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Advancing interventional radiology through research

ALLIED SCIENTIST TRAINING GRANT

PURPOSE

The goal of the Allied Scientist Grant is to provide support to trainees enrolled in graduate level training programs outside the clinical realm of Interventional Radiology but are still considered crucial to the future of Interventional Radiology and create collaborative research training environments that benefit from the unique perspectives of established scientists and Interventional Radiologists. SIR and SIR Foundation believe in promoting a culture of inclusion and strengthening the specialty of interventional radiology (IR) through different perspectives.

AWARD

Grant funding up to $40,000. ($20,000 a year for 2 years)
Award Project Period: Maximum project period is 24 months (2 years).

*Please note the second year of funding is contingent on satisfactory review of the first year's progress report.

NATURE OF PROJECTS

The mission of this grant mechanism is to fund research that will lead to the ongoing collaboration between basic or translational science laboratories and interventional radiology by funding graduate level trainees. Specifically, SIR Foundation seeks to promote highly innovative, groundbreaking research; high-impact research with near-term clinical relevance; multidisciplinary, synergistic research; translational studies to support the fluid transfer of knowledge from bench to bedside; and the next generation of interventional radiology investigators through mentored research.

EXAMPLES OF RESEARCH TOPICS

Projects may include but are not limited to topics such as:

- Explore the role of IVUS or other intravascular imaging in determining endpoints in chronic limb ischemia
- Explore the role of ultrasound imaging in arteriovenous lesion identification pre-procedure to improve interventions
- Investigating the role of SVC stenting in oncologic patients
- Defining the best interventions for superficial vein disease (thermal vs. non-thermal)
- Comparing IR for spine interventions for pain to external beam radiation with a particular focus on the length of stay
- Review patient outcomes of adenomyosis treatment for all patients through the development of a quality-of-life questionnaire
- Evaluate imaging criteria of adenomyosis and correlate with pathology and symptoms to establish a non-invasive imaging classification system
- Evaluate procedural variables such as (fluoroscopy dose, contrast load, procedure time, etc.) across IR in different practice environments, as well as between specialties

ELIGIBILITY

- Applicant is encouraged to be an SIR member, but it is not a requirement. However, the trainee's advisor or co-advisor must be an active SIR member
    - Note the requirement of active membership status means that either the advisor or co-advisor must

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be an Interventional Radiologist).

- Candidate should be a trainee enrolled in a graduate level, degree-seeking program (i.e., Masters, Doctor of Philosophy, or equivalent) or a post-doctoral fellow at an accredited educational institution in the United States or Canada.
    - Students enrolled in a wide variety of disciplines such as engineering, informatics, cellular and molecular biology will also be considered.
- Applicants enrolled in clinical residencies or fellowships are not eligible for this grant.
- It is expected that the trainee will devote a minimum of 75% of their time to the proposed research project.
- Applicants must be citizens of the United States or Canada or those who have permanent resident status therein.
    - Permanent residents must submit documentation of their status.
    - If an applicant is at an institution in the U.S. or Canada and is on a visa, a letter will be required from the department chair guaranteeing completion of the project.

APPLICATION DEADLINES

Optional: **Proposal Development Form must be submitted by June 30, 2022, to receive feedback**.

Optional: **Pre-Review applications are due by close of business day on September 20, 2022.**

Final applications are due by close of business day on January 15, 2023. The deadline remains whether or not the date falls on a weekend and/or holiday. Applications that are not completed or do not comply with the guidelines, will be withdrawn.

Applicants are to submit their completed application via the online form found at:
http://apply.sirfoundation.org/

APPLICATION PROCEDURES

Applicants should propose research that advances the science of interventional radiology. The application must contain a detailed research plan, including a two- year budget for the planned research with all funding sources indicated. All funds requested in the application must be fully justified. Insufficient justification or failure to describe completely the sources and use of other funds available to the investigator will result in deferral or disapproval of the application.

Two letters of recommendation are necessary. One should come from the department chair indicating commitment to provide the required level of protected research time and additional salary support for the applicant. A second letter should come from the applicant's mentor delineating the mentor's and applicant's interests and experiences in the proposed research area.

The application must be submitted in PDF format at **http://apply.sirfoundation.org/** by **January 15, 2023**. Applications must be submitted in PDF format. Incomplete applications and those submitted after the deadline of **January 15, 2023,** will not be reviewed.

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Optional Application Procedures:
Applicants are **highly recommended** to take advantage of the Proposal Development Form to obtain external input on the fundamentals of grant writing and how to maximize the impact of their research program. The form must be submitted by June 30, 2022, to receive feedback.

In addition to the Proposal Development Form, SIR Foundation offers a **highly recommended** Pre-Review process to work with a member of the Grant Review Study Section to review the grant application prior to final review. The deadline to submit for Pre-Review is September 20, 2022.

AWARD EXPENSES
The award may be used to cover the trainee's stipend. If the trainee's stipend is covered by other funding mechanisms, this award may be used to purchase research materials. These materials may include laboratory reagents, equipment, service function charges (ex. pathology costs, animal per diem charges, reasonable imaging machine charges) and travel expenses for attending project related conferences. Institutional indirect costs (such as administrative salaries, office expenses, and construction expenses) will not be allowed.

If the project involves the use of human subjects, animals, radioisotopes, or biohazards, documentation of approval from the appropriate institutional review board(s) (IRB) must be provided before distribution of funds.

Any unexpended funds must be returned to SIR Foundation.

Grant recipients will not be eligible for concurrent support through other SIR Foundation research grants. SIR Foundation will not accept applications that are essentially the same as one already reviewed and funded through another organization. There can be no scientific overlap.

- Scientific overlap occurs when (1) the same research proposal is submitted to more than one application or submitted to two or more funding sources for funding consideration (2) specific research objective and research design are the same or are closely related in two or more applications.

GRANT APPLICATION FORMAT
When uploading your grant application to our online forms, you must save your grant application using the naming convention below.

2023_Allied Scientist _Mary Johnson

If you have a resubmission, you must save your grant application using the naming convention below.

2023_Resubmission1_Allied Scientist_Mary Johnson
2023_Resubmission2_Allied Scientist_Mary Johnson

All the items detailed below must be included in the application before it will be considered. The format should follow the guidelines used for NIH applications and an example is posted on the SIR Foundation website.

I. Title Page:
A. Title of research project;

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B. Lay statement of the proposed research project and its relevance to interventional radiology;
C. Name, faculty position, and department of principal investigator and mentor, as well as other professional personnel collaborating in the research project;
D. Brief abstract (ten (10) to twenty (20) lines), with keywords underlined;
E. Beginning and termination dates of proposed expenditures; F. Total funding requested; G. Signatures of principal investigator, mentor, and department chairperson;
F. Contact information (name, address, phone, fax, email) for the grants office at the principal investigator's institution.

II. Description of Research Plan:

The applicant must present his/her research logically and clearly and show that the proposed research is meaningful (LIMIT—6 PAGES FOR SECTIONS A-B)

A. Specific Aims:

State concisely the goals of the proposed research and summarize the expected outcome(s), including the impact that the results of the proposed research will exert on the research field(s) involved. List succinctly the specific objectives of the research proposed, e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology. (1 page)

NOTE: **The Proposal Development Form is intended to specifically address the creation of an effective Specific Aims page. The deadline for assistance using this program is June 30, 2022.**

B. Research Strategy:

Organize the Research Strategy in the specified order and using the instructions provided below. Start each section with the appropriate section heading – Significance, Innovation, Approach. Cite published experimental details in the Research Strategy section and provide the full reference in the References Cited section

Significance. Explain the importance of the problem or critical barrier to progress in interventional radiology. Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in interventional radiology or other fields. Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive interventional radiology will be changed if the proposed aims are achieved. **(0.5 pages)**

Innovation. Explain how the application challenges and seeks to shift current research or clinical practice paradigms. Describe any novel theoretical concepts, approaches or methodologies, instrumentation or interventions to be developed or used, and any advantage over existing methodologies, instrumentation, or interventions. Explain any refinements, improvements, or new applications of theoretical concepts, approaches or methodologies, instrumentation, or interventions.**(0.5 pages)**

Approach. Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted. Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve

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the aims. If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high-risk aspects of the proposed work. Point out any procedures, situations, or materials that may be hazardous to personnel and precautions to be exercised. **(3-3.5 pages pages)**

Note: If an applicant has multiple Specific Aims, then the applicant may address Significance, Innovation and Approach for each Specific Aim individually, or may address Significance, Innovation and Approach for all of the Specific Aims collectively.

Include preliminary studies within the Research Strategy section, within one or more of the three sections listed above: Significance, Innovation, and Approach. Discuss the PI's preliminary studies, data, and or experience pertinent to this application, preliminary data is an essential part of a research grant application and help to establish the likelihood of success of the proposed project. Early-Stage Investigators should include preliminary data.

C. Human or Animal Subjects, Radioisotopes, and Biohazards: Provide documentation that the institution has approved all proposed human, animal, radioisotope, and biohazard use (e.g., IRB or IACUC approval);

D. Budget Proposal: List budget items in the following main categories and give details and justification of the items in each category:

1. Salary of Principal Investigator. Salary support of technicians, students, or support personnel working on the project may be requested, but must be well justified;
2. Consumable supplies including animal purchase costs;
3. Equipment: Identify each item, show unit cost, and explain why it cannot be borrowed;
4. Other expenses including animal maintenance costs (only those costs essential to the conduct or reporting of the research);
5. Total budget (not to exceed $20,000 per year).

E. Other Support: Describe all funding currently available to the applicant as well as any pending grant support, and describe the relationship these funds may have to the proposed research;

F. Literature Cited.

III. Supporting Materials

A. Resources: Describe the facilities available for conduct of the proposed research including lab space, equipment, computers, technical/statistical support, etc.

B. Brief biographical sketch of all investigators in NIH format (Not to exceed four pages for each investigator).

C. A letter from the department chair that:
1. Indicates approval of the application;

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2. Comments on the merit of the project;
3. Explains the extent to which the department is supporting the applicant's research in terms of funding, level of protected research time, technical support, and available facilities. It is essential that the chair's letter indicate commitment to support the salary of the applicant during the research period;
4. If applicable (see "Eligibility" above), guarantees the proposed research will be completed if funded.

D. A letter from the mentor that:
1. Indicates a commitment to act as mentor for the applicant;
2. Describes the mentor's and applicant's interests and experiences in the research area;
3. Comments on the merits of the project and its relevance to interventional radiology.

E. Letter(s) of confirmation from company(s) providing materials needed to complete the proposed research.

REVIEW PROCESS

First Level of Review

Completed applications will be initially reviewed by the members of the SIR Foundation Grant Review Study Section, who will submit preliminary scores for each of the assigned applications. Members of the study section are assigned grant applications based on their expertise in the particular area of the proposed investigation and will review each application for scientific merit.

Second Level of Review

After the first level of review when scores are submitted for each application, reviewers will convene during Study Section held at the SIR Annual Scientific Meeting, where applications will be discussed for a second level of review and funding recommendations will be made to the SIR Foundation Board.

Post Review

The SIR Foundation Board will review funding recommendations made by the Grant Review Study Section and will make the final funding decisions. Grant applicants will be notified of final funding decisions after the SIR Annual Scientific Meeting.

Funding decisions are based on the overall impact/priority score which reflect assessment of the likelihood that the project will exert a sustained, collaborative influence on the field of interventional radiology through basic science or translational research.

1. *Significance*. Does the project address an important problem or a critical barrier to progress in the field of interventional radiology? If the aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this interventional radiology?

2. *Investigator*. Are the Principal Investigator (PI), collaborators, and other researchers well suited to the project? Does the PI have the appropriate experience and training? Have they demonstrated an ongoing record of accomplishments that have advanced interventional radiology?

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3. *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 to one field of research or novel in a broad sense? Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?

4. *Approach*. Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project? Are potential problems, alternative strategies, and benchmarks for success presented? If the project is in the early stages of development, will the strategy establish feasibility and will particularly risky aspects be managed? If the project involves clinical research, are the plans for 1) protection of human subjects from research risks, and 2) inclusion of minorities and members of both sexes/genders, as well as the inclusion of children, justified in terms of the scientific goals and research strategy proposed?

5. *Environment.* Will the scientific environment in which the work will be done contribute to the probability of success? Are the institutional support, equipment and other physical resources available to the investigators adequate for the project proposed? Will the project benefit from unique features of the scientific environment, subject populations, or collaborative arrangements?

In addition, the review committee will take the following factors into consideration:

Protection of human subjects. For research that involves human subjects, the committee will evaluate the justification for involvement of human subjects and the proposed protections from research risk relating to their participation according to the following five review criteria: 1) risk to subjects, 2) adequacy of protection against risks, 3) potential benefits to the subjects and others, 4) importance of the knowledge to be gained, and 5) data and safety monitoring for clinical trials

Inclusion of Women, Minorities, and Children. When the proposed project involves clinical research, the committee will evaluate the proposed plans for inclusion of minorities and members of both genders, as well as the inclusion of children.

Vertebrate Animals. The committee will evaluate the involvement of live vertebrate animals as part of the scientific assessment according to the following five points: 1) proposed use of the animals, and species, strains, ages, sex, and numbers to be used; 2) justifications for the use of animals and for the appropriateness of the species and numbers proposed; 3) adequacy of veterinary care; 4) procedures for limiting discomfort, distress, pain and injury to that which is unavoidable in the conduct of scientifically sound research including the use of analgesic, anesthetic, and tranquilizing drugs and/or comfortable restraining devices; and 5) methods of euthanasia and reason for selection

Biohazards. Reviewers will assess whether materials or procedures proposed are potentially hazardous to research personnel and/or the environment, and if needed, determine whether adequate protection is proposed.

Resubmission. For Resubmissions, the committee will evaluate the application as now presented, taking into consideration the responses to comments from the first level of review and changes made to the project.

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Budget and Period of Support. Reviewers will consider whether the budget and the requested period of support are fully justified and reasonable in relation to the proposed research.

Letters of support. Letters of support from industry and/or memorandums of understanding with collaborators will be taken into consideration.

PAYMENT SCHEDULE

Upon submission of a fully executed grant agreement, awarded funds will be transmitted to the institution for support of the grant recipient and the project. Each year's funds will be distributed in three installments: 50% at the start of the project, 40% upon receipt of the 12-month (1-year) progress report, and 10% upon receipt of a cover letter and the final report in manuscript format.

Please provide the following information:

1) Grant Official or Grant Administrator's name, phone number, and email address
2) Check made payable to:
   Mailing address (where payment should be mailed)

MODIFICATION OR TERMINATION OF SUPPORT

SIR Foundation reserves the right to modify or terminate the amount of any funds granted under the terms of the Allied Scientist Grant. Generally, such action would be based on the grant recipient's receipt of support from sources other than SIR Foundation which might (1) limit the ability of the recipient to successfully complete the terms of the grant or (2) obviate the recipient's need for funding from SIR Foundation.

In the event that the principal investigator relocates to a different institution, a request in writing to relocate the grant to the new institution may be made to the Associate of Research and Grants. SIR Foundation will continue project funding provided the grantee is guaranteed support, protected research time, and adequate equipment/facilities from the new institution (i.e., letter from department chair) as well as IRB/IACUC approvals, if applicable. If the new institution cannot provide the necessary support or approvals for the project, the original institution may appoint a new principal investigator, with SIR Foundation's approval, to complete the project. If the project cannot be completed at the new or the original institution, then all unexpended funds must be returned to SIR Foundation.

REPORTS

An Interim Progress Report (IPR) is required after the first year (12 months) of the project.
The interim progress report must be submitted electronically through the online forms found at **http://apply.sirfoundation.org/**.This report should be a one- to two-page synopsis of the progress, unforeseen problems, and results to date.

The IPR should include the following:

1. Specific aims/goals of the research project(s) and accomplishments relating to each specific aim/goal (all supporting data should be included, if applicable);
2. Indicates the significance/possible clinical impact of the results;
3. States whether the results will be submitted for possible publication, and if so, to what journal;
4. Indicates whether results will be used to apply for additional funding from other sources, and if so, the funding agency and date of application (should be included).

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5. When uploading your Interim Progress Report (IPR) to our online forms, you must save your Interim Progress Report using the naming convention below. The year should be the year that you were awarded.
    a) **2023_IPR_Allied Scientist_Mary Johnson**

A final written report must be submitted within sixty (60) days of the project's completion. The Final Progress Report (FPR) must be submitted electronically through the online forms found at **http://apply.sirfoundation.org/**

The Final Progress Report (FPR) should include the following, as applicable:

1. A Statement of the accomplishments/outcomes of this grant
2. The current and future impact (e.g., success stories, statistics, benefits to patients, staff, and/or community)
3. The use of this award to leverage other funding
4. An account of any unexpended funds and/or major modifications of the budget.
5. Include Signature of Principal Investigator/Program Director's name, Signature of Authorized Institutional Official, and Date.
6. When uploading your Final Progress Report (FPR) to our online forms, you must save your Final Progress Report using the naming convention below. The year should be the year that you were awarded.
    a) **2023_FPR_Allied Scientist_Mary Johnson**

NO-COST EXTENSION

An extension of the term of the grant may be requested for up to twelve (12) months beyond the original ending date of the grant. The approval of an extension does not include the award of additional funds. A maximum of two 1- year extensions may be requested.

The request for a no-cost extension must be made in writing to the Grant Review Committee at SIR Foundation's address one (1) month before the original project end date. The request must include the reason for the extension, the length of the extension (not to exceed twelve (12) months), and a brief project progress report, including to date findings, problems encountered, presentations/publications resulting from the work, and budget expenditures. The request must be co-signed by the department chair or other authorized institutional official.

Other requests for changes to the terms of an award should also be addressed to the SIR Foundation Grant Review Committee with similar documentation and institutional approvals.

PRESENTATIONS/PUBLICATIONS

It is suggested that recipients submit their work primarily to *JVIR* or to the SIR Annual Scientific Meeting. All posters, oral presentations, and publications must contain appropriate acknowledgement of SIR Foundation's support.