



**Duke** Medicine

Pulmonary, Allergy and Critical Care Medicine

**Pulmonary ReSearch to Promote, Engage and  
Retain Academic Researchers (PROSPER)**

**T32 Fellow-Investigator Handbook**

# T32 Postdoctoral Training Program Fellows Handbook

## TABLE OF CONTENTS

	<i>Page Numbers</i>
1. <a href="#">Introduction</a>	<u>3</u>
2. <a href="#">Reminders of requirements for appointment</a>	<u>3</u>
3. <a href="#">Payback Requirements for Postdoctoral Trainees</a>	<u>3</u>
4. <a href="#">Program Contacts / Administrative Leadership Team:</a>	<u>4</u>
5. <a href="#">Program Requirements and Milestones:</a>	<u>4</u>
6. <a href="#">Program Benefits</a>	<u>5</u>
7. <a href="#">Start-up Activities</a>	<u>6</u>
8. <a href="#">Mentoring Meetings</a>	<u>7</u>
9. <a href="#">Progress Reports</a>	<u>8</u>
10. <a href="#">Research</a>	<u>8</u>
11. <a href="#">Didactics, Journal Clubs, and Scientific Communication</a>	<u>8</u>
12. <a href="#">Career Development Skills</a>	<u>9</u>
13. <a href="#">Academic Scholarship</a>	<u>10</u>
14. <a href="#">Activities During Protected Research Time</a>	<u>11</u>
15. <a href="#">Program Feedback:</a>	<u>11</u>
16. <a href="#">Acknowledgment of Duke PROSPER</a>	<u>12</u>
17. <a href="#">Resources and Links</a>	<u>12</u>

## 1. Introduction

The primary goal of the program is to train a new generation of postdoctoral MD and PhD scientists to become future leaders in the basic, translational and clinical research, clinical trials and health service research of major lung and lung-associated conditions.

Congratulations on being selected for appointment to this training grant program. The Division is committed to ensuring your training grant experience is aligned with your future academic and professional goals. This handbook provides documentation on training grant requirements and expectations as well as resources that you might find helpful as a postdoctoral fellow. Please review the contents and refer to this handbook often during your training grant appointment.

If there are any questions about the information and requirements described in this handbook, please contact any of the individuals listed on the first page. If you have suggestions for improvements to the handbook, you are strongly encouraged to send them to Erika Ratcliffe, PROSPER Program Coordinator for the Division of Pulmonary, Allergy and Critical Care Medicine (PACCM).

## 2. Reminders of requirements for appointment

The trainee “must be citizen or non-citizen national of the United States or have been lawfully admitted for permanent residence at the time of appointment.” There are no exceptions to this requirement.

A trainee cannot be supported on an NIH research grant (or other federal funds) at the same time he/she is receiving a stipend from a T32 grant.

The post-doctoral fellow must sign a Payback Agreement upon their initial appointment to the T32 grant. Payback is required under certain situations (see additional details below). However, if the post-doctoral trainee is funded for two full years, the second year of research training under the T32 grant satisfies the payback requirement. The appointed post-doctoral fellow should carefully review the payback requirements before signing the Payback Agreement. A payback agreement is not required for reappointment.

## 3. Payback Requirements for Postdoctoral Trainees

The Kirschstein-NRSA legislation requires some recipients of support (post-doctoral fellows and trainees) to pay back the Federal government by engaging in health-related research, research training, health-related teaching, and/or other relevant health-related activities.

For individuals receiving postdoctoral support under individual fellowships or institutional research training grants, a payback obligation is incurred for the first 12 months of Kirschstein-NRSA support. However, the 13th and subsequent months of postdoctoral NRSA-supported research training serves to pay back this obligation month by month. A Payback Agreement (PHS6031) is required, but only for the initial 12-month postdoctoral support period

Once a Termination Notice has been submitted and accepted, the NIH awarding Institute or Center (IC) determines if a payback obligation exists. When a trainee or fellow must pay back, the Termination Notice and related documents are forwarded to the NIH Kirschstein-NRSA Payback Service Center (PSC). PSC personnel are NIH's experts in Kirschstein-NRSA payback requirements. The PSC administers the payback activities of all of the NIH ICs. The authorities related to payback normally delegated to the IC are delegated to the Chief, Kirschstein-NRSAPSC. The PSC retains all records until an obligation is satisfied, and then transfers closed records to the Federal Records Center.

Most Kirschstein-NRSA recipients eventually fulfill their payback obligation by engaging in activities that are determined to be acceptable service. Some recipients fulfill their obligation via financial payback. On rare occasions, the payback obligation is waived.

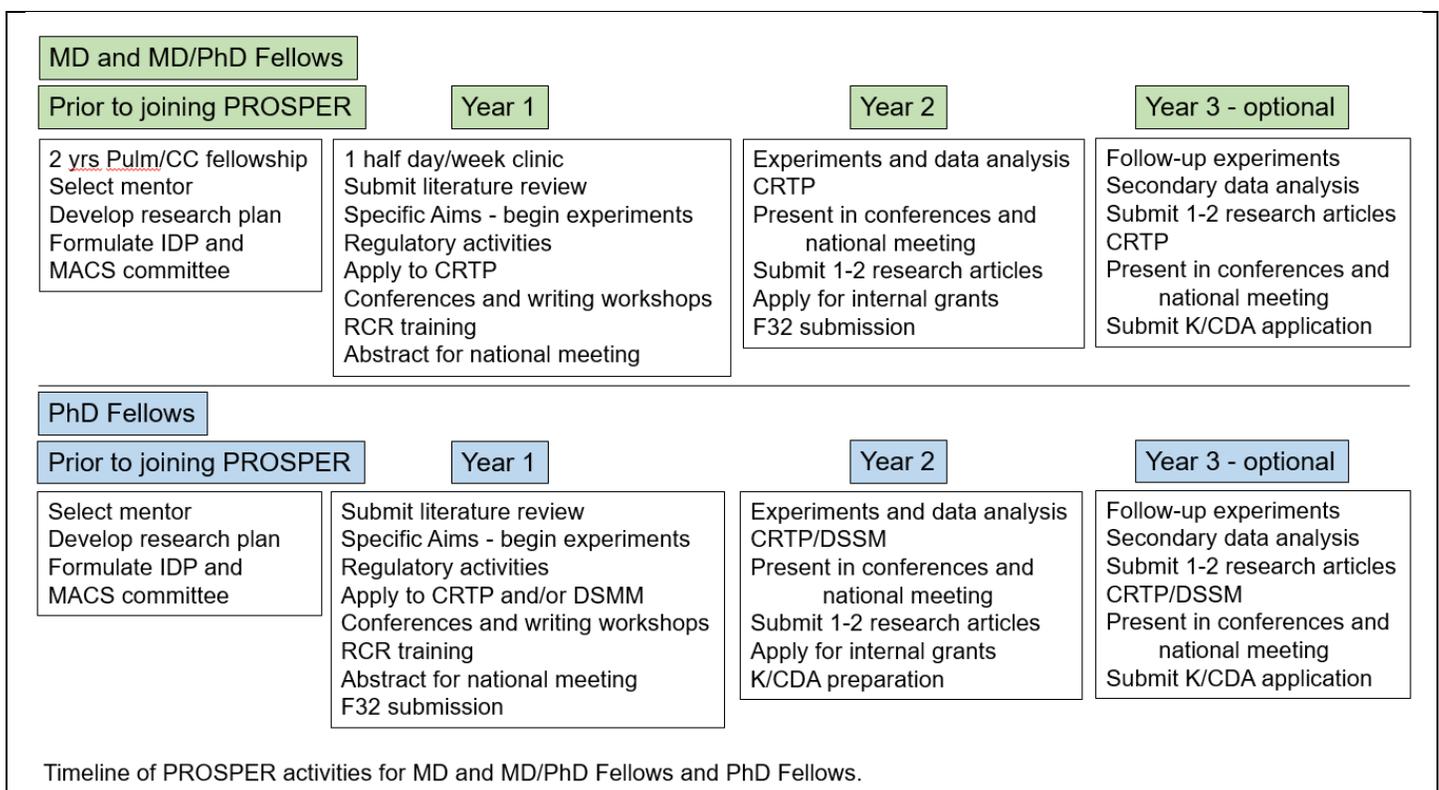
#### 4. Program Contacts / Administrative Leadership Team:

Department	Program Directors	Program Deputy Director	Program Coordination
Department of Medicine	Patty J. Lee, MD (contact) <a href="mailto:patty.lee@duke.edu">patty.lee@duke.edu</a>  Scott Palmer, MD, MHS <a href="mailto:scott.palmer@duke.edu">scott.palmer@duke.edu</a>	Jennifer Ingram, PhD <a href="mailto:jennifer.ingram@duke.edu">jennifer.ingram@duke.edu</a>	Erika Ratcliffe <a href="mailto:erika.ratcliffe@duke.edu">erika.ratcliffe@duke.edu</a>
Department of Medicine Research Administration Support Resource (DOMRA)	Darcy Lewis, Grants and Contracts Administrator (GCA) <a href="mailto:darcy.lewis@duke.edu">darcy.lewis@duke.edu</a>		

#### 5. Program Requirements and Milestones:

Activity/Milestone	Deadline
<b>Start-up Activities</b>	
Application to T32 program	Rolling calendar basis
Acceptance to T32 program	Rolling calendar basis
Establishment of Mentor, Advisor, Coach, Sponsor (MACS) Committee	1 month after program acceptance
Development of Individual Development Plan (IDP)	2 months after program acceptance
Development of research plan	2 months after program acceptance
Meet with the Director of the Duke Office of Post-doctoral Services (PhD fellows)	Within 1 <sup>st</sup> month of acceptance to program
<b>Mentoring Meetings</b>	
First Mentor, Advisor, Coach, Sponsor (MACS) meeting* <i>*The MACS will meet bi-annually for the remainder of fellowship</i>	Within 2 months of acceptance to program
First Internal Advisory Board (IAB) Meeting* <i>*The IAB will meet bi-annually for the remainder of fellowship</i>	Bi-annually
External Advisory Board (EAB) Meeting* <i>*The EAB will meet each year for the remainder of fellowship</i>	Annually
<b>Year 1</b>	
Begin attending Subspecialty Clinic	PGY2-PGY4
Protected research time	18-24 months during PGY2-PGY4
Submit literature Review	Within 6 months of program acceptance
Begin attending didactic seminar series and journal clubs	Upon acceptance to program
Begin attending career development seminars, Conferences, Retreats, Programs	Upon acceptance to program
Responsible Conduct in Research (RCR) Training	Upon acceptance to program
Obtain Regulatory Approval - begin experiments	Within 6 months of program acceptance
Register and Attend: Clinical Research Training Program (CRTP) / Duke Scholars in Molecular Medicine Program (DSMM)	To be determined in conjunction with MACS
Training in grant writing	First year of program
Abstract for National Meeting	Within first year of program
Submission of Progress Report	Annually after program acceptance
<b>Year 2</b>	
<b>Experiments &amp; Data Analysis</b>	
Attend: Clinical Research Training Program (CRTP) / Duke Scholars in Molecular Medicine Program (DSMM)	To be determined in conjunction with MACS
Presentations at local and national scientific meetings	

Submission of 1-2 peer reviewed research manuscripts	By end of second year in program
Internal application for research support	Following completion of at least 6 months of research
Submission of F32 application	To be determined in conjunction with MACS
Submission of Progress Report	Annually after program acceptance
Submission of an application for individual NRSA or institutional career development award(K/CDA)	To be determined in conjunction with MACS
<b>Year 3 (optional)</b>	
Follow-up Experiments	
Secondary Data Analysis	
Attend: Clinical Research Training Program (CRTP) / Duke Scholars in Molecular Medicine Program (DSMM)	To be determined in conjunction with MACS
Presentations at local and national scientific meetings	
Submission of 1-2 peer reviewed research manuscripts	
Submission of an application for individual NRSA or institutional career development award(K/CDA)	To be determined in conjunction with MACS
Submission of Progress Report	Annually after program acceptance



## 6. Program Benefits

### Research Support Funds:

Each Fellow-Investigator will receive a stipend, consistent with your training level, for Training Related Expenses including a stipend, trainee health insurance, laboratory supplies, textbooks, travel and other costs directly related to research by the trainee.

If justified, T32 funds may be spent on tuition or fees for individual courses or workshops. Postdoctoral trainees are encouraged to enroll in the Clinical Research Training Program (CRTP) offered by Duke University. The CRTP provides physicians, investigators and other healthcare professionals with the rigorous academic training in quantitative and methodological principles of clinical research required to excel in today's dynamic clinical

research environment. The program is designed for part-time study, which allows the trainee to integrate the program's academic training with his or her clinical training.

Funds may be requested as follows:

1. Fellow-investigator (RI) drafts preliminary budget; works with DOMRA / GCA to finalize budget and create appropriate justification (*see attached forms for budget templates*) (cc's T32 Administrative Leadership Team)
2. RI sends final budget and justification to T32 Administrative Leadership Team
3. The Co-Directors give approval (or ask for corrections); T32 Administrative Leadership Team is cc'd
4. DOMRA / GCA provides fund code and tracks expenses appropriately.

DOMRA / GCA provides monthly updates to T32 Administration Team, and RIs on burn rate and projected balance of funds.

## 7. Start-up Activities

### **Establishment of a Mentor / Advisor / Coach / Sponsor (MACS) Committee:**

During their first year of fellowship, Duke PROSPER Fellow-Investigators will establish a Mentor / Advisor / Coach / Sponsor (MACS) Committee that will provide regular assessment and feedback on their training and research. Each MACS will include:

- **Mentor:** identifies and understands the interests and skill sets of the fellow, focusing on day-to-day development of trainee's skills. Skills include scientific training, writing, protocol development, funding applications and preparing presentations. This role will be fulfilled by senior PROSPER mentors who meet weekly with fellows. Scientific co-mentors are permitted and encouraged.
- **Advisor:** provides general career direction and helps the fellow identify a specific career pathway. They also facilitate networking throughout the DOM and SOM. This role will be fulfilled by either senior or emerging PROSPER mentors who meet with fellows bi-annually.
- **Coach:** facilitates integration of work with life, to minimize risk of burnout. This role will be fulfilled by either senior or emerging PROSPER mentors that meet with fellows yearly and ad hoc.
- **Sponsor:** the PROSPER Co-Directors serve in this role and establish the basic expectations for fellows. They facilitate networking within PROSPER, and at the national level, for career opportunities. They advocate for fellows throughout the fellowship period, and may facilitate changes in mentors or advisors, if warranted. Both Co-Directors meet with fellows annually.

### **Creation of an Individual Development Plan (IDP):**

Fellow-Investigators will work with their MACSs to create individualized milestones and outcome schedules in the form of an IDP (see attached template). IDP progress will be reviewed and documented at least twice per year by the MACS.

### **Development of a research plan:**

Fellow-Investigators will identify a research project topic and research mentor, and develop a hypothesis, objective and specific aims prior to their application for appointment to the Duke PROSPER program. Fellow-Investigators will submit a written project plan to their MACS in the first year of their appointment describing their hypothesis, specific aims, and research approach.

Trainees are encouraged to complete preliminary tasks once selected into PROSPER and prior to the actual start of research training (e.g., being added to approved Internal Review Board [IRB] or Institutional Animal Care and Use Committee [IACUC] protocols, early application and acceptance into the Clinical Research Training Program (CRTP) program, as appropriate). Thus, the trainee begins with a well-designed research plan that can be formally approved by the MACS committee at the start of training and is positioned to move quickly into hands-on research.

## 8. Mentoring Meetings

### **Mentor Meetings:**

Once PROSPER training begins, trainees and their primary mentors will meet at least weekly to discuss research progress, future directions, and career plans. These meetings will focus on trainees' ability to refine research hypotheses and future directions based on ongoing results; ability to select and execute appropriate methodologies; to generate valid results and conclusions for a given research question and in accordance with field-specific best practices, and to ensure all work is achieved with the highest standards of scientific integrity.

### **MACS Meetings:**

Trainees will meet with the MACS committee at the onset of training to review the IDP and a written plan of their research project describing the hypotheses, specific aims, and analysis plan or a plan for biostatistical support. MACS committee meetings can reconvene based on each trainee's situation and need, but no less than every 6 months; each meeting will cover the trainee's scientific and career development progress, IDP and progress toward milestones.

Prior to the MACS meeting, the Fellowship Director may be invited to provide a brief email update on the Fellow Investigator's clinical performance.

During each meeting, the Fellow-Investigator will provide a 30-minute presentation describing accomplished work and future plans. The MACS committee will provide constructive feedback, review and amend the IDP as necessary, identify any challenges the trainee may face, and help find creative solutions. A written summary of the committee meeting, completed by the Fellow investigator and approved by the Primary Mentor, may be requested by the Program Coordinator in conjunction with the T32 Program Directors if it is deemed to be helpful.

### **Internal Advisory Board (IAB) Meetings:**

The IAB will meet twice annually. Each IAB meeting will be approximately 3 hours long. The first part of the meeting will provide an administrative update on the program by Drs. Palmer and Lee, including assessment of the implementation and impact of changes made during the preceding cycle, and review of success metrics of trainees. The second part of the IAB will include 15-minute slide presentations by 3 of the 6 current trainees followed by 15 minutes for discussion (1.5 hours total time for trainee presentations). The 3 trainees will present their progress, plans, and challenges regarding their research careers; the other 3 trainees and their mentors are invited to attend. These opportunities help trainees improve their scientific critical thinking skills and prepare them for presentations at scientific meetings, drafting peer reviewed publications, and grant writing. For each presenting trainee, the IAB will review the trainee's IDP, MACS committee composition, and progress toward research and career goals. Finally, during the final 30 minutes of the meeting, conducted without the presence of program directors, current trainees remain to discuss their mentorship experiences and career development needs with the IAB. The IAB will also ask for trainees' thoughts on the program's strengths and any suggestions for improvements. These conversations will be informal to facilitate open, honest, and supportive discussions among members of the IAB and trainees. The PROSPER program coordinator will be present for these meetings (with the exception of the last 30 minutes) and provide written notes to be vetted, edited, and compiled into a written report by the IAB members. This report will contain the following (1) an evaluation of changes made to the program and their impact, (2) recommendations for programmatic improvements; and (3) adequacy of mentoring and progress for each presenting trainee. The report will be provided to the Co-Directors, who will be responsible for implementing recommendations.

### **External Advisory Board (EAB) Meetings:**

The EAB will meet once annually. The senior investigators will participate in a day-long meeting similar in structure to the IAB meetings. The Co-Directors will present program structure, progress, plans, and accomplishments; the EAB will evaluate all aspects of PROSPER and recommend improvements. All 2nd-year trainees will present their research and career progress. Finally, as with the IAB, all current trainees will be invited to meet informally with the EAB to discuss their research training and mentoring without participation of the Co-Directors. As with the IAB, the PROSPER program coordinator will be present for these meetings and provide written notes to be vetted, edited, and compiled by the EAB into a written report with an evaluation of the program and recommendations for improvements. Aside from providing objective assessment of PROSPER, the EAB's

annual visit will provide our trainees additional practice with presentations, input on their next steps (e.g., K or other career development application), and networking connections with distinguished faculty outside of Duke.

## 9. Progress Reports

Documentation of progress against program requirements and milestones is required annually for inclusion in the NIH annual program reports. Timely submission of these progress reports is required in order to remain in good program standing.

## 10. Research

Each trainee develops and completes a **primary research project** as formulated in the IDP and overseen by a primary mentor and MACS committee. Candidates will work iteratively with their mentor to develop a scientifically important, technically feasible idea for research during the PROSPER training period.

It is also expected that candidates perform a thorough **literature review** of the specific research area of interest. Such literature review ensures that trainees understand and formulate the most meaningful research questions and often serves as a foundation of a review article early in the PROSPER training.

## 11. Didactics, Journal Clubs, and Scientific Communication

In conjunction with the Primary Mentor and MACS committee, each trainee will perform a **gap assessment** of scientific and research skills. Didactic instruction is then customized based on the trainee's prior experiences, degrees, and career goals.

The **Clinical Research Training Program (CRTP)** is an MHS-degree granting program offered through the School of Medicine (SOM). With the mentor, as part of the IDP, and as approved by the MACS committee, each trainee will determine whether it is appropriate to take individual courses, pursue a 1-year certificate, or complete 2 years of coursework leading to the MHS degree. Coursework is tailored to best match the needs and interests of trainees on any number of career development pathways.

The **Duke Scholars in Molecular Medicine Program (DSMM)** is a SOM-funded program that each year selects 20-25 non-clinical research trainees (PhD students, postdoctoral fellows) and matches their research interests with unmet clinical problems through submersion and experiential learning.

The Duke Office of Postdoctoral Services is approved as a remote site for the **Introduction to the Principles and Practice of Clinical Research** course offered by the NIH Clinical Center. This course is open to all Duke postdoctoral fellows. The course runs from September through March each year. The Introduction to the Principles and Practice of Clinical Research (IPPCR) course trains registrants on how to effectively and safely conduct clinical research. The course focuses on the spectrum of clinical research and the research process by highlighting biostatistical and epidemiologic methods, study design, protocol preparation, patient monitoring, quality assurance, ethical and legal issues, and much more.

### **Available Clinical and Basic Research Didactics in Pulmonary Biology and Disease.**

PROSPER trainees are encouraged to attend all series, even if they previously participated as clinical fellows. *The PhD trainees in particular benefit from added exposure to clinical pulmonary medicine and disease as they develop and refine their research questions.* These series also provide a forum for PROSPER trainees to interact.

- ***Pulmonary Research Seminar:*** This weekly didactic seminar series focuses on pulmonary physiology, basic lung biology, lung immunology, and emerging or controversial clinical topics in Pulmonary and Critical Care. Lectures are taught by many of the PROSPER mentors.
- ***Pulmonary Grand Rounds:*** This weekly didactic seminar series is a forum for Duke Pulmonary Division faculty, PROSPER mentors and fellows to share stories of how they developed a career in pulmonary medicine at Duke, give updates on research and clinical interests and their goals for the future.

- **Multi-disciplinary Chest Conference:** This weekly didactic seminar involves presentation of a clinical case by a PROSPER or pulmonary clinical fellow, discussion of case-specific radiologic and pathology findings by expert faculty, followed by a discussion of recent research reports relevant to the clinical case. PROSPER mentors participate in the group discussion.
- **Pulmonary Journal Club:** Each week, 2 PROSPER or clinical pulmonary fellows are assigned to read and critique 2 current, original papers from the literature. The fellows lead a group discussion with an expert faculty preceptor, including many of the PROSPER mentors. The emphasis is on research methodology, literature critique, rigorous study design, and limitations of data interpretation.

Trainees also are strongly encouraged to take full advantage of research learning opportunities in their **mentors' research field**. For example, a trainee in Basic Science Research Track might attend seminars offered through the Department of Cell Biology; or a trainee in the Clinical Research Track focused on epidemiology and outcomes research might attend seminars offered through the Department of Population Health.

### **Responsible Conduct in Research (RCR) Training:**

NIH trainees (including junior faculty, residents, clinical fellows, postdocs on specific training fellowships) are required to complete RCR education attending one 100-level and one 200-level RCR course every 3 years. RCR education programs that fulfill this specific NIH RCR training requirement are offered by the [Trent Center for Bioethics](#) and [Duke Office of Scientific Integrity](#). More information about this [here](#) or contact [Erika Ratcliffe](#) for more details.

- The 100 level course is an online course comprised of modules. There are several options:
  - [CITI RCR Courses](#): Instructions to sign in through “Duke RCR” and select the right course for you
  - [Duke Office of Scientific Integrity \(DOSI\)](#) - two non-clinical 100-level options
- The 200 level course is interactive, and DOSI hosts events roughly once per week on a variety of topics. There are workshops on Rigor and Reproducibility, but their topic schedule is on a bit of a rotation. You can see the upcoming workshops [here](#) (this link will always take you to the DOSI ASIST calendar of 200-level eligible events).

## **12. Career Development Skills**

Career development skills build increasing depth and breadth of knowledge of pulmonary diseases.

As trainees within PROSPER are based within the PACCM clinical department, it is our philosophy to leverage **clinical exposure** in a manner that complements and enhances the research training for both MD and PhD trainees. Therefore, clinical trainees in year 1 will **attend a subspecialty clinic** of their choosing approved by the mentor and MACS committee (optional in year 2), designed to enhance the translational relevance of their research and solidify a clinical niche that will be essential to their long-term academic career success.

*PhD trainees will also participate in targeted clinical activities by shadowing clinical PROSPER faculty and by participating in the DSMM program.* For PhD trainees, the mentor and MACS committee will ensure the clinical exposures are research-relevant and synergistic with, rather than distracting from, the primary research focus. In our previous experience, limited targeted clinical exposure for PhD trainees over the 2 years of training program can be foundational to drive long-term motivation for a research career and provide a valuable perspective on patient-oriented research.

All PROSPER trainees are expected to **attend and present at Divisional, Departmental, and Collaborative Multi-Institutional Seminars** during the academic year, where faculty, pulmonary fellows, and PROSPER trainees present ongoing research work for review and constructive evaluation. PROSPER trainees are expected to attend regularly, to present their research plans early in their 1<sup>st</sup> year of training, and to present their research data and future directions at the end of the 2<sup>nd</sup> year. By participating as a presenter, trainees obtain additional feedback and support for their research, practice their presentation skills, increase scientific understanding of pulmonary disease, and build a network of collaborators.

Trainees are also expected to attend the **DOM Monthly Research Conference**, which showcases basic, translational, and clinical research in the DOM.

PROSPER trainees are expected to attend the annual **DOM Fellows Research Retreat** for early career MD and PhD trainees. Activities at the retreat include sharing junior faculty grant success stories, and dedicated sessions on topics such as grant writing, innovation, selecting a mentor, and identifying one's mentorship needs.

All PROSPER trainees are required to attend the **Research Triangle Visiting Pulmonary Scholar Program**. This longstanding and prestigious program is sponsored by institutions involved in lung research in the Triangle area, including Duke, UNC Chapel Hill, NIEHS, North Carolina State University, and the U.S. Environmental Protection Agency, as well as East Carolina University. This forum provides exposure to a broader range of senior experts in lung research and further enhances trainees' networking. Importantly, immediately following the Visiting Scholar's presentation, trainees and junior faculty at sponsoring institutions have the opportunity to present short talks to discuss their research to the regional audience. Further, the program holds an annual symposium in which regional trainees make research poster presentations, with the top posters recognized.

Fellow-Investigators are expected to attend the **Research Careers Ahead (RCA!) seminar series**. This monthly seminar series includes topics that are highly relevant to both MD and PhD trainees, such as setting up a research team, effective scientific communication, maintaining academic scholarship, and work-life balance in academic research. Recordings are posted to the [OPSD Resource](#) page, under the Research Careers Ahead tab.

#### **Training in grant writing:**

- ***"Writing from the Readers' Perspective"*** seminar  
We also offer our trainees George D. Gopen's "***Writing from the Readers' Perspective***" seminar, which is held at Duke several times per year. Dr. Gopen is an expert on written communication and has written extensively on the *Reader Expectation Approach* to the English language. The presented ideas have changed participant writing habits, resulting in improved grant-writing and publication success.
- ***Writing Winning Grant Proposals*** and ***NIH Career Development Awards***, developed by Drs. Stephen Russell and David Morrison. These full- and half-day seminars are designed to address practical and conceptual considerations that are critical to the proposal-writing process. They instruct how to write individual awards and research grants and are designed to be of value to trainees, faculty, and administrative staff who write grants.
- All 2<sup>nd</sup>-year PROSPER trainees will participate in a 9-month ***grant writing program***, originally developed in the Department of Surgery by Dr. David Harpole. This program is now offered jointly to T32 trainees in DOM, Surgery, and Pediatrics through support from the OPSD, SOM, and the recently awarded R38 grants led by Drs. Palmer and Harpole. This program has been highly successful in supporting trainees' individual NRSA submission with a high funding rate. Our explicit expectation is for trainees to submit an individual NRSA, foundation career development award, NIH loan repayment program (LRP), or internal funding career development award after program completion.

#### **Office of Post-doctoral Services**

PhD trainees will be encouraged to meet with Ms. Molly Starback, Director of the Duke Office of Post-doctoral Services, within their first month of joining the program in order to establish a relationship with the Office and to connect with peer post-doctoral fellows working at Duke. These connections will foster transitioning to post-doctoral work at Duke, provide opportunities for research collaboration, and most importantly provide an avenue for locating research and professional development resources on campus.

### **13. Academic Scholarship**

- Each trainee is expected to present their research at twice in national meetings over the 2 years of training.

- Presentation through talks at the Duke Pulmonary Research Seminar series (at least once over the 2 years), the Triangle Visiting Pulmonary Scholar Program (at least once over the 2 years), and once per year to either IAB (typically 1<sup>st</sup> year) or EAB (typically 2<sup>nd</sup> year),
- Trainees are expected to submit at least 3 peer reviewed manuscripts.  
Trainees are encouraged to develop publications in a parallel rather than sequential approach. This often means trainees contribute to several projects in lab as co-investigators (or collaborators) to learn techniques and scientific writing, while maturing the idea that will become their primary research focus over the 2 years of training. This approach leads to growth in the number of publications as trainees progress.
- Submission of an application for individual NRSA or institutional career development award at the conclusion of the training period (see **Figure 2** for expectations).

## 14. Activities During Protected Research Time

Research mentors will meet at least weekly with their trainees to assess core research competencies and research progress.

### **Submission of an application for an external individual career award and internal Fellow grant funding:**

Each Fellow-Investigator will be required to develop an NIH style aims page in preparation for either an F32/NRSA application. The timing of the submission of these applications will be determined in conjunction with the Fellow-Investigator's research mentor and MACS. Each Fellow-Investigator will be required to apply for at least one internal grant at Duke. Fellow-Investigators will also be encouraged and aided in applying for the NIH Loan Repayment program, as applicable.

### **Participation in Scientific Meetings:**

All Duke PROSPER Fellow-Investigators will be required to apply to present at local and regional meetings, for example the annual Duke Physician-Scientist Symposium; regional chapters of sub-specialty medical societies; the Triangle Visiting Pulmonary Scholars program and local research interest-specific meetings. Additionally, each Fellow-Investigator will receive annual travel funds to present research at a national meeting either in their selected field or at the American Thoracic Society International Conference or the American College of Chest Physicians (Chest Conference).

### **Submission of research manuscripts to peer-reviewed journals:**

Each Fellow-Investigator will be expected to author at least one research manuscript and submit to a peer-reviewed journal. Plans for manuscript submission will be outlined during the first year of the program and incorporated into the IDP for each Fellow-Investigator. Each Fellow-Investigator will ensure publications are in compliance with the NIH Policy.

## 15. Program Feedback:

### **Mentor/Programming Evaluations:**

As part of the annual progress report, Fellow-Investigators will complete a mentoring and program evaluation to provide feedback about the quality and effectiveness of their primary mentor and mentoring plan, along with the overall T32 program via an evaluation tool. These evaluations must be completed in order for Fellow-Investigators to remain in good standing with the Duke PROSPER program. Additionally, Fellow-Investigators may contact any member of the Duke PROSPER leadership team to discuss their concerns about the program, their mentors, research, or other issues.

### **MACS Evaluations:**

Fellow-Investigators will receive a copy of their evaluation after each meeting (see above).

### **Other Meetings/Feedback:**

Fellow-Investigators are expected to participate in Duke University meetings and showcases throughout their appointment period. After the conclusion of their appointment, Fellow-Investigators will be periodically contacted

by Program Coordinators to gather information about career progress, scholarly activities, and updated contact information.

## 16. Acknowledgment of Duke PROSPER

Please cite the Duke PROSPER T32 support on your CVs, biosketches, abstracts, manuscripts and press releases:

*Research reported in this [publication/press release] was supported by [name of the Institute(s), Center, or other NIH offices] of the National Institutes of Health under award number [specific NIH grant number]*

Duke Program of Training in Pulmonary ReSearch to Promote, Engage and Retain Academic Researchers (PROSPER) – NHLBI (1T32HL160494)

For more information on acknowledging federal funding, please see: <https://grants.nih.gov/grants/acknow.htm>

## 17. Resources and Links

There are several excellent resources to provide fellows with the skills and knowledge they might need to succeed, both within Duke and outside of Duke. Below is a categorized list of resources that might be helpful. If there is a type of training or resource you need that is not listed, please discuss with your mentor or PROSPER leadership. If you are aware of any other excellent resources that are not listed here, please send your suggestions to Erika Ratcliffe ([erika.ratcliffe@duke.edu](mailto:erika.ratcliffe@duke.edu))

- Leadership & Management Skills

Resource	Comment	Contact/More Information
<b>At Duke</b>		
ADVANCE UP	Leadership development for Underrepresented Racial and Ethnic Faculty (UREF)	<a href="https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/advance">https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/advance</a>
ALICE Program	Leadership development for mid-career women faculty in the School of Medicine	<a href="https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/alice-program">https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/alice-program</a>
Duke Clinical Leadership Program	This program expands leadership capacity within DukeHealth	<a href="https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/duke-clinical-leadership-program">https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/duke-clinical-leadership-program</a>

Leadership Development for Researchers	This 3-part workshop is designed for junior faculty who are leading a research group.	<a href="https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/leadership-development-researchers">https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/leadership-development-researchers</a>
Professional Development Seminars	An ongoing series of lectures on topics such as finding and submitting grants, personal career planning, professional “survival” skills, and cultural/organizational dynamics at Duke.	<a href="https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/professional-development-seminars">https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/professional-development-seminars</a>
<i>Outside of Duke</i>		
Mentor Training Modules	The U of Minnesota Clinical and Translational Science Institute has developed a free, self-paced, online, professional development course designed to prepare faculty from a range of disciplines to be effective research mentors for junior faculty, post-doctoral fellows, and graduate students.	<a href="https://www.ctsi.umn.edu/education-and-training/mentoring/mentor-training">https://www.ctsi.umn.edu/education-and-training/mentoring/mentor-training</a>
National Research Mentoring Network	To provide researchers across all career stages in the biomedical, behavioral, clinical and social sciences with the evidence-based mentorship and professional development programming that emphasizes the benefits and challenges of diversity, inclusivity and culture.	<a href="https://nrmnet.net/">https://nrmnet.net/</a>

- **Obtaining Research Support**

Resource	Comment	Contact/More Information
<i>At Duke</i>		
Proposal Development Resources	Office of Campus Research Development (OCRD) can assist from early to final stages of proposal	<a href="https://ocrd.duke.edu/proposal-development">https://ocrd.duke.edu/proposal-development</a>

	development, tailoring to your proposal development needs	
Write Winning Grant Proposals	The all-day program addresses both practical and conceptual aspects that are important to the proposal-writing process.	<a href="https://researchinitiatives.duke.edu/events/write-winning-nih-grant-proposals-seminar">https://researchinitiatives.duke.edu/events/write-winning-nih-grant-proposals-seminar</a>
<b>Outside of Duke</b>		

- **Budgeting and Finances**

Resource	Comment	Contact/More Information
<b>At Duke</b>		
Finance Bootcamp	Led for the Vice Dean for Finance, a multi-part series designed to help faculty understand core finance issues with a focus on medical school economics. Goal is to help build awareness of how administrators evaluate new programs and personnel from a financial perspective and to empower faculty to be fully engaged in discussions about finances.	<a href="https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/financial-boot-camp">https://medschool.duke.edu/about-us/faculty-resources/faculty-development/our-programs/financial-boot-camp</a>
<b>Outside of Duke</b>		

- **Communication Skills**

Resource	Comment	Contact/More Information
<b>At Duke</b>		
Gopen Writing Seminars	A three-part seminar series that focuses on writing from the reader's perspective	<a href="https://medschool.duke.edu/about-us/faculty-resources/office-research-development/services/writing-workshops">https://medschool.duke.edu/about-us/faculty-resources/office-research-development/services/writing-workshops</a>

<b>Outside of Duke</b>		

For more information on acknowledging federal funding, please see: <https://grants.nih.gov/grants/acknow.htm>

- **Additional Resources and Links**

## **Duke Services**

[Office of Postdoctoral Services](#)

[Duke Office of Physician-Scientist Development](#)

[Duke Office for Research Mentoring](#)

[Grant Application Instructions, Tips, and Examples](#)

[Office for Faculty Development](#)

[Office of Research Development](#)

[Core Research Facilities](#)

[List of Duke Centers & Institutes](#)

[List of Duke Research Support Offices](#)

[Office of Regulatory Affairs and Quality](#)

[Ethics, Integrity, and Compliance](#)

[Duke Office of Clinical Research](#)

[Duke Clinical & Translational Science Institute](#)

[Scholars at Duke](#)

## **Research Funding Opportunities**

[Mentored Career Development Awards](#)

[Duke SOM Research Support Funding](#)

[CTSI Funding Opportunities](#)

[North Carolina Biotechnology Center](#)

[The Burroughs Wellcome Fund](#) (see “Career Awards for Medical Scientists”)

[RTI International](#)

[Department of Defense Funding for Medical Research](#)

[NIH Loan Repayment Programs](#)

[Thrasher Research Fund](#)

## **Professional Organizations**

[Association of American Physicians](#)

[American College of Physicians](#)

[American Society of Clinical Investigation](#)

[American Thoracic Society](#)

[North Carolina Thoracic Society](#)

[American College of Chest Physicians](#)

[American Academy of Allergy, Asthma and Immunology](#)

[Federation of American Societies in Experimental Biology](#)

[American Physiological Society](#)