (F99 and K00)** and discuss how the proposed training will facilitate your transition to the next career stage.

  - Describe how activities provided by the ARC UE5 program will be integrated into your training plan.

    - *Note: For applications in June and October 2024 consult the ARC UE5 NOFO for potential skills development and mentoring activities to include.*

  - Include a **plan for identifying postdoctoral mentor(s)** and attributes you will look for in potential mentor(s) and environment (you do not need to identify a postdoc mentor at the time of application).

- Activities Planned Under this Award

  - Plan and timeline should span **both the F99 and K00 phases**

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ARC F99/K00 – Research Training Plan

- All candidates must use these 2 Specific Aims:

  - **Specific Aim 1: The Dissertation Research Project** - Provide a concise description of the overall dissertation research project, what has been accomplished to date (preliminary data may be included), and the research to be completed in the F99 phase.
  - **Specific Aim 2: The Postdoctoral Research Direction** - Identify a broad research direction the candidate intends to pursue for the K00 phase.

- Research Strategy – follow instructions in SF424, plus:

  - Specific Aim 1: Describe progress on your dissertation research project and how the project is related to your next steps for the K00 phase.

  - Specific Aim 2: Describe the background and significance of the proposed K00 research direction, and general descriptions of approaches/methods to be used.

ARC F99/K00 – Sponsor(s)

- The **F99 sponsor** (and each co-sponsor, as applicable) must contribute to the Sponsor and Co-Sponsor Statement. *Candidates are encouraged to identify more than one sponsor, i.e., a sponsor team, if this is deemed advantageous for their training program.*

- DO NOT follow the SF424 instructions; follow the instructions in the NOFO.

  - Previous Trainees section should focus on predoctoral trainees and how training and mentoring practices promote the development of trainees from all backgrounds.

  - The Training Plan should be individualized for the candidate's strengths, areas for development, K00 research direction and career goals.

  - Describe willingness to participate in events organized by the ARC UE5 program to enhance mentoring relationships and promote career development of the fellow.

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ARC F99/K00 – Institutional Environment

- Typically provided by the graduate program director or department chair

- Describe any institutional career development resources and activities that will be available to contribute to the candidate's career development

- Detail the institutional commitment to promoting the following:
  - A culture in which the highest standards of safety, scientific rigor, reproducibility, and responsible conduct of research are advanced; and
  - Research training environments that value diversity, equity, and inclusion, and accessibility at all levels (trainees, staff, leadership).

- Confirm that the candidate has 1-2 years from time of award before completion of their Ph.D. (include month and year of anticipated graduation).

ARC F99/K00 - Review

- REMINDER: be sure to comply with all NOFO instructions
- Review groups managed by participating ICs
- Scored Review Criteria (each item gets a score)
  - Fellowship Candidate
  - Sponsors, Collaborators, and Consultants
  - Research Training Plan
  - Training Potential
  - Institutional Environment & Commitment to Training
- Additional Review Criteria (can impact final score)
  - Protections for Human Subjects, Inclusions, Vertebrate Animals, Biohazards
- Additional Review Considerations (not part of final score)
  - Resource Sharing Plans, Training in RCR, Select Agents, Authentications, Budget

ARC F99/K00 – Application Prep Tips

- **Fellowship Candidate**
  - Tell your story – how you're prepared for and will benefit from the award in the context of your career goals
  - Compelling commitment and future plans to promote diversity in biomedical sciences

- **Sponsors, Collaborators and Consultants**
  - F99 sponsor: able to provide appropriate scientific guidance and resources to the candidate, detailed and tailored plan for candidate's career development, willingness to participate in UE5 activities
  - Plan for identifying K00 mentors

ARC F99/K00 – Application Prep Tips

- **Research Training Plan**
  - Addressing important biomedical problem(s) in F99 and K00 phases
  - F99:
    - Feasible research plan with clear hypotheses, expected results, and alternative approaches
    - Statistical analysis (e.g., sample size, power analysis) and attention to relevant biological variables
    - Preparation for K00 phase
  - K00: Well thought through research direction appropriate for candidate's career goals
  - Easily understood by scientists in and outside of your specific area of research

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ARC F99/K00 – Application Prep Tips

- **Training Potential**
  - Providing candidate the experiences to obtain skills for an impactful career in biomedical research workforce.
  - F99 phase laying foundation for K00 phase
  - Integration of the ARC UE5 into career development plans

- **Institutional Environment**
  - How the institutional resources and commitment will foster candidate success

The entire application is reviewed — a rigorous research training proposal is necessary but not sufficient

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ARC F99/K00 – Award Information

	F99 Phase	K00 Phase
Stipends/Salary	NRSA level for predoc	NRSA level-four postdoc stipend
Tuition and Fees	NRSA level for predoc	N/A
Institutional Allowance/Other Program-Related Expenses	NRSA level for fellowship predoc	$5,000/year for research development costs of award recipient
Indirect Costs	N/A	8% of modified total direct costs

**See the NOFO [Other Award Budget Information](#)**

See [Research Training Policies and Notices Page](#) for Current NRSA levels

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ARC F99/K00 – Timeline

	Cycle I	Cycle II	Cycle III
Application Due Date (**non-AIDS**)	February	June	October
Application Due Date (**AIDS**)	May	September	January
Scientific Merit Review	July	November	March
Advisory Council	October	January	May
Earliest Start Date	December	April	July

First application due date: June 13, 2024

ARC F99/K00 – Questions?

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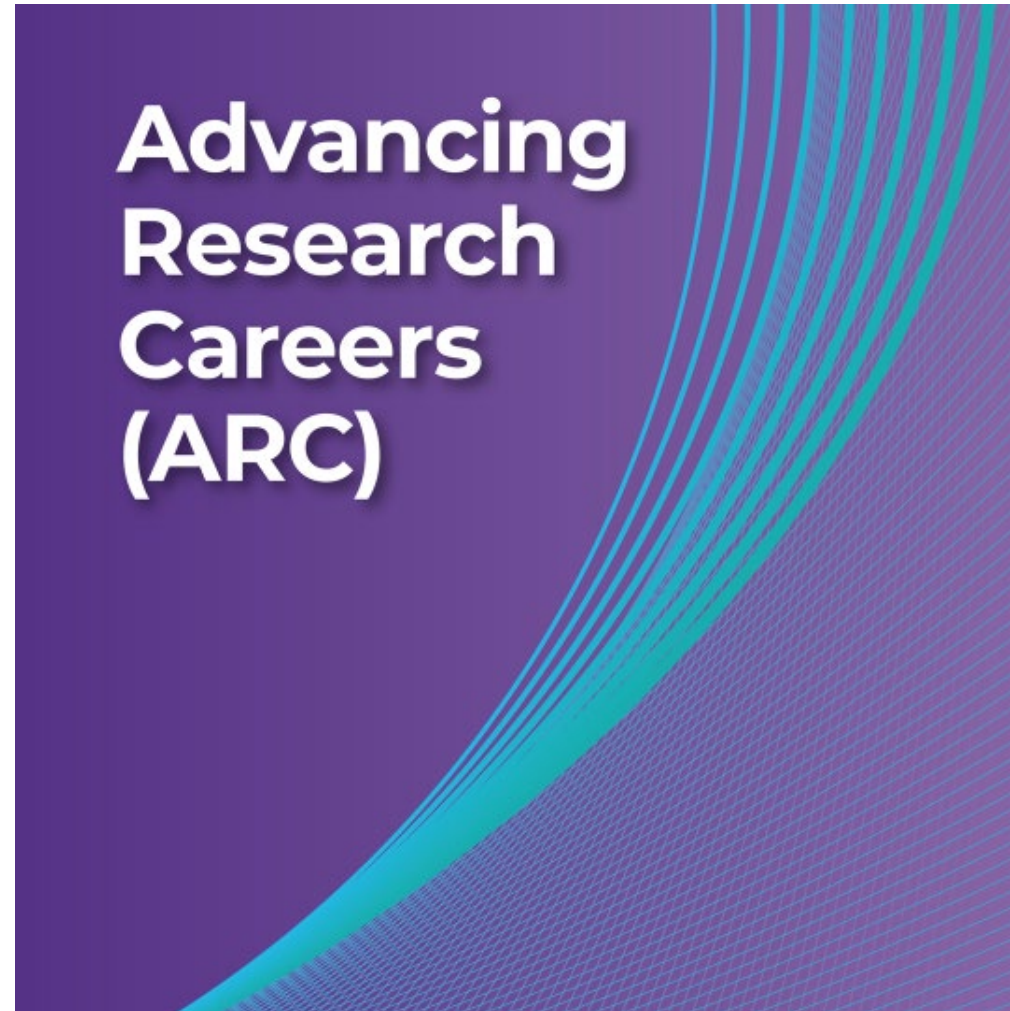
Extramural NIH Training Opportunities for Graduate Students

- [NIGMS Division of Training Workforce Development and Diversity](#)
- [Research Supplements to Promote Diversity](#)
- NIH [F99/K00](#) Opportunities
- NIH [Extramural Research Training](#) Website

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ARC Institutionally-Focused Research Education Award to Promote Diversity
(UE5 - Clinical Trial Not Allowed)

PAR-23-221

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ARC UE5 - Goal

- To provide ARC F99 fellows/K00 scholars with **professional skills** and the appropriate **mentoring and networks** to allow them to **transition into and succeed in postdoctoral research and career development opportunities**, positioning them to advance in impactful careers in the biomedical research workforce that typically require postdoctoral training (e.g., academic research and teaching at a range of institution types, industry or government research).

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ARC UE5 - Approach

- Provide ARC scholars opportunities to engage in **career development activities** that will foster their progression to and success in impactful biomedical careers.

- Develop **supportive cohorts** that span F99 and K00 phases.

- Assist scholars with **identifying and obtaining postdoctoral positions.**

- Enhance the **scientific and professional networks** of ARC scholars.

- Identify and connect scholars with **additional mentors** who can facilitate appropriate career advancement and skills development.

- Provide **skills development** for scholars (e.g., grant writing, communication).

- Engage **primary research sponsors/mentors** of ARC scholars to enhance mentoring relationships and promote scholar career development.

- Track and publicize **outcomes** (e.g., publicly available websites).

ARC UE5 - Goal

- ***Courses for Skills Development:*** Activities focused on skills related to the career advancement of cohorts of ARC F99 fellows/K00 scholars:
  - Communication (oral and written – such as grant or other scientific writing)
  - Data management and visualization
  - Leadership
  - People and project management
  - Career advancement strategies
  - Managing career challenges
  - Wellness, resilience, life-work balance

ARC UE5 - Goal

- ***Mentoring Activities***
  - One-on-one and group mentoring for professional and career development.
  - Activities to enhance the mentoring networks of ARC scholars and prepare participants with a working knowledge of the opportunities and challenges associated with careers in the biomedical research workforce and how to identify and pursue desired career tracks.
  - Activities to engage ARC F99/K00 primary research sponsors/mentors on how to effectively support the scholars in the program.

ARC UE5 - Considerations

- Funded ARC research education awards should address the career needs of scholars in **both the predoctoral (F99) and postdoctoral (K00) phases**

- Applicants are expected to identify **objectives** (i.e., specific, measurable, and obtainable outcomes the program intends to achieve) and to develop plans to implement evidence-informed skills development and mentoring activities that are grounded in the literature and from evaluations of existing relevant programs.

- Program activities should build upon the **strengths and assets** of ARC F99/K00 scholars and should not reflect deficit-models (i.e., those that focus primarily on remediation of perceived weaknesses) of career development.

ARC UE5 - Considerations

- Participants will be **scholars at institutions across the Nation** selected by NIH through the ARC F99/K00 competition and will be assigned **up to three times per year** (after each [advisory council](#) round).

- ARC F99/K00 scholars will be at different **points of development when assigned** (e.g., not yet looking for a postdoctoral position, or having a postdoctoral mentor identified and planning their transition).

- Program expected to grow from ~7 scholars in year one to ~35 scholars in year five.

Consider these factors when designing a program to allow newly selected scholars to be integrated into the program on a rolling basis, and to provide activities that align with the varying needs of the scholars.

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ARC UE5 – Eligibility (Organization)

- Eligible Organizations:
  - Higher Education Institutions
  - Nonprofits other than institutions of higher education

Multiple organizations can partner for an ARC UE5 application, with one organization serving as Primary Performance Site Location. If multiple organizations partner for an UE5 application, follow all instructions for Consortium/Contractual Arrangements in the [SF424 (R&R) Application Guide](#).

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ARC UE5 – Eligibility (Organization)

- Applications are encouraged from organizations that have:
  - Experience serving to enhance scientific communication and networking among early-career biomedical researchers;
  - An established record of providing professional development and networking activities for future biomedical researchers; and
  - A demonstrated commitment to enhancing the [diversity](#) of the biomedical research workforce.

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ARC UE5 – Eligibility (PI)

- The PD(s)/PI(s) should have **appropriate professional experience** and be capable of providing both **administrative and training leadership** to the development and implementation of the proposed program.
    - *Do not need to be an active NIH RPG-funded researcher*

- Encourage a multiple PI team when each brings a perspective to enhance the program

PD(s)/PI(s) are expected to be full-time employees of the applicant organization.

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ARC UE5 – Research Strategy

- Proposed Research Education Program
- Program Director/Principal Investigator
- ARC Career Mentors
- Program Participants
- *Recruitment Plan to Enhance Diversity*
- *Plan for Instruction in Methods for Enhancing Rigor and Reproducibility*
- *Plan for Instruction in the Responsible Conduct of Research*
- *Evaluation Plan*
- *Dissemination Plan*

*If section missing, application will **not** be reviewed*

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ARC UE5 – Research Education Program Plan

- Proposed Research Education Program should cite relevant data/report resources in preparing application (for example, activities for addressing psychosocial and environmental factors associated with persistence).

- Describe the short- and long-term goals for participants that the activities are designed to address, and how these outcomes will be measured

ARC UE5 – Research Education Program Plan

- Include description of
  - Organizational setting and current efforts to enhance biomedical trainee pool and workforce diversity
  - Cohort formation and activities
  - Courses for skills development
  - Mentorship
  - Research Sponsor/Mentor Engagement

Consult NOFO for additional information

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ARC UE5 – Research Strategy

- **Program Director/Principal Investigator**
  - How the PD/PI will promote the success of the program
  - Experience with efforts to enhance diversity, promote inclusive environments, and foster trainee career progression

- **ARC Career Mentors**
  - Should recruit professionals in biomedical research careers (e.g., academic research and teaching, industry or government research, and research-related careers) to provide the scholars with additional mentors.
  - Describe mentor training activities

- **Program Participants**
  - Describe the scientific and career interests of ARC F99/K00 scholars best aligned with the proposed research education activities.

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ARC UE5 – Other Requirements

- **Attachment -** Advisory Committee.

- **Letter of Support -** Organizational Commitment. (Three page maximum)

Applications lacking either an advisory committee attachment or organizational commitment letter will not be reviewed.

ARC UE5 – Review

- REMINDER: be sure to comply with all NOFO instructions
- NIGMS Scientific Review Branch will manage reviews
- Scored Review Criteria (each item gets a score)
  - Significance
  - Investigator(s)
  - Innovation
  - Approach
  - Environment

  Pay special attention to "Specific for this NOFO" criteria

- *Additional Review Criteria*
  - Recruitment Plan to Enhance Diversity, Training in Methods for Enhancing Reproducibility, Training in RCR
  - Others (e.g., protection for human subjects) – generally not applicable
- Additional Review Considerations (not part of final score)
  - Resource Sharing Plans, Budget

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ARC UE5 – Application Tips

- **For this NOFO, note the following**: The goal of the ARC UE5 program is to support educational activities for cohorts of ARC F99 fellows/K00 scholars that will provide them with professional skills, mentoring and networks to allow them to transition into and succeed in postdoctoral research and career development opportunities.

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ARC UE5 – Application Prep Tips

- **Significance**
  - Clearly detailed opportunities for skill development, career development, and enhanced mentoring networks to facilitate transition into postdoctoral positions.

- **Investigator(s)**
  - Convincing evidence of PD(s)/PI(s) commitment to enhancing diversity in the biomedical workforce.
  - Solid plans for recruiting participating career mentors from diverse backgrounds, and effective mentor training.

- **Innovation**
  - Evidence that the program is developing or utilizing current best practices or innovative approaches to improve the knowledge/skills of the scholars.

ARC UE5 – Application Prep Tips

- ## Approach
  - Convincing plans for professional development of scholars in the F99 and K00 phases.
  - Proposed activities will enhance community among ARC scholars and strengthen their cohorts
  - Appropriate plans and measurable objectives for evaluating effectiveness of proposed activities.

- ## Environment
  - Prior history with other relevant programs demonstrating that the applicant organization can successfully achieve the goals of ARC.

ARC UE5 – Award Information

Category	Budget Information
Award Budget	Not limited - the average award size is expected to be $400,000 in direct costs per year. Budgets should reflect the fact that the number of ARC scholars is expected to grow through time (e.g., **7** scholars in year one and ~ **35** scholars in year five).
Award Project Period	Five years
Personnel	Individuals designing, directing, and implementing the research education program may request salary and fringe benefits appropriate for the person months devoted to the program.
Participant Costs	• ARC F99/K00 scholars receive educational experiences supported by an UE5 program but may not receive salary or stipend supplementation from the UE5 program. • Funds may be requested for the travel of ARC scholars to UE5 activities.
Other Program-Related Expenses	May be included in budget. Limited program evaluation costs are allowed up to a maximum of 5% of direct costs per year for the 5-year project period.
Indirect Costs	8% of modified total direct costs

ARC UE5 – Cooperative Agreement

- Cooperative Agreement: A support mechanism used when there will be substantial Federal scientific or programmatic involvement.

- Substantial involvement means that, after award, NIH program staff will assist, guide, coordinate, or participate in project activities.

- Specifics of the substantial involvement are delineated in Section VI.2 of the NOFO under "Cooperative Agreement Terms and Conditions of Award"

ARC UE5 – Cooperative Agreement

- NIH's purpose is to support and stimulate the recipients' activities by involvement in and otherwise working jointly with the award recipients in a partnership role

- NIH's purpose is not to assume direction, prime responsibility, or a dominant role in the activities

- The dominant role and prime responsibility resides with the awardees for the project as a whole, although specific tasks and activities may be shared among the awardees and the NIH

- See Section VI.2 of the NOFO for the specifies of the primary responsibilities of the PI(s), the substantial programmatic involvement of NIH staff, the areas of joint responsibility, and how any disputes will be resolved

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ARC UE5 – Timeline

- Application Due Date: January 29, 2024

- Scientific Merit Review: July

- Advisory Council: October

- Earliest Project Start Date: December 2024

- ARC Scholar Assignment: April 2025

ARC UE5 – Questions?
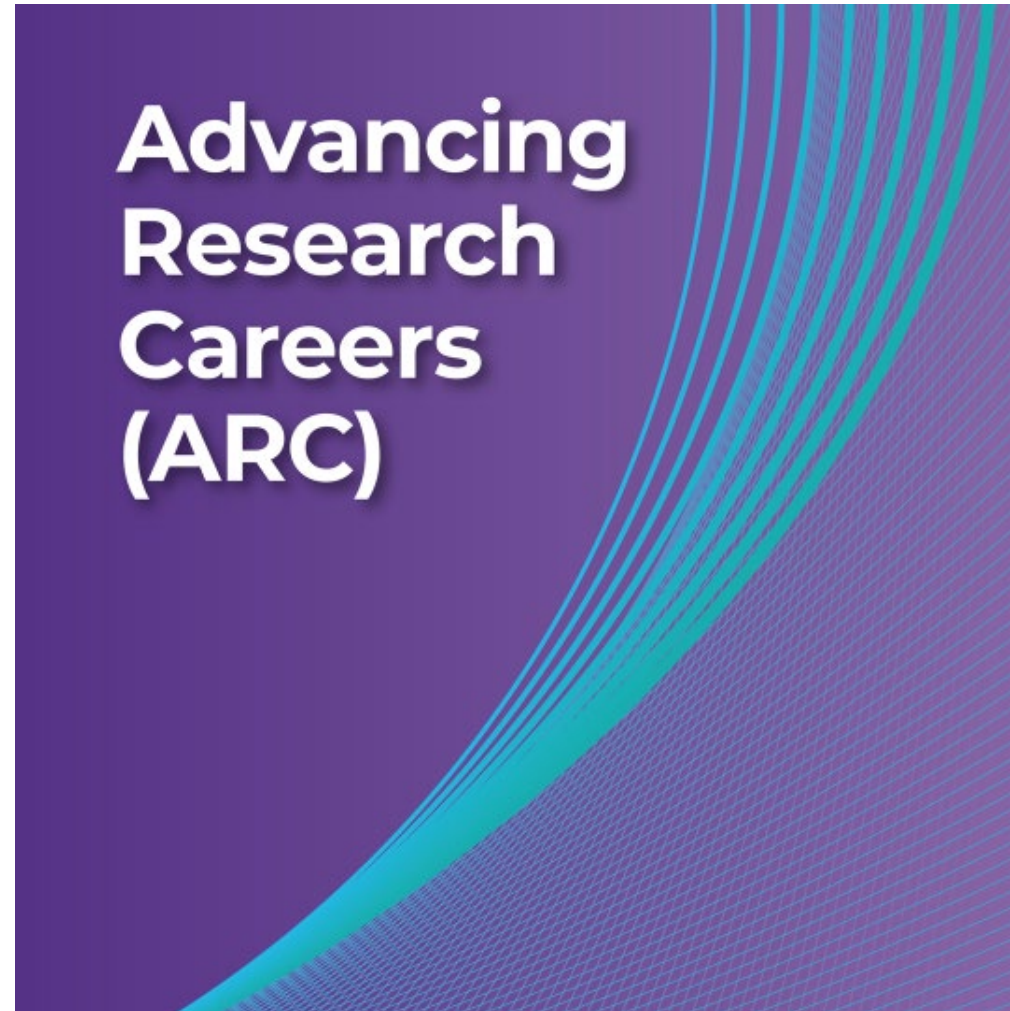
For more information

NOFOs

- UE5 ([PAR-23-221](#)) and F99/K00 ([PAR-23-222](#))

ARC Resources

- [ARC Website](#)

NIGMS Contacts

- Program: Laurie Stepanek (F99/K00 and UE5: laurie.stepanek@nih.gov) and Kenneth Gibbs (UE5: kenneth.gibbs@nih.gov)
- Review: Latarsha Carithers (NIGMSReview@mail.nih.gov)
- Grants Management: Justin Rosenzweig (rosenzwj@nigms.nih.gov)

ARC [F99/K00 Institute and Center Contacts](#)

ARC [UE5 Institute and Center Contacts](#)

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