

Division of Pulmonary and Critical Care Medicine - Grant Application 'Toolkit'

The Division of Pulmonary and Critical Care Medicine has an active research program involving Fellows and Faculty in a variety of research tracks. The process of applying for a grant can be overwhelming at first and we provide this toolkit as a means to assist applicants and mentors with the grant application process. This toolkit focuses on mentored awards for fellows and the process of submitting the application. The intent is to minimize the distractions and obstacles to constructing the application, allowing the applicant to focus more creative energy on the science. A secondary benefit of the toolkit is to make the application process more efficient for the support staff who assist a large and diverse group of fellows and faculty.

It is in the best interest of applicants and mentors to produce the strongest application possible and for the Division to make the grant submission process as smooth as possible. This requires forethought and communication between all involved parties and this process starts with the applicant.

Once a funding opportunity is identified, immediately notify your mentor, mentoring committee, and Monica of your intent to apply, the funding source, and working title for your application.

The Division has staff available to help negotiate the application process but it is essential that you provide advance notice to be included when the grants are assigned to support staff. Potential award mechanisms should be identified up to 6 months in advance to assure that sufficient time is devoted to your application to produce the most competitive proposal possible.

Grant proposals have both scientific and administrative components. The two components have different timelines and requirements. **Word to the Wise:** *review the application guidelines to ensure eligibility (very important), unanticipated restrictions (e.g., salary caps, resources, and institutional limits) and anticipate steps necessary to complete proposals on time.* Learn what is required such as letter from the Chairman, animal protocol approvals, IRB approvals, transcripts, etc. Pass this information on to Monica as early as possible. Also look for tips on the focus, emphasis, settings, and areas of interest. Grant instructions are not like electronic equipment instructions: you need to **read** grant instructions.

It is essential to establish a timeline for review and completion of both scientific and administrative materials – including IACUC or IRB requirements and obtaining any original ink signatures that may be required. This timeline will be established in consultation with the administrative staff person working on your proposal. **Word to the Wise:** *Get the administrative work done as soon as possible, thus maximizing your time closer to submission to focus on the science.*

Please note that Fellows are not allowed to be named as Principal Investigators on internal award documents. Each Fellow must have a sponsor and a mentor/mentee relationship must be established in the proposal. Individuals in “acting” status may request permission to be recognized as a principal investigator. This requires a letter of request from the division head to the chair.

Draft Application: Based on the timeline established for your application, anticipate that the draft application will need to be assembled and submitted to Monica or another staffmember 3-4 weeks prior to the due date. This draft proposal is needed for routing through the various UW compliance offices and to obtain the required signatures. The science portion should be in a strong draft form and may be modified during and after this process. The administrative portion (budget, resources, title, etc) need to be in their final form.

Every application requires internal review by several UW offices – this is the process initiated with the draft (above) 3-4 weeks prior to the proposal’s due date. **Word to the Wise:** *get this done early. Be aware that your application will not be the only one being reviewed by the various review offices.*

Every proposal that is submitted to a sponsor by the Division will require review by at least three offices in addition to the Division (Department of Medicine, School of Medicine and the institution’s Office of Sponsored Programs). The actual number is determined by the proposal’s participants (including co-sponsors and collaborators). This review takes place to ensure that all appropriate assurances are in place, that the proposal is in compliance with Department, School, and Institutional guidelines, and to determine responsibility for post-award management of the grant. It is okay if the science portion of your grant is in draft form for this administrative review.

This review process is separate from the scientific review that will take place by mentors, mentoring committee members, or collaborators.

Proposals to many non-federal sponsors that include animal usage require review by the IACUC office. The IACUC office performs a side-by-side comparison of the proposal with either an approved or pending protocol so the draft science that is routed internally must have sufficient information to pass that approval process. Like the assurance reviews, the IACUC reviewers have multiple proposals to review at all times. Providing a well-prepared draft and rapidly responding to their requests will expedite their review.

Proposals to non-federal sponsors that include human subjects may require that a human subjects review application be either approved or in pending status at the time of submission. This status will depend on the sponsoring agency.

Grant proposals routinely require letters of reference, biosketches in sponsor approved formats, well-defined budget presentations, and an explanation of the

resources available for the proposed work. In addition, you may be required to prepare candidate statements, sponsor statements, institutional letters of support and transcripts to complete the administrative portion of the grant. Examples of these components are included in this toolkit.

Tips and Information

NIH applications being submitted via the grants.gov mechanism require that the scientific narrative be uploaded separately by section (specific aims, background and significance, etc). Please produce these documents using hard page breaks between each section. NOTE: If you have a half a page left in one section, you can not apply this half a page to the next section. The system typically allows you to go over the stated page limit by 1-3 pages in response to the empty space that results from these format requirements.

Once the scientific narrative is finalized, then it is easy to convert the document to a PDF file and extract pages to create separate documents to upload. If you do not know how to do this or are in need of the appropriate software, please take care of this now. Sponsoring agencies are rapidly moving toward electronic submission processes and these skills are necessary for the submission process.

Emphasize significant points repeatedly and in several places within the application. Emphasize significant points repeatedly and in several places within the application. Opportunities include the candidate statement, sponsor statement, and letters of reference or support. It is important that these statements are all consistent with each other.

Identify potential benefits to the sponsoring agency (how does your application help fulfill their mission?). Acknowledge and address perceived risks or shortcomings.

Assume that your grant is being reviewed by a very tired study section member on a red eye flight to Washington DC. Write clearly and succinctly. Use topic sentences and summary sentences to tell the reader what each paragraph has to do with your grant proposal. Leave enough white space on the page to minimize eye strain.

In your biosketch and statements, clearly differentiate between post-doctoral clinical and research training in fellowship applications to avoid being considered 'too senior' for an award. Explicitly state the number of years 'in the lab'.

Highlight the strengths of the PCCM training program:

- 65% of program members remain in academics.
- The program has three directed training tracks (Outcomes Research, Cell and Molecular Biology, Integrative Physiology). These tracks provide

exposure to a wide variety of science while supporting and complementing each other.

- The program has been awarded a grant to support and promote translational research.
- PCCM maintains an active Research Works in Progress conference schedule that is used to develop and critique scientific questions and investigation through a community of fellows and faculty.
- The training program establishes mentoring committees that are akin to PhD thesis committees for each trainee. The committees meet twice a year (at a minimum) to assess and foster each fellow's scientific progress and career goals. A written report of the committee's discussion is retained for the fellow's file.
- These committees extend beyond the formal training program to support career planning and faculty development
- The Division holds a T32 (NIH institutional training grant) that is in its 30th year of funding and is currently under the leadership of Len Hudson. We have trained over 225 fellows through this funding mechanism.

The University of Washington provides an excellent training environment due to its extensive research base – this diversity and breadth creates amazing opportunities to enhance existing programs, increase potential collaborations, and secure the support necessary to make an individual's application a success.

For fiscal year 2005, the UW Department of Medicine ranked fourth among all U.S. Departments of Medicine in number of awards. The UW School of Medicine ranked sixth in total amount of awards from NIH and the University of Washington received more federal support than any other state school and ranked third among all institutions.

PCCM Training Tracks

Every fellow accepted into the PCCM training program selects a primary training track. Combinations of these tracks support the conduct of translational research. The 3 primary tracks are designed as:

- Outcomes Research
- Research in Cell and Molecular Biology
- Integrative Physiology Research

Trainees may also choose to formally participate in the Translational Research Training Program (TRTP) but must select a primary and a secondary training track. The TRTP is funded as a part of the Division's Acute Lung Injury SCCOR grant.

Outcomes Research

Track co-directors: J. Randall Curtis, MD MPH, Christopher H. Goss, MD, MSc, and David Au, MD, MSc

Established in 1995, this track was the first such program in pulmonary and critical care medicine and remains a national leader. This track has trained over 25 graduates during its relatively short tenure and more than half of these graduates remain in academic medicine. The track has published its methods for training clinical researchers in the peer-reviewed literature: Curtis JR, Rubenfeld GD, Hudson LD. Training pulmonary and critical care physicians in outcomes research: Should We Take the Challenge? **American Journal of Respiratory and Critical Care Medicine** 1998; 157:1012-5.

Research in Cell and Molecular Biology

Track co-directors: Bill Parks, PhD and Lynn Schnapp, MD

Established in 1995, research in this track has experienced tremendous success with a variety of funding sponsors.

The Division's involvement in this area continues to expand with the Center for Lung Biology established under Bill Parks's leadership. The Center is located at the School of Medicine's South Lake Union campus.

Integrative Physiology Research

Directors: Robb Glenny, MD and Bill Altemeier, MD

Integrative Physiology track researchers use animal models to study respiratory and cardiovascular physiology from the cellular to the whole animal level. The Integrative Physiology track also has a strong interest in human based physiology research.

This track is the cornerstone of the Division's research program established by John Butler, MD in 1964. The research in this track has remained focused on pulmonary and cardiovascular physiology but has shifted from primarily large animal models to smaller rodent models to take advantage of genetically adapted mice and molecular reagents commercially available for smaller animals. Large animal models are still in use to confirm hypotheses in mammals with physiology more closely related to humans.

Letters of reference or support

Identify letter writers in advance and inquire whether they are able to provide a letter in the needed timeframe.

Provide either a draft letter or the following information to the letter writer:

- Name of proposal, copy of specific aims/hypotheses for review
- Name of sponsor and specific grant application information
- Address information for the letter
- Any specific information that should be highlighted in the letter

Basic format for draft letter or reference/support:

Paragraph 1: Introduction

Open with a strong statement of support.

Characterize the individual being recommended and the relationship with the writer. Describe how has the writer interacted with the applicant.

Paragraph 2:

Review/summary of performance in the program to date (training/training and residency at the UW/training and faculty appointment period)

Paragraph 3:

Describe the significance of the proposed research

Paragraph 4:

Document the strength of environment/working relationships with emphasis on mentor as appropriate to application

Paragraph 5:

End with a restatement of the writer's support for the applicant and their proposal. Tie the applicant's proposal to the mission of the granting agency.

Closing line/signature

Institutional letters of support

These are signed by the Department Chair and require Division review prior to signature. See examples in this toolkit.

This letter should address issues related to the research environment such as the University of Washington's strength as a research institution. In addition, address the Division's premier training program and track record for producing academic physicians. This letter should also identify and laud the mentor and his/her research program.

Provide a draft to Monica 4 weeks prior to the grant deadline along with content guidelines/requirements if necessary
Monica will obtain the Chair's signature after Division review.

CHECKLIST

- Title
- Signatures
- IACUC or IRB approvals
- Scientific Abstract
- Lay Abstract (if required)
- Key personnel identified
- Budget
- Budget justification
- Subcontract components (if applicable)
- Biosketch – applicant
- Biosketch – other
- Other support (if required)
- Resources page
- Candidate statement
- Sponsor statement
- Sponsor training history (if required)
- Institutional Letter of Support
- Checklist
- Letters of Reference
- Letters of Support
- Appendix materials

GRANT DEADLINES

Month	Day	Sponsor
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FOR NIH DUE DATES – PLEASE REFER TO SEPARATE DOCUMENT

January	Mid Early	American Heart Association American Thoracic Society Fellowship
March	Last Monday 31st	Royalty Research Fund Firland Foundation
April - May	Various	Chest Foundation
June	First Wednesday	CF Foundation Research
July	Mid Month	American Heart Association
September	Early First Wednesday 1st Last Monday	American Lung Association CF Foundation Research SCCM Royalty Research Fund
October	15th First Wednesday 15th	Parker B Francis Fellowship CF Foundation Fellowship American Cancer Society

Additional funding opportunities are announced when received

URLS of interest:

NIH <http://www.nih.gov/>

NHLBI <http://www.nhlbi.nih.gov/index.htm>

NIH Forms and Applications: <http://grants1.nih.gov/grants/forms.htm#training>

American Heart

<http://www.americanheart.org/presenter.jhtml?identifier=1200000>

American Lung Association

<http://www.lungusa.org/site/pp.asp?c=dvLUK9O0E&b=22542>

Cystic Fibrosis Foundation <http://www.cff.org/home/>

Burroughs Wellcome Fund <http://www.bwfund.org/>

Royalty Research Fund <http://www.washington.edu/research/rff.html>

Chest Foundation <http://www.chestfoundation.org/>

SCCM <http://www.sccm.org/sccm>

Proposal Central <https://v2.ramscompany.com/>

Grants.gov <http://www.grants.gov/>

Parker B. Francis Fellowship <http://www.francisfellowships.org/>

Firland Foundation <http://www.firland.org/foundation/>

American Cancer Society <http://www.cancer.org/docroot/home/index.asp>