



Research Resident/Fellow Grant

Policies and Procedures

Purpose

To provide young investigators an opportunity to gain further insight into scientific investigation and to gain competence in research techniques and methods in anticipation of establishing a career in academic radiologic science. Recipients will devote a minimum of 50% of their time in the approved research project under the guidance of a scientific advisor.

Nature of Projects

- Any area of research related to the radiologic sciences, from hypothesis-driven basic science and clinical investigations to topics such as drug, device, and therapy development; comparative effectiveness, evidence-based radiology, ethics and professionalism, quality improvement, clinical practice efficiency, and imaging informatics.
- Applications should describe the unique nature of the research effort independent of existing research efforts, and should have well-defined goals for the funding period of the grant. Participation of the recipient in established funded research is encouraged, but the responsibility and project of the recipient should be clearly described in the application.
- Projects focused on advancing imaging science, developing or evaluating medical imaging technology, or making innovative use of imaging science to answer important biologic or clinical questions are encouraged.
- This program is not intended to support those whose primary aim is to obtain practical experience in clinical radiology.
- This program is not intended to fund PhD post-doc projects.

Amount

\$30,000 United States Dollars (USD) for a 1-year Research Resident project or \$50,000 USD for a 1-year Research Fellow project. Residents may opt for a 6-month, full-time research project.

- See eligibility criteria for restrictions on use of funds.
- The RSNA Research & Education Foundation does not pay institutional indirect costs or overhead costs.
- Travel expenses for the RSNA Scientific Assembly and Annual Meeting may not be paid by this grant.
- Unexpended funds must be returned to the Foundation.

Payment Schedule

Research Resident/Fellow Grants typically run July 1 – June 30. Payment schedules will be adjusted accordingly for residents who opt for a 6-month, full-time project. Payments will be made to the sponsoring institution in monthly installments. Ten percent (10%) of the total grant award will be withheld by the Foundation, to be released only upon receipt of an acceptable grant final report within 6 months of the due date.

Deadline for Application

Applications must be completed online and submitted with scanned signature page by end of day **January 15**. Applicants may apply 6 months or 18 months before the scheduled start date. If the deadline date falls on a weekend or holiday, the deadline will be extended to the next business day. Applications will not be accepted after the deadline date. Applications that are not complete, do not comply with the instructions, or do not have properly executed signatures, will not be reviewed. See the Foundation's Website for details, RSNA.org/foundation.

Eligibility

- Applicant must be an RSNA Member (at any level) at the time of application. If the applicant's membership category is Member-in-Training or any other non-dues paying category, the scientific advisor or one of the co-investigators must be a dues-paying member.
- Applicants within North American educational institutions must be residents or fellows in a department of radiology, radiation oncology or nuclear medicine at the time of application.
 - **Resident Grant:** Applicant must have completed the internship year (PGY-1) and at least 6-months of specialty training in the radiologic sciences (PGY-2).
 - **Fellow Grant:** Applicant should be in the last year of, or have completed, the prescribed residency training. If awarded, recipient must be in a fellowship position during the period of grant support.
 - Applicant must be certified by the American Board of Radiology (ABR), or on track for certification. See the American Board of Radiology Website for details, TheABR.org.
 - Funds may be used for salary and/or non-personnel research expenses.
- Applicants from outside North America must already be accepted into a one- or two-year Fellowship position at a North American education institution at the time of the grant application. Candidates may apply for the grant before arriving at the North American institution if documentation of the accepted fellowship is provided.

- Applicant must be in the last year of, or have completed, the prescribed residency training.
- Applicant must be certified, or on track for certification, by the radiology board in their home country.
- The one-year research project must be completed while the recipient is at the North American institution.
- R&E Foundation funds can only be used for non-stipend expenses associated with the proposed research.
- Applicant must not have been principal investigator on external/extramural grant/contract amounts totaling more than \$60,000 in a single year. The restriction on prior funding includes support from single or combined grants or contracts from any source including government, private or industrial/commercial sources.
- Applicant/co-principal investigator(s) must not be agents of any for-profit, commercial company in the radiologic sciences.
- Applicant may not submit more than one research or education grant application to the RSNA R&E Foundation per year.
- Recipients may not have concurrent RSNA grants.
- Supplementation of funding from other grant sources must be approved by Foundation staff if not described in the original research plan. Awards from other sources may be approved by Foundation staff if the investigator submits a satisfactory plan to address any budgetary overlap.

Selection Criteria/Review Process

A study section consisting of physicians and scientists with expertise in the areas and topics of each grant will review the application for scientific merit and appropriateness for funding. Final decisions will be subject to the approval of the Board of Trustees of the Research & Education Foundation. Nominees will be notified of the outcome of their applications by e-mail no later than May 15.

The following guidelines will be applied in the review process:

Research Plan: Evaluate the proposed research project as suitable for a resident or fellow in training. If the research is part of a larger effort in an established lab, is the project for which the resident or fellow is responsible clearly defined? An evaluation should include, but is not limited to the following criteria:

- **Significance and Innovation:** Does the research address an important and relevant problem in which imaging may play an important role? What is the likely impact on clinical care or advancing radiologic science if successful? Is the research to be considered innovative? Innovation and significance are important parameters, but not to the same degree as might be expected for a Seed or Scholar Grant.
- **Approach:** Is the hypothesis clear and well developed? Are the experiments well designed and appropriate to test the hypothesis? Is the proposed statistical analysis of the data appropriate for the study design? Is there a reasonable chance of completion within the time frame of the grant? Is the budget realistic for the research proposed? Proposals that are well beyond the expectations of a resident or fellow, and cannot be completed in the timeline of the proposal and grant period, should be discouraged. Is there a suitable plan for the protection of human subjects as well as does the investigator address issues related to inclusion based on gender, minorities and children?

Applicant and Advisors: Evaluate the suitability of the applicant as it relates to the proposed research. Will this experience enhance the applicant's investigative or educational skills? Will the experience increase the likelihood that the resident candidate will pursue an academic career? Is the time commitment realistic? Has the applicant sought out suitable experienced sponsors or advisors that can help them through the process? Does the scientific sponsor/advisor have background knowledge and experience related to the proposed project, with evidence of ability and commitment to mentoring?

Facilities: Evaluate the commitment of the institution, the department and individual research labs, if applicable, to provide adequate support for the applicant. Is appropriate space and equipment available? Are the support faculties such as computer services and statistical assistance adequate?

CONDITIONS OF THE RSNA RESEARCH RESIDENT/FELLOW GRANT

1. Commercial Sponsorship

A portion of the total funds available for the RSNA R&E Foundation's grant programs is in the form of endowments from commercial companies or other sources; some recipients may have their grant named after a company. Grant awards are named only after funding decisions have been made. Company named awards do not imply commercial endorsement of the grant recipient, the research or the institution. Similarly, named awards do not imply endorsement of the commercial sponsor by the grant recipient or the institution. An institution's inability to accept endowed awards will not preclude the award.

2. Publicity of Award Recipients

The R&E Foundation will issue a press release and publicize the award in its print and electronic properties. Information submitted in the application and subsequent reports including the recipient's name, institution, likeness, project title and abstract can be utilized in the promotion of the award. Other external promotional opportunities are at the discretion of the individual recipient.

3. Progress Reports

Recipients must submit an interim report six months after the start of the project. A final report must be submitted to the Foundation's address within 60 days after completion of the project. Reports are distributed to the Foundation's Board of Trustees and cosponsoring entity if applicable, to determine the effectiveness and success of the program. Failure to comply with the final report requirement may negatively affect the home institution department's eligibility to receive future funds from the RSNA R&E Foundation.

Interim and final reports are to be submitted electronically (MS-Word) by email attachment with CC to the department chair and scientific advisor(s), if applicable. Complete reports must address each of the following:

Interim Report:

1. Provide a short summary statement of the project status.
2. Restate the specific aims/goals of your research plan and indicate the progress made toward each aim/goal. **Include all supporting data as an appendix.**
3. Indicate any deviations you have made from the original research plan and justify these changes.
4. Indicate the expenditures you have made to date and how they relate to the project.
5. Indicate any problems or delays that you have encountered; for example, problems in obtaining protected time to do research, slow patient accrual, etc.

Final Report:

1. Prepare an expanded abstract consisting of 1500 – 2000 words divided into Purpose, Methods, Results and Conclusions. Include appropriate tables, figures and references.
2. Restate the specific aims/goals of your research plan and indicate the progress made toward each aim/goal. **Include all supporting data as an appendix.**
3. Indicate any deviations you have made from the original research plan and justify these changes. If you did not reach one or more of your initial goals, explain why.
4. Indicate the expenditures you have made to date and how they relate to the project.
5. Indicate any problems or delays that you have encountered; for example, problems in obtaining protected time to do research, slow patient accrual in the study, etc.
6. Indicate if the results from your studies are being prepared for publication or will be prepared for publication within the next six months.
7. Indicate if the results from your studies will be used as preliminary data in a grant application to another granting agency.
8. Indicate the clinical significance and future clinical impact of the results of your study.
9. Indicate the strengths and weaknesses of the grant program in which you participated.
10. Indicate the influence or role that the grant from the RSNA Research & Education Foundation had on your career or will likely have in the future.

4. Annual Survey

Recipients agree to participate in an annual survey that will help the Foundation's Board of Trustees track current contact information, additional grant monies received from other sources, scientific publications, and career advancements.

5. Publications

Scientific and educational manuscripts resulting from R&E Foundation-funded projects must be submitted first to the RSNA Scientific Assembly and Annual Meeting to be considered for presentation, and/or to *Radiology*, *RadioGraphics*, *Medical Physics*, or the *International Journal of Radiation Oncology, Biology and Physics* to be considered for publication (right of first refusal). Manuscripts that are not accepted for publication in one of the four listed journals may be submitted to the journal(s) of the authors' choice. Authors who wish to bypass the right of first refusal process must receive written permission from the Grant Program Committee/Board of Trustees. One reprint of each publication produced as a result of RSNA R&E Foundation-funded work should be sent to the Foundation's address for distribution to the Trustees. All posters, publications, and oral presentations of R&E Foundation-funded projects must contain appropriate acknowledgment of the Foundation's support and sponsoring commercial company (if applicable).

6. Extension

A no-cost extension of the terms of this grant may be requested to extend the final budget period up to 12 months beyond the original ending date. Approval of an extension does not include the awarding of additional funds. A request for an extension along with a progress report must be made in writing to the chair of the Grant Program Committee at the Foundation's address before the expiration of the original grant period. The request must state the reason(s) for the extension, length of the extension requested, and an explanation of how the reason(s) for the delay has been rectified. Requests must be co-signed by the department chair. Interim reports must be submitted every six months during the extension period. Other requests for changes to the terms of an award should be addressed to the chair of the Grant Program Committee with similar documentation and institutional approvals.

7. Modification or Termination of Support

The Trustees reserve the right to modify or terminate the amount of any funds granted under the terms of the Research Resident/Fellow Grant program. If the support level has to be modified by the RNSA R&E Foundation Board of Trustees for any reason, the grant recipient will be notified in writing at least 90 days prior, and the investigator will have the option to modify the research plan or terminate the grant.



Research Resident/Fellow Grant

Application Instructions and Guidelines

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Section I: Summary of Proposed Research Plan

This page, when separated from the rest of the application, should serve as a succinct and accurate description of the proposed plan. The abstract should include the long-term goals of the proposed work and the methods to be used. Data collection and analysis should be summarized along with the potential clinical significance and future clinical impact of this work. Include relevance to post-residency/fellowship appointment if applicable. Abstract not to exceed 300 words.

Applying for: Resident Grant / Fellow Grant (Select one)

- A. Resubmission Information:** Is this application based on a proposal submitted to the RSNA R&E Foundation within the past two years? If yes, please use the following link to provide brief details of the previous submission, including a summary of the reviewer comments and how each issue has been addressed in this proposal.
- B. Title**
- C. Abstract**

Section II: Investigator(s)

A. Applicant (Principal Investigator) Data

- Institution
- Department
- Country of Citizenship
- If not a North American Citizen, do you have permanent resident status in a North American country? Specify
- Are you currently certified by the American Board of Radiology (ABR), or equivalent?
If yes, specify the name of the certifying agency and specialty (Diagnostic Radiology Radiation Oncology Medical Physics)
If no, specify your eligibility
- Key Training Dates (Degrees, Completion of residency and fellowship training)
- Current year of training, or faculty position/rank
- Grants received, Include all sources of funding, the amount and percent effort for each
- Number of peer-reviewed journal articles
- Time allocated to the proposed project, and to other duties. Specify percent and time frame.
- Contact Information (Auto fill from RSNA membership database)

B. Biosketch

NIH-style, limited to 5 pages

C. Priority Statement:

Describe your area of professional/scientific interest(s) and long-term career goals and objectives. Briefly describe how the proposed plan relates to the applicant's priorities and how these priorities are served at the host institution. Not to exceed 1000 words.

D. Scientific Advisor

To be completed by the scientific advisor/sponsor

- Name, degrees, title/faculty rank
- Percent of time that will be devoted to the proposed research project and brief description of the advisor's role as mentor for the applicant (A Sponsor responsible for the trainee and the project who also acts as an Advisor is required for this grant application. The advisor/sponsor will advise the resident/fellow on all aspects of the project, and will be responsible for the resident/fellow in ensuring completion of the project in a timely fashion, the content and interpretation of the project, and any publication or presentation of the information. If the resident/fellow project is to be part of a larger

established research effort of the sponsor, the supervising advisor/sponsor should describe the role of the resident/fellow in the overall project and how their independence will be established from previous or existing efforts). Not to exceed 1000 words.

E. Relationship of Proposed Project to Existing Research Programs

To be completed by the scientific advisor/sponsor

Describe the extent to which the applicant was responsible for developing and writing the research proposal. Relationship and overlap with existing research programs should be specified in detail. Not to exceed 500 words.

F. Other Investigators (if any)

Other investigators/scientific advisors/consultants who will contribute significantly to the project should be listed. Include a description of the role they will play in the proposed research project.

Section III - Research Plan

A. Detailed Research Plan

Not to exceed 5 pages. Use 0.5" margins and size 11 Arial font. Additional pages may be included for the bibliography.

Specific Aims

List the broad, long-term objectives and the goal of the specific 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. One/half page is recommended.

Background and Significance

Briefly sketch the background leading to the present application, critically evaluate existing knowledge, and specifically identify the gaps that the project is intended to fill. State concisely the importance and health relevance of the research described in this application by relating the specific aims to the broad, long-term objectives. If the aims of the application are achieved, state how scientific knowledge or clinical practice will be advanced. Describe the effect of these studies on the concepts, methods, technologies, treatments, services or preventative interventions that drive this field.

Preliminary Studies

For new applications, use this section to provide an account of the PI's preliminary studies pertinent to this application. This information will also help to establish the experience and competence of the investigator to pursue the proposed project. Preliminary data is welcome but not required for Resident, Fellow, Scholar and Seed Grant applications. If there is no preliminary data, provide supporting evidence in the existing literature.

Research Design and Methods

Describe the research design conceptual or clinical framework, procedures, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted. **Describe the applicant's specific roles in each phase of the project.** Describe any new methodology and its advantage over existing methodologies. Describe any novel concepts, approaches, tools, or technologies for the proposed studies. Discuss the potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the aims.

Timeline of events

As part of this section, provide a tentative sequence or timetable for the project.

Bibliography

A. **Research Profile:** Complete each section as indicated. The information you enter will be used to help match your proposal with study section members that have compatible interests, expertise and experience.

- Clinical, Translational, or Basic Science? Select Clinical Translational Basic Science
- Discipline: Select Radiology Radiation Oncology Medical Physics If Physics, specify therapeutic, diagnostic, or nuclear:
Select Therapeutic Diagnostic Nuclear
- Modalities/Techniques:
- Procedures:
- Areas/Systems:
- Structures:
- Topics:

Please select up to *one* keyword (primary focus) within each category

Anatomic: Brain; Breast; Cardiac; Chest; Fetal; Gastrointestinal; Genitourinary; Head and Neck; Musculoskeletal; Spine; Vascular

Modalities: Brachytherapy; CT; Elastography; Gamma knife/Radiosurgery; IMRT/IGRT/SBRT; Magnetoencephalography; MRI; fMRI; MR spectroscopy; Nuclear medicine; Optical imaging; Proton therapy; Radiography; U/S

Techniques/Topics: Animal models; Computational biology; Drug/Device development; Genetics/Genomics

Information Technology; Interventional Oncology; Molecular biology; Nanotechnology; Physics
Quantitative Imaging; Radiation Biology; Stem cells; Theranostics; Vascular/interventional radiology

Research Type: Clinical research; Laboratory research; Outcomes research; Quality assurance/improvement;
Research Synthesis/Meta-analysis; Technology Assessment; Translational research

B. Research Assurances

Will the project involve any of the following?

- human subjects (Y/N)
- vertebrate animals (Y/N)
- ionizing radiation/radioactive isotopes (Y/N)
- other, requiring institutional research assurance approval (recombinant DNA, etc) (Y/N)

Funded applicants will be required to submit appropriate forms before grant funds are released.

C. Location of Study:

In some cases, the applicant may be applying for a position at an institution other than his/her current institution. Indicate the location where the proposed research project is to take place (host institution). Information entered into the grant application from this point forward should refer to the host institution.

D. Resources and Environment:

Describe major equipment, laboratory, clinical, animal, office/computer, support services, education resources, and other facilities (simulation centers, survey cores, etc) that will be available for this project.

Section IV - Budget

A. Detailed Budget

The Research Resident/Fellow Grant may be used as salary support and/or non-personnel research costs. Even if the applicant plans to use the funds only for salary support, a complete budget will assist the study section reviewers in determining the project's scope and feasibility. The budget should be a complete and detailed listing of the costs associated with the proposed program, including equipment, supplies, materials and personnel (percentage of time or hours per week on planned activities, but not salary amounts). All direct costs and equipment costs should be included. The RSNA Research & Education Foundation does not pay institutional overhead costs or indirect costs. Travel expenses for the RSNA Scientific Assembly and Annual Meeting may not be paid for by this grant.

B. Other Sources of Support (pending and received)

List all other sources of support applied for or received for this project. Include the applicant's name, the amount, and the date of receipt. Their contributions must be clearly indicated as in-kind, restricted or unrestricted support. Indicate the compatibility of such additional sources of support with the eligibility criteria and terms. (Supplementation of funding from other grant sources must be approved by Foundation staff if not described in the original research plan. Awards from other sources may be approved by Foundation staff if the investigator submits a satisfactory plan to address any budgetary overlap.)

C. Award Payment Information

To facilitate fund disbursement if the grant is approved, please supply the payee information and mailing address - this information is available through the institution's research administration office. The institution will serve as the fiscal agent.

- Grant checks payable to:
- Grant checks sent to: Include contact name, mailing address, phone number, and e-mail.

Section V: Letters

Letters of recommendation/support are not required or accepted; however, if equipment or supplies for the proposed study will be provided by a source other than the applicant's department (such as a commercial company), include a letter of intent/agreement from that source. Similarly, if the study involves significant collaboration with individuals other than the scientific advisor, include appropriate letters of agreement.

- No letter from scientific advisor or department chair
- Letters of intent should be included only from sources/collaborators outside the applicant's institution;
- Letters should be written to the grant applicant, not to RSNA
- Letters should address only the deliverables that will be contributed to the project (equipment/supplies, time/expertise, etc.)
- Letters should not include specific comments on the project or recommendations of the applicant
- Letters that do not conform to the above guidelines will be removed from the application

Section VI: Signatures

Enter the names and contact information for the department chair, scientific advisor (if applicable) and grant administrator. Download and print the completed signature page, obtain signatures, scan and upload the signed document.

Submit the Application Online

When all sections of the application have been completed and the signed signature page has been uploaded, click the "*Preview Completed Application PDF*" button, located at the top of the online grant application Table of Contents page, to view the compiled grant application. Make sure the data and uploaded documents have been formatted correctly. To submit the application, click the "*Send Completed Grant Application to RSNA*" link at the bottom of the Table of Contents page; there is no need to send a printed copy to the RSNA office.

Questions?

Scott A. Walter, MS, Assistant Director - Grant Administration
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