Grant Writing Wisdom from IRF Recipients

Learning how to secure research funding is integral to becoming an independent investigator. The Intramural Research Fellowship (IRF) is a competitive research funding opportunity for NICHD postdoctoral, visiting, and clinical fellows. Its main objective is to promote grant writing among intramural trainees, while enhancing awareness of the various components of an NIH grant application.

To learn more about what it takes to write a winning grant application, we asked this year’s IRF recipients about their experiences applying for the IRF grant and what this award has meant for their careers. Read below to hear from this year’s winners: Joyce Thompson, Jennifer Panlilio, Stephanie Lehman, and Paul Atkins.

PAUL ATKINS, PhD, is a postdoctoral fellow in Dr. Henry Levin’s laboratory, the Section on Eukaryotic Transposable Elements. Dr. Atkins studies the structure and organization of rDNA repeats in fission yeast.

STEPHANIE LEHMAN, PhD, is a postdoctoral fellow in Dr. Matthias Machner’s laboratory, the Section on Microbial Pathogenesis. Dr. Lehman characterizes how Legionella pneumophila, the causative agent of Legionnaire’s disease, uses a secreted effector protein to hijack the host proto-oncoprotein NRas to dampen host signaling and promote infection.

(continued on page 3)
Letter from the Editor

I asked Dr. Vivian Szymczuk, the NICHD Clinical Fellow Rep, about the most pressing issue facing clinical fellows recently. Her answer in short: ramifications from an inability to interact regularly with others due to the pandemic. This likely resonates with clinical and basic science fellows alike. During my chats with this year's Intramural Research Fellowship recipients, all of them—every single one—indicated that interactions with their peers and mentors helped them write a winning grant proposal.

The takeaway message from this issue of The NICHD Connection is to form a group of mentors and peers, and then reach out to your network when needed. More often than not, your colleagues want to help. An extra set of eyes on a grant application, one more set of ears to listen to a complex clinical presentation, another story to relate to—these go a long way to forming the connections needed to sustain a science career, or at least make your fellowship a happy and fruitful one!

The Rep Report and April announcements contain plenty of activities to help you get started on forming that valuable network. And don’t forget, the NICHD Office of Education is in your corner with plentiful resources and important career guidance.

Your Editor in Chief,
Shana R. Spindler, PhD

This is a newsletter for NICHD fellows, by NICHD fellows. Please send your questions, comments, and ideas to our editor at shana.spindler@nih.gov.
Grant Writing Wisdom from IRF Recipients
(continued from page 1)

WHAT IS YOUR TOP GRANT WRITING TIP?

Paul Atkins (PA): Communicate your goals with the least amount of information possible but ensure the information you do include is as clear as you can make it.

Stephanie Lehman (SL): Especially for the internal grants here at the NIH, your audience is often not going to be an expert in your field. Your grant has to be super simple and super clear. Have lots of other people read it who are not in your lab (at least your Specific Aims page) and see what parts they didn’t quite follow. Pay attention to where they ask questions and workshop those sentences over and over. Sometimes you have to adjust your writing a lot to account for something you assumed a reader would understand, but they didn’t.

Another tip: if your grant(s) don’t get funded, a lot of times I think it’s luck of the draw with the reviewer you got. So, yes, you need great research and clear writing, but you might also just need more volume. You need to get your proposal out there more and

(continued on page 4)
Grant Writing Wisdom from IRF Recipients
(continued from page 3)

more to as many funding opportunities as you can until you can hit upon the right set of reviewers who both see the value of your work and advocate strongly for you in the study section.

Jennifer Panlilio (JP): Ask for feedback from a variety of colleagues—from scientists with expertise in your grant topic to those outside your field. Together, they will be able to provide balanced feedback. Scientists outside your field will flag unnecessary jargon and push you to think about the broader implications of your work. Those within your field will have the technical expertise to challenge your approach and suggest alternatives.

Joyce Thompson (JT): Make it easy to read and use white space!

WHAT CHALLENGE DID YOU ENCOUNTER WHILE WRITING THE GRANT APPLICATION AND HOW DID YOU OVERCOME IT?

PA: Finding the right “level” for the target audience is always the most difficult part of writing for me. The workable space between arcane and superficial can be surprisingly narrow. Back-and-forth with my mentor, Dr. Henry Levin, helped me find the right level. Also, taking a week or so break then revisiting helped me get a fresh perspective on my writing.

SL: I had comments from previous grant reviewers that highlighted some misunderstandings about the purpose of my field of research in general. At first it seemed to me that I should not have to spend a lot of text to justify why our field of study exists, as I thought a reviewer in my field would understand the value of this type of work. But I realized that to someone far outside my field (as is the case for reviewers of many grants), I really couldn’t take it for granted that they would understand. It was very challenging to try to expand even more than I usually do on why our field of science is critical in such a short space, while also trying to convey enough background information, data, and experimental design concepts. But it was the most important thing I could spend time on and make space for!

(continued on page 5)
Grant Writing Wisdom from IRF Recipients

(continued from page 4)

**JP:** I found it most challenging to propose a set of ideas that were innovative, yet doable within the short timeline the grant funds. I had a broad set of goals for my project, aims that address these goals, and specific strategies/approaches to achieve these aims. I mapped out the experiments on a timeline. I prioritized exciting experiments of which I had preliminary data and knew I could accomplish within the time frame of the grant. If I was proposing to use a novel technique of which I had limited experience and preliminary data, I looked for colleagues who were well-versed in the technique I was proposing. This way, I knew that the experiments I was proposing were doable within the short time frame of the IRF.

**JT:** One of the major challenges I always face is to write less. We often have so many ideas we want to pursue that we lose sight of which of those are most likely to be accomplished in the timeframe allowed by the grant. Often my final grant is cut down to a third of the experiments that I proposed in my first draft. Asking my PI and peers to point out what aims are outrageously ambitious helped me a lot.

Another challenge I always face is to write accessibly. What I write in my first draft is often not easy to understand for someone outside my lab or my research area. To overcome this, I ask people outside my field to read my draft.

**PA:** This was great practice breaking down a broad project into digestible pieces that can be readily conveyed.

**SL:** This is the first time I’ve had a grant application successfully receive funding (I’ve written six now), so it was huge in helping build my confidence that I can both do and convey important research. This grant will help me on the path to leading my own research group.

(continued on page 6)
Grant Writing Wisdom from IRF Recipients
(continued from page 5)

**JP**: I am still figuring out my next steps but learning to seek feedback from key people in the field, prioritize ideas, develop budgets, and ultimately develop a cohesive piece are all key skills that I will take with me in my future career.

**JT**: I learned how to budget my time effectively. It also helped me discipline myself and inculcated a habit of working on a draft much ahead of the deadline (greater than three months), so I had enough time to get good feedback and tweak my application.

**WHAT WAS THE MOST HELPFUL RESOURCE YOU ENCOUNTERED WHILE PREPARING YOUR GRANT APPLICATION?**

**PA**: My mentor Dr. Henry Levin gave me several rounds of invaluable feedback that dramatically improved the application.

**SL**: BioRender! While I don’t know how the reviewers felt about the figures, it was helpful to make clear figures. I had enough room for three figures: a cartoon to summarize my project with some key data, and a graphical abstract-style figure for each of my aims (including key data and the broad questions I was addressing). Everyone I spoke to thought it was very helpful to see the content visualized in an infographic-type style. I’m a very visual learner too, so this helped me organize the way I wrote the text more clearly.

**JP**: Previous successful IRF and trainee applications provided me with a great scaffold. Through these proposals, I got a better sense for the research scope, writing style, and formatting.

**JT**: The best resource I found was reading successful grant applications and comparing it to my previous grants that scored poorly. I was able to change my application style based on what is generally funded.
Vivian Szymczuk, MD, is a second-year clinical fellow in the Pediatric Endocrinology Inter-Institute Training Program. Her work focuses on fibrous dysplasia/McCune-Albright syndrome, a rare and progressive bone disease. Dr. Szymczuk wants to characterize the onset and progression of fibrous dysplasia over childhood. She hopes to identify which patients will develop more aggressive disease and determine an ideal therapy window.

Learn more about Dr. Szymczuk’s background in our September 2020 Clinical Corner column.

Dr. Szymczuk has served as the NICHD FelCom Clinical Fellow Representative for about six months. We’ve checked in with Dr. Szymczuk once again for her insights into the current needs of clinical fellows and her thoughts on the future of translational medicine.

What do you think has been the most pressing issue that clinical fellows have faced these past few years?

The pandemic has made life difficult for everyone. For clinical fellows, the inability to interact regularly with others has impaired the ability to network both at NIH and at conferences. It has also made it more difficult for fellows to make friends and become established in a new city.

What resources are available to help clinical fellows maintain connections with their colleagues while we navigate the final stages of the pandemic?

NIH has many resources available for clinical fellows to become and stay connected with each other. FelCom and ClinFelCom have several opportunities where you can become involved, whether it be through joining a committee or through group activities.

If you could go back in time, what advice would you give yourself as you embarked on your career to become a clinician-scientist?

Advice that I would give to anyone embarking on a career to become a clinician-scientist would be to be to get experience and be curious.

(continued on page 8)
Clinical Corner: Meet NICHD Clinical Fellow Rep, Dr. Vivian Szymczuk

You can get experience by spending time in a lab and/or being part of clinical research as a postbac or medical student. There is nothing more valuable than hands on learning and the experience gained from being in that environment. Also, the skills acquired during that time may eventually become valuable later in your career.

Being curious and exposing yourself to multiple fields and multiple layers of knowledge (basic, translation, clinical) will help you apply more bench to bedside research and become both a better clinician and scientist.

What do you see as some of the most exciting frontiers in translational research?

Big data analytics and CRISPR-Cas9 technology are very exciting frontiers in translational research. Big data analytics techniques are being utilized to integrate enormous volumes of information to enable a complex-systems understanding of disease pathology, forming the foundation of a new era of precision medicine. CRISPR-Cas9 technology will lead to cures for many devastating genetic and other disorders that currently require intensive management.

An Institutes and Centers (IC) clinical representative is a clinical fellow who serves on the NIH-wide Fellows Committee (FelCom) on behalf of the institute’s clinical fellow population. In general, most institutes have one basic science representative and one clinical representative. Representative appointments last for 12 months and can be renewed for an additional year.

Responsibilities of the IC representative include attending all scheduled FelCom meetings, participating on a subcommittee, disseminating information to the fellows in the IC, communicating concerns to the committee from the IC’s fellows, and coordinating the distribution of information via subcommittees.
The Rep Report
By Lauren Walling, PhD

As the current NICHD Basic Sciences Institutes and Centers (IC) Representative, I represent NICHD postdoctoral fellows at the NIH Fellows Committee (FelCom) meeting every month and share the latest news with you here. Do you have a concern or question that you want brought up at the next meeting? Contact me at lauren.walling@nih.gov!

The Fellows Editorial Board is seeking new submissions. This group offers free, confidential scientific document editing to NIH fellows—including manuscripts, draft grants, and job applications. Please contact Senior Editor, Joana Dias (NCIEditors@nih.gov), for more information.

Postbac Poster Day will be held virtually this year on April 26–28. Postbacs must register by April 1st. Come support our talented postbacs by checking out their poster presentations! For more information visit the Postbac Poster Day website.

The Health & Recreation Subcommittee is hosting an “April Buds” 5K and 10K run/walk in mid-April. For more information, and to share progress and join event meet-ups, check out the NIH postdoc Slack channel (sign up with a non-NIH email).

The Women Scientist Advisors Committee is hosting its 2022 WSA Scholar Symposium virtually on April 25 from 9-10:30 a.m. The 2022 WSA Scholars, Dr. Ching-Wen Chang (Visiting Postdoctoral Fellow, NCI), Shachar Abudi (Graduate Student, NIGMS), and Dr. Sally Chang (Postdoctoral Fellow, NHGRI), will give talks on their current research. To attend, please check your emails for the NIH-wide announcement sent by email at the end of March, or contact the WSA liaisons Zeinab Farhat (zeinab.farhat@nih.gov) or Agnes Karasik (agnes.karasik@nih.gov) for the Zoom info.

The National Postdoctoral Association is hosting an online course to help postdocs transition to biotech, offered by the American Society for Cell Biology (ASCB). The course runs from June 13-17, from 1–5 p.m. each day, and the deadline to apply is April 30. For more information and to apply, visit the ASCB website.
April Announcements

NIH UNITE: ENDING STRUCTURAL RACISM (ESR) ACTIVITIES
The NIH UNITE initiative was established to identify and address structural racism within the NIH-supported and the greater scientific community.

The ESR Intranet includes various resources like the Toolkit, Newsletter, FAQs, and other information.

UNITE Milestones and Progress and the Co-Chairs Corner (public ESR webpages) are other avenues to stay informed on UNITE efforts.

THE OFFICE OF EDUCATION IS REVIVING THE FELLOWS ADVISORY COMMITTEE AND WE ARE SEEKING MEMBERS—NEW AND FORMER MEMBERS ARE WELCOME!
The committee meets monthly to help develop and provide input on career development programs to support NICHD fellows. The Advisory Committee will also steer the annual NICHD Fellows' Retreat, which will be held in fall 2022. This includes developing the program, reviewing abstracts, selecting speakers, and moderating sessions. This is a great opportunity to serve your NICHD community and have an impact on the programs and career development opportunities available to fellows!

Meetings will be held once a month on Thursdays from 3–4 p.m. The Zoom link will be circulated a few days in advance. Our next meeting will be held on April 28th.

If you are interested in joining the committee, please email Katherine Lamb (katherine.lamb@nih.gov). Any previous members of the committee who still wish to participate are also asked to please email to let us know of their continued interest.

NICHD GRADUATE STUDENT MOR ALKASLASI FEATURED IN IRP BLOG
NICHD graduate student Mor Alkaslasi (Le Pichon laboratory) along with graduate students from NIEHS, NIMH, NCI/CCR, and NIA were featured by the Intramural Research Program (IRP) in an article about this year's Graduate Student Research Symposium. Learn about Mor’s journey studying the brain—from understanding neurological diseases to deciphering what happens after traumatic brain injury—in the “I am Intramural” blog post feature.

(continued on page 11)
April Announcements
(continued from page 10)

THREE-DAY GRANT WRITING WORKSHOP FOR ALL NICHD & NINDS FELLOWS
“Write Winning NIH Grant Proposals”
May 16, 17, & 18

This year the “Write Winning NIH Grant Proposals” workshop will be virtual and split amongst three days, from 1-4:30 p.m. each day. Our institute has 25 slots total—register now!

Please note that day three (May 18th) will focus specifically on the NIH Career Transition Award (NIH K-series). Anyone interested in applying for a K grant is welcome, but attendance on May 16th and 17th is required.

The workshop will address both practical and conceptual aspects that are important to the proposal-writing process. Attendees will receive the “Grant Writer’s Workbook”—an invaluable, up-to-date reference tool for those who intend to write NIH grants in the future.

Topics include:
» General grant writing proposal concepts
» Understanding NIH funding priorities
» Funding opportunity announcements, the importance of the program officer, and different funding mechanisms
» Creating and developing the essential components of a grant application
» The grant review process
» Writing a career transition award application (NIH K-series grants)—day 3 (for those interested in attending)

If you would like to register for this grant writing workshop, please email Ms. Katherine Lamb (katherine.lamb@nih.gov).

(continued on page 12)
April Announcements

(continued from page 11)

THREE-DAY GRANT WRITING WORKSHOP FOR ALL NICHD & NINDS FELLOWS, CONTINUED

Plus a few NIH grants for you to consider:

» For the K99/R00 Pathway to Independence awards, applications and resubmissions must be submitted before the end of your fourth year. This opportunity is open to all postdoctoral fellows, domestic and international, competing for start-up funding to establish a research program in a US institution.

» Transition Career Development Awards (K22) provide support to mentored, non-independent investigators in transitioning to their first independent tenure-track faculty positions. Applicants must be US citizens or permanent residents.

» The Postdoctoral Research Associate (PRAT/Fi2) program specifically supports intramural postdoctoral trainees. Applicants must be US citizens or permanent residents and within their first year of NIH postdoc training.

The Office of Education is more than willing to assist you with your search of funding opportunities and grant writing, from reviewing with you eligibility criteria/application requirements to providing guidance documents that outlines the entire NIH application/submission process.

In addition to the grants above, we have established a vetted list of grant opportunities that intramural fellows can apply to (for both domestic and international fellows).

(continued on page 13)
April Announcements
(continued from page 12)

REGISTER NOW FOR THE 2022 NIH CAREER SYMPOSIUM
(Adapted from the Office of Intramural Training and Education (OITE) Career Symposium official announcement. Check your emails for more info!)

Registration is now open for the NIH Career Symposium (May 11-13, 2022) for intramural trainees. This year the symposium will be held via an online platform to make it easier and to provide more interactions between participants and speakers. You are welcome to come to every session, or just the ones you are interested in. Register now, and any slots not filled by intramural trainees will be opened to outside trainees on April 15.

1. View the full agenda
2. See the speakers
3. Register here (the event is free).

Once registered, you can explore the agenda and the current speakers—more speakers are being added in many sessions, so check back often! If you are planning to attend particular sessions, please add that to your Agenda within the Whova pages so that an adequate number of speakers are planned (instructions below).

Instructions for WHOVA Agenda ADD after registering
1. Find the Agenda tab on the side of the screen. You should see a list of sessions for that day.
2. You can move through different days by selecting the date you want to view on the calendar at the top of the agenda.
3. Browse or search for sessions on the top bar.
4. Once you find the session you want to access, tap on it.
5. If the session is live, it will begin playing immediately upon entering. Otherwise, a message will indicate the scheduled start time.
6. If the session hasn’t occurred yet, you can click Add to My Agenda to put the session on your own personal agenda.

(continued on page 14)
TRAINING OPPORTUNITY TO LEARN ABOUT CLUSTER RANDOMIZED TRIALS
May 3–5, 2022, 11 a.m.–5 p.m.
Register at https://events.cancer.gov/nci/clustertrials

Purpose: The National Cancer Institute (NCI) invites attendance for a virtual short course that will provide training in the design, conduct, and analysis of cluster randomized trials (CRTs), including parallel CRTs, stepped-wedge CRTs, and cluster randomized cross-over trials (CRXO). The course is jointly sponsored by NCI’s Healthcare Delivery Research Program and Implementation Science Team. CRTs are increasingly used to evaluate interventions to improve care delivery and to study strategies for implementing evidence-based interventions into routine clinical practice. They require specific methods of design and statistical analysis. The course will address:

» Rationale for using these designs
» Specific design considerations
» The randomization process
» Sample size calculations
» Analytic methods
» Ethical considerations
» Practical issues in trial management
» Trial reporting and interpretation

Principles will be illustrated using case studies of the different variations of CRTs across the cancer control continuum (prevention, diagnosis, treatment, survivorship, and at-end-of-life).

Intended Audience: This course will address the training needs of doctorally prepared cancer care delivery researchers and implementation scientists, as well as postdoctoral fellows and other trainees, and other scientific team members such as project coordinators. Some of the sessions are specifically targeted at statisticians, methodologists, and researchers with an interest in more complex statistical topics.

Participation in the course is free of charge, but registration is required.

Questions about the workshop may be submitted at https://healthcaredelivery.cancer.gov/about/contact.html.
April Events

TUESDAY–THURSDAY, APRIL 26–28
Postbac Poster Day
Virtual Only

Postbac Poster Day provides an opportunity for NIH postbacs to discuss their research projects and at the same time develop their communication and networking skills. For more information, please visit https://www.training.nih.gov/virtual_postbac_poster_day.

THURSDAY, APRIL 28, 9 AM–4 PM
NIH’s 28th Annual “Take Your Child to Work Day”
Virtual Only

NIH’s annual “Take Your Child to Work Day (TYCTWD)” will be VIRTUAL again this year. This event will provide children grades 1–12 an opportunity to see how your efforts contribute to the NIH and inspire them to explore career paths in science and public service.

The Office of Research Services, Program and Employee Services is the primary sponsor of TYCTWD 2022. Please email any questions and comments to Take-Your-Child-To-Work@nih.gov.

ONGOING EVENTS AROUND CAMPUS
NIH-Wide Office of Intramural Training and Education (OITE) Events
For more information and registration, please visit Upcoming OITE Events.

NIH Library Training and Events
For more information and registration, please visit the NIH Library Calendar.