

NIH and the Academic Research Enhancement Award (AREA) Program

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- **Choosing a grant mechanism and Funding Opportunity Announcement**
- **Overview of AREA Program**
 - Navigating R15 Parent FOA



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NIH's mission

- Seek fundamental knowledge about the nature and behavior of living systems
- Application of that knowledge to enhance health, lengthen life, and reduce illness and disability
- “biomedical and behavioral research”



NIH has 2 levels of review

- Level 1 – peer review of scientific merit
 - SRO manages peer review
 - Study Section and Reviewers
 - Summary Statement
- Level 2 – funding decisions
 - Program Officer
 - National Advisory Council
 - IC Director
- SRO ≠ PO
- Career federal employees



R15s

Director of AREA Program

- Manage direction of AREA

Awarding ICs (PO & GMS):

- Have funding authority
- Awards R15
- Make funding decisions
- Manage & administer grant

R (SRO):

review most R15

Programs

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NIH Guide for Grants and Contracts

- All Funding Opportunity Announcements (FOAs)
 - Published 60+ days before due date
- All Notices
 - Policy announcement, Request for Input, Changes to FOA
- Weekly TOC
 - <http://grants.nih.gov/grants/guide/listserv.htm>



Funding Opportunity Announcement (FOA) Categories

- Parent Program Announcement
 - Most Institutes/Centers participate
 - Standard review criteria & process
 - Standard due dates; Several due dates (3 years)
- Non-parent Program Announcement
 - How Institute/Center announces interest in a topic
 - No set aside funds; NIH RePORTER shows awards to each PA
 - Standard review criteria & process
 - Standard due dates; usually several due dates



More FOA Categories

- PAR = Program Announcement with unique Receipt, Referral or Review
 - One time or several due dates
 - No set aside funds
 - Can have unique review criteria/questions
- Request for Applications (RFA)
 - Usually one time
 - Set aside funds
 - Application must be in scope to be reviewed
 - Often unique aspects
 - Eligibility
 - Application instructions
 - Review criteria (questions)



R01, Research Project

- No budget limit
 - \$250K is modular limit
- 5 years
 - some ICs fund 4 years
- [PA-16-160](#)



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R21, Exploratory/Developmental Grants

- **Intended** for exploratory/developmental research
- Could be high risk/high reward
- 2 years
- \$275 k total direct costs
- **PA-16-161**



Make sure your application fits

- Mechanism
 - Don't submit an R01 scope to the R15
- IC's mission
 - Especially if research could half-fit in 2 ICs
- IC's high priority areas
 - Strategic plans:
<https://report.nih.gov/strategicplans/>



Questions to determine fit for R15

- **Does lab require >\$100K/year?**
- Improve eligible environment?
- Stimulate students' interests? (Will they consider a research career?)
- Performed by undergrad /graduate students at the eligible institution?



Common question in choosing mechanism

- What are success rates for different mechanisms?
- What do differences mean for my application?



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Example: NICHD R15 funding data

Fiscal Year	Number of Applications Reviewed	Number of Applications Awarded	<u>Success Rate</u>	Total Funding
2006	44	7	15.9%	\$1,490,405
2007	46	8	17.4%	\$1,673,536
2008	44	8	18.2%	\$1,550,717
2009	91	13	14.3%	\$2,820,959
2010	81	8	9.9%	\$1,917,869
2011	114	8	7.0%	\$3,545,040
2012	114	21	18.4%	\$8,490,628
2013	138	14	10.1%	\$5,025,028
2014	158	18	11.4%	\$6,898,544
2015	165	14	8.5%	\$5,768,043



Example: Other NICHD funding data

Fiscal Year	Application Type	Activity Code	Applications Reviewed	Applications Awarded	Success Rate
2013	New	R01	1,253	137	10.9%
2013	New	R03	448	56	12.5%
2013	New	R15	132	13	9.8%
2013	New	R21	1,125	94	8.4%
2013	Renewal	R01	161	33	20.5%
2013	Renewal	R15	6	1	16.7%
2014	New	R01	1,313	153	11.7%
2014	New	R03	429	79	18.4%
2014	New	R15	153	18	11.8%
2014	New	R21	1,172	109	9.3%
2014	Renewal	R01	150	26	17.3%
2014	Renewal	R15	5	0	0.0%
2015	New	R01	1,453	165	11.4%
2015	New	R03	388	61	15.7%
2015	New	R15	161	12	7.5%
2015	New	R21	1,182	100	8.5%
2015	Renewal	R01	138	23	16.7%
2015	Renewal	R15	4	2	50.0%



Have a dialog with R15 Contact

- Would IC be more enthusiastic if other R?
- What are common problems in R15 applications?
 - Over ambitious?
 - Not in high priority areas?
 - Don't have appropriate resources....
 - Don't have appropriate personnel...
- Write a better application...



Goals & scope in Part 2, Section I, Funding Opportunity Description

Part 2. Full Text of Announcement

Section I. Funding Opportunity Description

The National Institutes of Health (NIH) is continuing to make a special effort to stimulate research at educational institutions that provide baccalaureate and/or advanced degrees for a significant number of the Nation's research scientists, but that have not been major recipients of NIH support. Since Fiscal Year (FY) 1985, Congressional appropriations for the NIH have included funds for this initiative, which NIH has implemented through the Academic Research Enhancement Award (AREA) program. Based on the expectation that funds will continue to be available each year, NIH invites applications for AREA grants through this Funding Opportunity Announcement (FOA). AREA funds are intended to support new and renewal biomedical and behavioral research projects proposed by faculty members of eligible colleges, universities, schools, and components of domestic institutions.

The objectives of the AREA program are to provide support for meritorious research, to strengthen the research environment of schools that have not been major recipients of NIH support, and to expose available undergraduate and/or graduate students in such environments to meritorious research. The AREA program will enable qualified scientists to receive support for small-scale research projects. These grants are intended to create a research opportunity for scientists and institutions otherwise unlikely to participate extensively in NIH programs that support the Nation's biomedical and behavioral research effort. It is anticipated that investigators supported under the AREA program will benefit from the opportunity to conduct independent research; that the grantee institution will benefit from a research environment strengthened through AREA grants and by participation in the diverse extramural programs of the NIH; and that undergraduate and/or graduate students at recipient institutions will benefit from exposure to and participation in scientific research in the biomedical and behavioral sciences so that they consider careers in biomedical and behavioral sciences.

The research project must involve undergraduate (preferably, if available) and/or graduate students in the proposed research. Students' involvement in research may include participation in the design of experiments and controls, collection and analysis of data, execution and troubleshooting of experiments, presentation at meetings, drafting journal articles, collaborative interactions, participation in lab meetings to discuss results and future experiments, etc. The AREA program is a research grant program, not a training or fellowship program. As such, applications should not include training plans such as didactic training plans or non-research activities relating to professional development.

An AREA application may include other investigators, such as collaborators or consultants, or other trainees such as high school students, post baccalaureate participants, postdoctoral fellows, or clinical fellows. However, involvement of such individuals does not fulfill the goal to expose undergraduate and/or graduate students in eligible environments to research.



Goals of AREA program

- Support small scale research projects
- Expose students in eligible environment to hands-on research
 - Undergraduate (preferably) &/or graduate
- Strengthen the research environment of educational institutions that have not been major recipients of NIH research funds



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Key features

- 3 year project period
- Up to \$300,000 direct cost over 3 years
- Multiple PIs are allowed, if all eligible
- 12 page Research Strategy
- Grants are renewable



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Art of Crafting R15

- Scientifically meaningful
- Feasible with
 - Resources
 - Effort
 - Students
- Appropriate scope



For many R15 awards

- Project synergizes with institution's efforts
- Feasibility of project is well documented
 - Science
 - Personnel
 - Facilities, equipment, resources, etc.



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Application instructions are in Part 2, Section IV, Part 2

Application instructions are in Part 2,
Section IV, Part 2

Apply for Grant Electronically

A compatible version of [Adobe Reader](#) is required for download. For Assistance, visit <http://www07.grants.gov/contactus/contactus.jsp>.

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Section IV. Application and Submission Information

1. Requesting an Application Package

Applicants must obtain the SF424 (R&R) application package associated with this funding opportunity by downloading the application package from this FOA or following the directions provided at Grants.gov.

2. Content and Form of Application Submission

It is critical that applicants follow the instructions in the [SF424 \(R&R\) Application Guide](#), including where instructed in this funding opportunity announcement to do otherwise. Conformance to these instructions is strictly enforced. Applications that are out of compliance with these instructions may be delayed or rejected.

For information on Application Submission and Receipt, visit [Frequently Asked Questions – Applications](#).

Page Limitations

All page limitations described in the SF424 Application Guide and the [Table of Page Limits](#) must be followed.

Instructions for Application Submission

The following section supplements the instructions found in the SF424 (R&R) Application Guide and the SF424 (R&R) FOA.

SF424(R&R) Cover

All instructions in the SF424 (R&R) Application Guide must be followed.

SF424(R&R) Project/Performance Site Locations

All instructions in the SF424 (R&R) Application Guide must be followed, with the following additions: the research will be directed by the PD(s)/PI(s) at the grantee institution, the primary performance component.

SF424(R&R) Other Project Information

All instructions in the SF424 (R&R) Application Guide must be followed.

Facilities & Other Resources: The following information must be included.

- A profile of the students of the applicant institution/academic component and any information on the institution/academic component's efforts to encourage baccalaureate degree and gone on to obtain an academic or professional doctoral degree.
- A description of the special characteristics of the institution/academic component that make it a unique and distinctive environment for the ARPA program are to: (1) provide support for meritorious research; (2) strengthen the research environment.



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Sample Facilities & Other Resources

- Fictional sample of R15-specific instructions
- <http://grants.nih.gov/grants/funding/F-OR-annotate.doc>
- Example and tool
- *Not template*

Profile²

Alar College is a highly selective liberal arts college³ that confers the Bachelors of Arts and Bachelors of Science degrees. Alar College is dedicated to the excellence in undergraduate education, and there are no graduate programs. In the last five years, 85% of our graduates rank in the top 25% of their high school class⁴. Last school year 2125 students were enrolled. In the last five years, 15-20% of students have majored in science and math with approximately 400 students receiving bachelor's degrees⁵. In the last five year, 25% of those graduates have enrolled in PhD programs related to health sciences, 15% have enrolled in and/or graduated from doctoral programs for medicine, dentistry, veterinary medicine, or physical therapy, and 10% have enrolled in Masters programs related to health sciences. The Biology Department encourages undergraduate research and takes pride in its effectiveness in training undergraduate students through high-quality research opportunities, rigorous standards, and individual responsibility. In the past 5 years, 20 students have received the prestigious National

¹ Follow the instructions in the SF424 R&R Application Guide for instructions not specific to R15.

² The instructions for this section are to provide "A profile of the students of the applicant institution/academic component and any information or estimate of the number who have obtained a baccalaureate degree and gone on to obtain an academic or professional doctoral degree in the health-related sciences during the last five years." This section addresses the review criteria, "Does the application demonstrate the likely availability of well-qualified students to participate in the research project? Does the application provide sufficient evidence that students have in the past or are likely to pursue careers in the biomedical or behavioral sciences?"



Research Strategy

- Address R15 & non-R15 review criteria
- Demonstrate appropriateness of project and group, including students
- Describe supervision of students
- No fellowship-style training plans
 - e.g., Coursework, seminars, conferences



Where to find review criteria

Review criteria are in Part 2,
Section V, Part 1

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Section V. Application Review Information

1. Criteria

Only the review criteria described below will be considered in the review process. As part of the NIH mission, support of biomedical and behavioral research are evaluated for scientific and technical merit through the NIH peer review system.

For this particular announcement, note the following:

The objectives of the R15 program are to (1) provide support for meritorious research, (2) strengthen the research environment, and (3) expose available undergraduate and graduate students in such research. Preliminary data are not required for an R15 application; however, they may be included if available.

Overall Impact

Reviewers will provide an overall impact score to reflect their assessment of the likelihood for the project to advance the research field(s) involved, to provide research opportunities to students, and to strengthen the research environment. Reviewers will consider the following review criteria and additional review criteria (as applicable for the project proposed).

Scored Review Criteria

Reviewers will consider each of the review criteria below in the determination of scientific merit, and give a score. A score of 1 indicates that the project is essential to advance a field.

Significance

Does the project address an important problem or a barrier to progress in the field? Is there a strong scientific basis for the project? If the project is achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved? Does the project aim to change the concepts, methods, technologies, treatments, services, or preventative interventions that are currently in use? Will the award have a substantial effect on the school/academic component in terms of strengthening the research environment?

Investigator(s)

Are the PD(s)/PI(s), collaborators, and other researchers well suited to the project? If Early Stage Investigator, do they have appropriate experience and training? If established, have they demonstrated accomplishments that have advanced their field(s)? If the project is collaborative or multi-PD(s)/PI(s), do the investigators have complementary and integrated expertise; are their leadership approach, governance and organizational structure appropriate to the project? Do the investigators have suitable experience in supervising students in research?

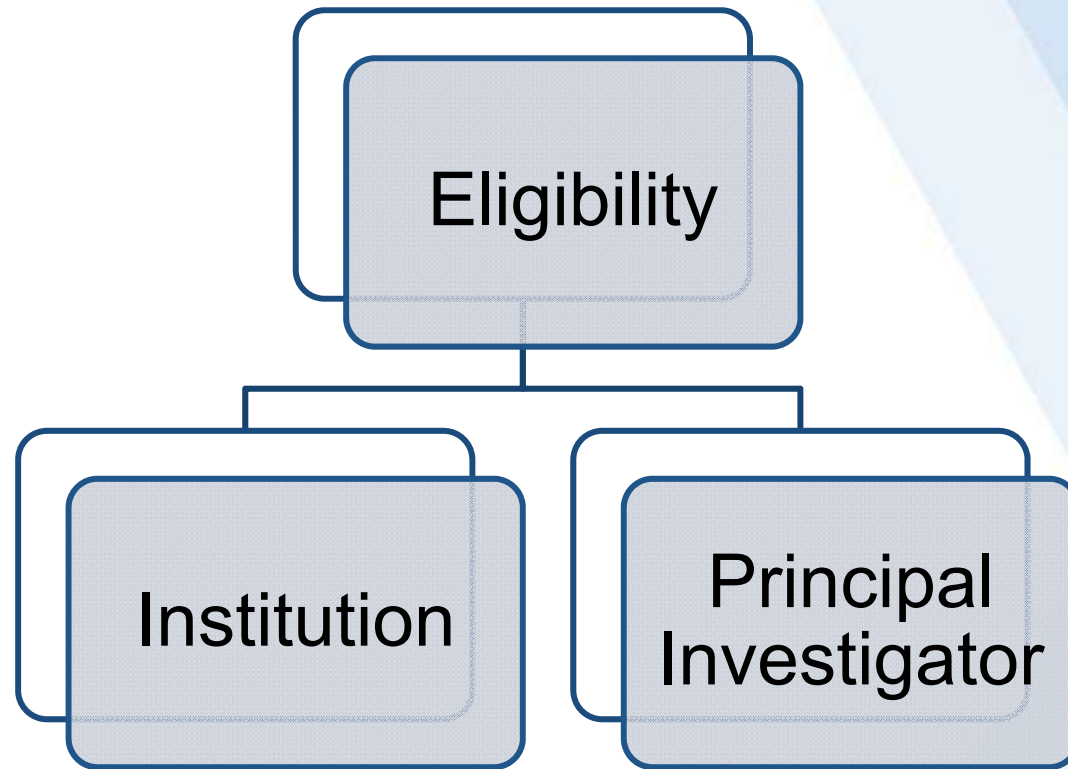
Innovation

Does the application challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions? Are the concepts, approaches or methodologies, instrumentation, or interventions novel in a broad sense? Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?

Approach



Eligibility



Eligibility = applicant institution and PI only
Eligibility \neq collaborators



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Where to find eligibility in the PA

R15-specific eligibility criteria are in
Part 2, Section III, Part 1

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Section III. Eligibility Information

1. Eligible Applicants

Eligible Organizations

Higher Education Institutions

- Public/State Controlled Institutions of Higher Education
- Private Institutions of Higher Education

The following types of Higher Education Institutions are always encouraged to apply for NIH support as Public or Private Institutions of Higher Education:

- Hispanic-serving Institutions
- Historically Black Colleges and Universities (HBCUs)
- Tribally Controlled Colleges and Universities (TCCUs)
- Alaska Native and Native Hawaiian Serving Institutions
- Asian American Native American Pacific Islander Serving Institutions (AANAPISIs)

In addition, all organizations must meet the following two criteria:

1. The applicant organization must be an accredited public or non-profit private school that grants baccalaureate or behavioral sciences
 2. The applicant organization may not receive research support from the NIH totaling more than \$6 million per year (direct costs) in each of 4 of the last 7 years.
- Note that all activity codes are included except the following: C06, S10, and all activity codes starting with a G.

Institutions with Health Professional Schools or Colleges

For institutions composed of multiple academic components (i.e., schools or colleges), the criterion of financial eligibility is based on the total research grant monies received, not by the institution (university) as a whole, but by the individual health professional schools or colleges. "Other Academic components" (as defined in this section) where the PD/PI has a primary appointment (e.g., School of Medicine, College of Nursing, School of Pharmacy, etc.). Thus, each of the following is considered independently when evaluating the financial eligibility of the applicant organization.

- Health professional school/college: Accredited public or non-profit private school/college that grants a terminal health professional degree (e.g., DDS, DO, PharmD, BSN, DVM, DrPH, OD, DPT, DC, ND, DPM).
 - Accreditation must be provided by a body approved for such purpose by the Secretary of Education.
 - Health professional schools/colleges that meet the above requirements may include schools or colleges of dentistry, pharmacy, nursing, veterinary medicine, public health, optometry, allied health, chiropractic, naturopathy, etc.
- Other Academic component: Once the health professional schools/colleges have been excluded, the financial eligibility of the remaining component is determined by the sum of all remaining schools, colleges, and free-standing institutes of the institution.

Additional Eligibility Guidance

To determine the financial eligibility of an institution, applicants should consult the [list of ineligible institutions](#) on the A



PI eligibility

- Primary appointment at eligible institution
- Multiple PI OK if all eligible
- R15 intended to be only NIH research grant
 - Eligible:
 - Also serve as Key Personnel on another grant
 - PI Impact is different
 - Not Eligible:
 - PI of other NIH research grants at time of award
 - Multiple PI on another NIH research grant at time of award
 - Research is broadly defined
 - Research ≠ conference, training, construction grants



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Can I have ineligible collaborator?

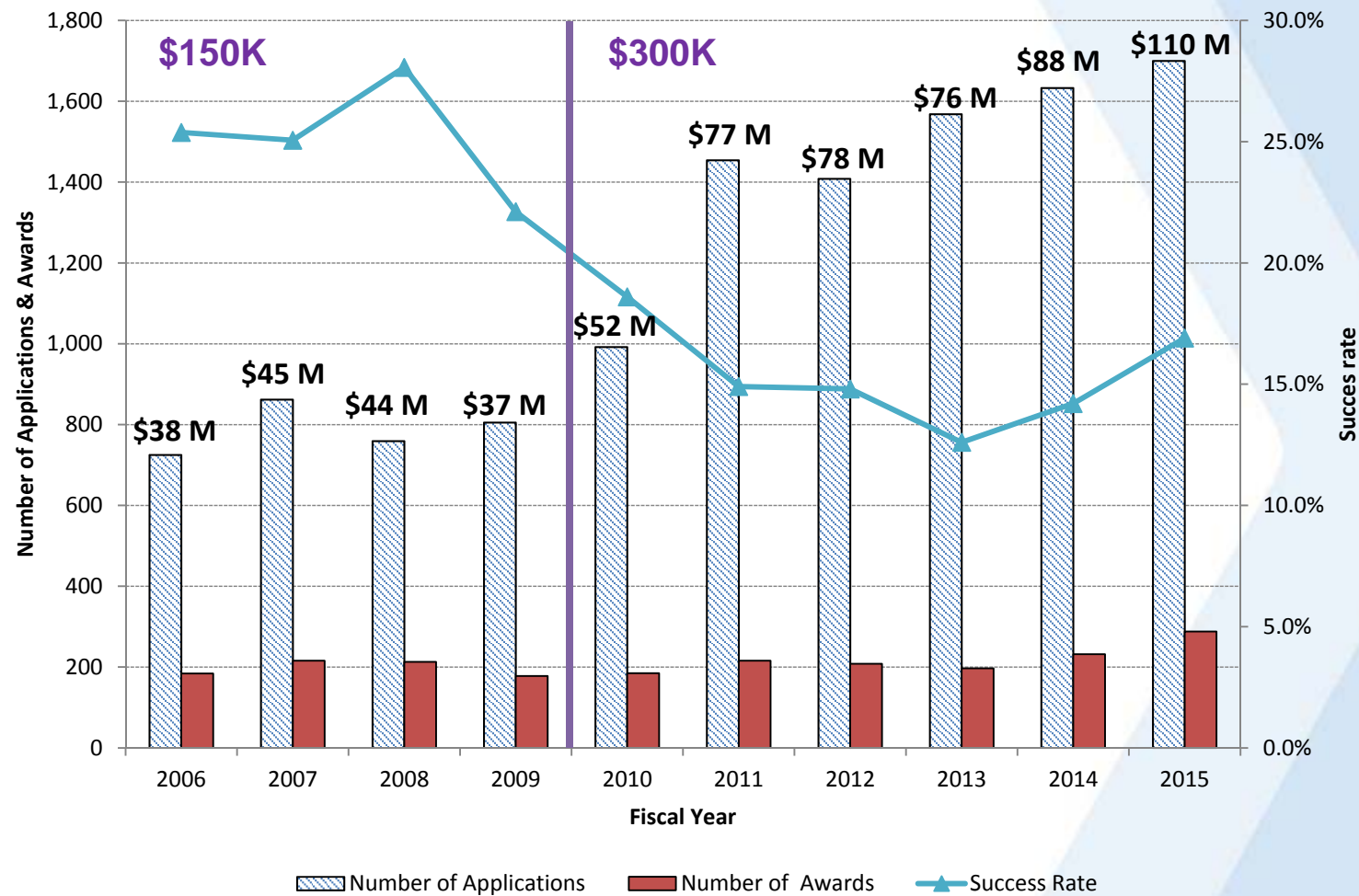
- Eligibility answer: Yes
- Merit answer: **But**
 - Majority of research should be directed by PI at grantee institution
 - Student profile & student inclusion are for applicant/eligible component
 - Consider the unique goals and criteria of the R15
 - No one can predict what level of involvement will be seen as counter to the R15 goals
 - Pre-PA-12-006, unique attributes not included in review criteria



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FY06-15 Funding trends



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Strategies for success

- **Institution**
- **Investigator**



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Advice for undergraduate-driven projects

- Research Strategy should address feasibility with students
- Involve first years & sophomores
- Multi-semester commitment
- Lab classes teach experimental design
- Consider cultural exposure to major research institutions in lieu of summer REU
- Assess what students need to participate
- Help students plan workload realistically
- Involve students in training new students
- Consider a (part time/seasonal/dept) technician



There is no winning formula

- ❖ No one can give specifics of what will score well
- ❖ Do not treat a successful [or not] application as an iron-clad template [of what not to do]
 - How many students
 - How many papers
 - What % of a collaborator
 - What % of special facilities
 - What amount or type of institutional support
 - What type of environment



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Build a vital research environment

- Understand the NIH extramural research program
 - Know guidelines, deadlines, submission & correction process, and review criteria
 - Create an environment in which grants office can succeed
 - Training
 - Protected time
 - Support to set expectations
- Make a commitment to establishing an environment in which research can succeed
 - Start up packages for equipment and supplies
 - Pilot grants, student research grants
 - Credit for student involvement in research



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...Build a research environment

- Consider the importance of collaborative research in establishing a successful research environment
- Do not pressure investigators to apply if their projects are not ready for peer review
 - Quality over quantity; submit best application
 - ~~“Get some feedback from the reviewers”~~
- Help investigators with the “Facilities and Other Resources” section of application
 - Profile of student body
 - Description of the institution and research environment
 - Letter of institutional commitment to research project
 - Maintain as resource & revise per Summary Statements



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Strategies of Successful PIs

- Include a collaborator or consultant if you don't have the necessary expertise or resources
- Understand the review criteria and the review criteria questions
 - Each question should be addressed in the application
- In A1, respond thoroughly and diplomatically to all of the reviewer comments
- AREA grant is research award, not training award
 - Focus on hands-on research not course work
 - Describe PI's role in research & supervision



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More Strategies of Successful PIs

- Address the AREA-specific programmatic goals in the application; these are reflected in review criteria
 - Support meritorious research
 - Research should contribute to the field
 - Results should be publishable
 - Expose students to research
 - Profile of available and former students at the institution
 - Experience of the investigator in working with students
 - How students will be incorporated into the research project
 - How students will benefit from this research experience
 - Strengthen the research environment
 - The suitability of the institution for an award
 - The impact the AREA grant will have on the institution



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AREA Program Resources

- Twitter [@NIHR15](#)
- Facebook [NIH AREA Program](#)
- Resources
 - <https://grants.nih.gov/grants/funding/area/resources.htm>
- Main webpage
 - <http://grants.nih.gov/grants/funding/area/area.htm>
- Institutional Eligibility
 - <https://grants.nih.gov/grants/funding/area-ineligible.htm>
- Institute/Center contacts
 - http://grants.nih.gov/grants/guide/contacts/parent_R15.html
- AREA mailbox R151@mail.nih.gov



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