



Basics of Submitting Extramural Fellowship Applications

Scott Edwards, PhD
Associate Professor of Physiology and Neuroscience
Dept of Physiology Vice Chair for Training and Mentoring

LSU Health
NEW ORLEANS

Learning Objectives

- Describe the components and purpose of NIH F-series fellowship applications.
- Develop a strong training plan with faculty mentors.
- Identify common reviewer expectations & avoidable errors.



School of Medicine Research Café Schedule

Dates	Topic	Facilitator
September 9	Intramural Funding Opportunities and Strategies	Peter Winsauer, PhD
October 14	Grant Proposal Development	Scott Edwards, PhD
November 11	Writing Specific Aims	Nick Gilpin, PhD
December 9	Writing Research Strategy Sections	David Welsh, MD
January 13	Preparing NIH Biosketches, Budgets, and Budget Justifications	Peter Winsauer, PhD & Carly Pigg, CRA, CPRA, CFRA
February 10	Preparing for IBC Applications	Arnold Zea, PhD
March 10	Preparing IACUC Applications	Charles Nichols, PhD
April 14	Preparing and Submitting IRB Applications	Jessica Rivera, MD, PhD
May 12	Basics of Submitting Extramural Fellowship Applications	Scott Edwards, PhD, Eden Gallegos, PhD, Nick Harris, PhD
June 9	Basics of Submitting Extramural Career Development Awards	Nick Gilpin, PhD, Amanda Pahng, PhD, Sydney Vita, PhD
July 14	Preparing Ancillary Documents	Liz Simon, PhD

Fellowship Award Programs



Provide stipend, tuition, and small institutional allowance

- F₃₀ – Predoctoral fellowship for MD/PhD students
- F₃₁ – Predoctoral fellowship for PhD students
- F₃₂ – Postdoctoral fellowship
- F₉₉/K₀₀ – Transition from predoctoral to postdoctoral training

Basic science and clinical faculty provide essential mentoring (Sponsorship)

NRSA Success Rates by Selected Institutes (2025)

NIH Institute	2025 F30	2025 F31	2025 F32	2025 F99
NCI	25%	15%	17%	28%
NHLBI	34%	34%	35%	
NIAID	39%	26%	34%	
NEI	32%	32%	31%	
NIA	13%	13%	11%	18%
NIMH	29%	18%	14%	
NIDA	60%	42%	45%	
NIAAA	25%	23%	29%	

Why Should Trainees Think About Grants?



- Grants show that you can envision a major research trajectory, with the requisite balance of independence and collaborative skill.
- Good grantsmanship can take some time to develop, but once the skills are developed, it is highly transferrable and valuable to future employers.
- It is never too early or too late to start! Also, you're surrounded by investigators and collaborators who can help with grant writing.
- Be prepared for future opportunities from other sources – you might get looped into a research project or study as a valuable co-investigator and things move quickly.

Recent Revisions to NIH Fellowship Guidelines

- Designed to focus reviewer attention on three key assessments:
 - The fellowship candidate's preparedness and potential
 - Research training plan
 - Sponsor and institutional commitment to the candidate
- Aims to ensure a broad range of candidates and research training contexts can be recognized as meritorious.
- Reduce bias by emphasizing commitment to the candidate without undue consideration of sponsor & institutional reputation.



NIH Fellowship Grant Components

- Candidate's Goals, Preparedness, and Potential
 - Overall Training Goals
 - Candidate's Preparedness
 - Candidate's Self-Assessment
 - Scientific Perspective
- Training Activities and Timeline
- Research Training Plan
- Sponsor & Institutional Commitment



Individual Development Plans (IDPs)

Required for all predocs and postdocs on NIH training and fellowship grants



www.myIDP.sciencecareers.org



Individual Development Plan

for
 Sumin Lee

Personal Information

Current Role: PhD Student
Institution: LSU Health New Orleans

IDP last modified: 7/24/2024

Career Plans Summary

Plan A

Long Term Goal: Physician in Private Practice
 Practicing in a private institution/clinic/hospital. Learn about how they are operated.
Short Term Goal: operated.

Plan B

Long Term Goal: Combined research and clinical practice in Academic Medicine
 Dual role as a researcher and a physician, delegating time into each
Short Term Goal: component

SMART Goal Summary

Note: only goals within last 12 months and up 12 months in the future are shown.

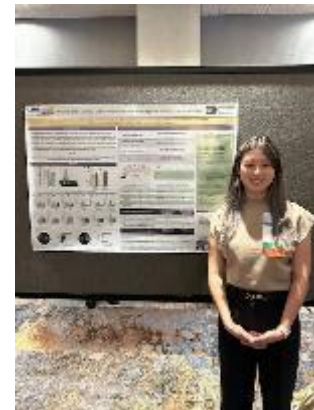
July 2024

- Specific: Complete a self-assessment of career interests, skills, and values using tools such as the Myers-Briggs Type Indicator (MBTI) and the Strong Interest Inventory. Measurable: Finish at least two different self-assessment tests. Achievable: Allocate one hour per month for the next two months to complete the assessments and reflect on the results. Relevant: Understanding my career interests, skills, and values will help guide my decisions and identify suitable career paths. Time-bound: Complete the assessments and reflections by September 30, 2024, [monthly]
- Specific: Incorporate a daily 30-minute exercise routine and mindfulness meditation into my schedule. Measurable: Track daily exercise and meditation sessions in a wellness journal. Achievable: Use Gympass membership for guided exercises and meditation. Relevant: Regular exercise and mindfulness practice will improve my physical and mental health, supporting overall well-being. Time-bound: Establish and maintain this routine for the next three months, reassessing progress on October 31, 2024, [daily]
- Specific: Submit at least one manuscript for publication; Measurable: Track the submission and review process for the manuscript; Achievable: Work with my advisor to identify appropriate journals for submission; Relevant:

Self Assessment Summary

Strong Skills

- Broad based knowledge of science
- Experimental design
- Basic writing and editing
- Writing grant proposals
- Speaking clearly and effectively
- Presenting research to scientists
- Presenting to nonscientists
- Teaching in a classroom setting
- Seeking advice from advisors and mentors
- Demonstrating workplace etiquette
- Complying with rules and regulations
- Upholding commitments and meeting deadlines
- Maintaining positive relationships with colleagues
- Contributing to discipline (e.g. member of professional society)
- Contributing to institution (e.g. participate on committees)
- Providing instruction and guidance
- Providing constructive feedback
- Dealing with conflict
- Planning and organizing projects
- Time management
- Developing/managing budgets
- Managing data and resources
- Delegating responsibilities
- Creating vision and goals
- Careful recordkeeping practices
- Demonstrating responsible authorship and publication practices
- How to maintain a professional network
- How to identify career options
- How to prepare application materials
- How to interview
- Technical skills related to my specific research area



Weak Skills

Individual Development Plan
Jessica Cucinello-Ragland, BA
Spring 2021 (Year 4)

Long-Term Goal:

It is my long-term career goal to successfully establish my own externally funded laboratory and teach multiple courses at a primarily undergraduate institution (PUI). My research interests are to develop and validate more translationally relevant animal models of acute and chronic pain to determine the underlying neurobiological mechanisms behind hyperalgesia and analgesia. My ideal research program will utilize a combination of behavioral and molecular techniques, while my optimal teaching platform would include introductory and advanced courses on physiology, neuroscience, and psychopharmacology. This IDP is written with this long-term goal in mind.

Self-Assessment:

I have reflected on my strengths and weaknesses in the core competencies using a combination of my IDP and discussions with my mentors, and there are areas within each competency that I will aim to improve throughout the remainder of my graduate training. The following are specific areas within each competency that I plan to focus on for the next 6 months.

- Scientific Knowledge: Increase broad-based understanding of alcohol-mediated regulation of nociception.
- Research Skills: Master immunohistochemistry and stereotaxic surgery procedures.
- Communication Skills: Negotiating difficult conversations.
- Professionalism: Remain active on various School of Graduate Studies Committees, especially following the end of my SGA Presidency.
- Management and Leadership Skills: Improve time management, both for myself and the students I co-mentor.
- Career Planning: How to search for, apply to, and negotiate postdoctoral positions.

Measurable Goals:

1. Submit *Neuroscience Letters* manuscript and *Journal of Neurophysiology* review in early 2021.
2. Optimize triple stain immunohistochemistry protocol by end of summer 2021.
3. Complete all F31/dissertation female Western blot analyses by May 2021.
4. Present research at Experimental Biology, Research Society on Alcoholism, and Society for Neuroscience meetings.
5. Maintain existing research collaborations (Bazan, Pahng, Gilpin/Sharfman, Roberto) and discuss plans for publication.
6. Incorporate better teaching practices (learned from APS TEBioED Fellowship) into my existing lectures.

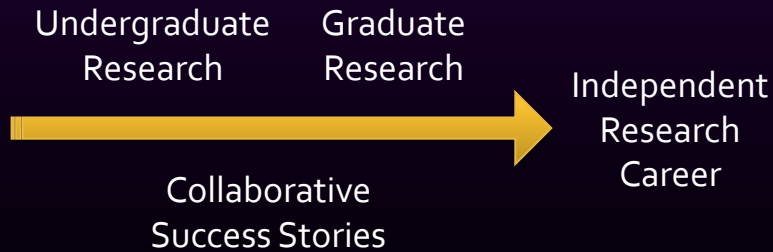


2023 NIH Helping End Addiction
Long-Term (HEAL) Meeting
Washington DC



Candidate's Goals, Preparedness, & Potential

- Craft an autobiographical timeline, bridging your strongest elements of past, present, and future.
- Create a sense of "what could be"



NIH Biographical Sketch

(always use most recent format version)

- Somewhat of a resumé and CV combo.
- For collaborative grants all associated personnel will submit an NIH Biosketch describing their role in the proposal.
 - Principle Investigator (You)
 - Sponsor & Co-Sponsors
 - Collaborators & Consultants
- You will submit this anytime you are part of a formal NIH grant proposal in your career.
 - Make one now & customize as needed
 - Keep an eye out for format revisions

BIOGRAPHICAL SKETCH

Provide the following information for the Biosketch personnel and other significant contributors. Follow the format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Lee, Sumin (Stephanie)

eRA COMMONS USER NAME (credential, e.g., agency login): STEPHLEE

POSITION TITLE: Graduate Research Assistant

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Start Date MM/YYYY	Completion Date MM/YYYY	FIELD OF STUDY
Emory University, Atlanta, GA	BS	08/2017	12/2020	Neuroscience and Behavioral Biology
Louisiana State University Health Sciences Center, New Orleans, LA	MD/PhD	07/2021	05/2028 (Expected)	Medicine, Physiology

A. Personal Statement

As an aspiring physician-scientist, my aim in pursuing training at Louisiana State University Health Sciences Center (LSUHSC) is to cultivate skills required to establish a successful career in translational research. From a young age, I knew medicine would play a central role in my future, but it was my experience as a clinical research coordinator at the Emory Behavioral Immunology Program that ignited a deep passion for research in my professional journey. Working on a project investigating the responsiveness to bupropion in patients with major depression in the context of inflammation exposed me to the profound impact of translating molecular neurobiology into clinical practice to enhance patient outcomes.

Seeking to further align myself with my career objectives, I embarked on a T35 research fellowship, sponsored by the National Institute on Alcohol Abuse and Alcoholism (NIAAA), during the summer after my first year of medical school. This immersive experience shed light on the significant knowledge gap concerning the mechanisms underlying the anti-nociceptive effects of alcohol, particularly in relation to chronic pain and its contribution to alcohol use disorder (AUD). My investigations, centered on exploring sex differences in pain perception and modulation after acute alcohol use in both pre-clinical and clinical models, deepened my fascination with alcohol research and the profound possibilities of translational studies. These experiences steered me towards the decision to pursue a combined MD/PhD program, rather than solely an MD degree.

Currently, my specific focus centers around neural modulations in the central endocannabinoid system following alcohol use and the consequential impact on pain experience and relapse of AUD. In the pursuit of this passion, I am eager to undergo training at LSUHSC, particularly under the mentorship of Dr. Scott Edwards. Dr. Edwards' expertise in alcohol and neuroscience research is poised to play a crucial role in the success of my future projects. I am also impressed by Dr. Edwards' commitment to nurturing my growth as a physician-scientist that extends beyond the lab through the development of teaching skills and engagement in community outreach and service, which truly resonates with my own aspirations. The Ruth L. Kirschstein Institutional National Research Service Award (NRSA) training fellowship, combined with my Comprehensive Alcohol Research Center (CARC) mentorship team and the exceptional faculty in the Physiology Department at my institution, will undoubtedly provide me with the resources and support needed to further refine my skills as a physician-scientist.

In conclusion, my passion for translational research, particularly in the realm of alcohol research and its profound impact on pain perception, drives me towards pursuing a combined MD/PhD program. The Ruth L. Kirschstein Institutional NRSA training fellowship, combined with the invaluable support of my mentorship team and the exceptional faculty within the Department of Physiology at my institution, will undoubtedly provide me with the resources to further refine my skills as a physician-scientist. With the fellowship and my training at LSUHSC, I am confident in my journey as a physician-scientist to be filled with exciting discoveries for the advancement of human health through translational research.

Training Activities and Timeline



Research
Training



Customized
Education & Service



Research Conferences &
Other Customized Training

Timeline for Proposed Training:

	G2 (2024 – 25)	G3 (2025 – 26)	M3 (2026 – 27)	M4 (2027 – 28)
Research	Experiments and Analysis for Aim 1 & Aim 2		Basic Science & Clinical Seminars	
	Lab Technical and Analytical Skills		Dissertation and Defense	
	Manuscript 1	Preliminary Exam Manuscript 2	Manuscript 3	Manuscript 4
	Complete Any Unfinished Manuscripts			
Clinical Training	Monthly Empirical Pain Tests for NOAH Cohort		Back to Medicine Talks	Clinical Clerkships
	Biweekly Volunteer at Student-Run Community Clinic (SRCC)			
	Monthly Volunteer with Freestanding Communities (Local Health Outreach Organization)			
	Monthly MD/PhD Forum for Community Building, Clinical Vignettes, and Research Updates			
	Monthly CARC ICC Meetings (Including Dr. Welsh & Dr. Ferguson)			
Professional Development	RSA Conference	ICRS	SEMSS	RSA Conference
	Society for Neuroscience Conference	American Physiology Summit	Society for Neuroscience Conference	American Physiology Summit
	Weekly Student Work in Progress (SWIP) Meetings		Small Group Medical Ethics Discussions	
	Weekly Edwards Lab Meetings & 1-on-1 Meetings with Dr. Edwards		HIPAA Privacy Training	
	Monthly Co-Sponsors Lab Meetings			
Coursework	Perspectives in Alcohol Research		Clinical Courses	
	Weekly Seminar & Journal Club			
	Biostatistics	Responsible Conduct of Research II	Ethics in Biomedical Sciences	
	Scientific Writing	Neurophysiology of Behavior		
	Endocrinology			

Customized Training Plan - Easy to Read for Reviewers
Should Also Align with Sponsoring Team Skills & Plans for Training

Reference Letters

- Need 3-5 reference letters who can speak to your qualities as an emerging scientist.
 - Nice to have letters from faculty or staff from different stages of your early career.
 - These will be submitted separately by the writers.
- These are different from the letters of support (LOS) that you will assemble within your main NRSA application.
 - LOS are more specific and tailored to your research or training needs.



Recommendation for Kaitlin Couvillion – F30 NRSA Submission

August 1, 2025

Dear NRSA Review Committee,

This letter is written in the strongest possible support of Kaitlin Couvillion and her NIH/NIAAA F30 NRSA. I am the Associate Director of our NIH/NIAAA T32 Biomedical Alcohol Research Training Program and Vice Chair for Training and Mentoring for the Department of Physiology at LSU Health-New Orleans and have regularly interacted with Kaitlin in these roles over the past year, including as a member of her PhD dissertation committee. I have also been excited to witness her expanding translational research conceptualizations and early productivity in association with our NIH/NIAAA P60 Comprehensive Alcohol-HIV/AIDS Research Center (CARC), where we meet monthly to discuss research findings and challenges related to our longitudinal cohort of people living with HIV (PWH) and the New Orleans Alcohol Use in HIV (NOAH) Study. While she garnered pretty extensive research experience and productivity as an undergraduate at our main LSU campus, **Kaitlin has really taken advantage of the extended translational research opportunities available at our health sciences center that match her career ambitions as a leading physician-scientist.** I've been particularly impressed with Kaitlin's broad knowledge base and emerging skill set with regard to innovative technologies (extracellular vesicle and spheroid methodologies), study design, and conceptualizations of immune system and liver crosstalk at the intersection of alcohol use disorder (AUD) and HIV risk. This research has profound implications for underserved AUD and HIV populations, and the innovative training plan is uniquely suited for F30 NRSA physician-scientist training, accelerating Kaitlin's development at just the right moment with this award.

My own CARC research component (interactions of alcohol and HIV on cognitive deficits and pain) is completely distinct from Kaitlin's academic and research focus, but my extensive experience as Sponsor of F30, F31, and F32 NRSA fellows provides substantial insight into the value of individual training fellowships as well as the importance of selecting the absolute best young scientists for intense training. Kaitlin joined our department to begin her formal PhD training in the summer of 2024 after two years of medical school. She has taken on an ambitious and important research agenda under the Sponsorship of **Dr. Liz Simon, a collaborator of mine and outstanding mentor with a proven track record** in our CARC community and nationwide. Together they will make a great combo. I'm particularly excited about Kaitlin's experimental aims to understand how extracellular vesicle cargos from immune cells impact liver health, and how these interactions are perturbed by alcohol. I can attest that **she has worked extremely hard in Dr. Simon's lab to combine the most appropriate models and technological advances into her research training plan to maximize its success to propel her future academic medicine career.**

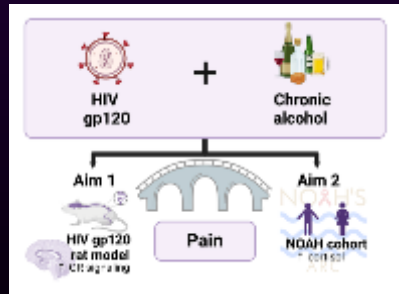
It is also important to provide insights into Kaitlin's commitment to the broad-based training agenda proposed in the F30. I've worked with her as PI of our P60 alcohol center's Outreach and Information Dissemination Core, where Kaitlin has led several volunteer efforts in our greater New Orleans community. Kaitlin has already engaged with our department's educational and summer mentoring opportunities, and she has been particularly active within the broader MD/PhD program and truly combines the best characteristics of a keen and critical scientific mind with a passionate and decisive clinical drive and focus.

Research Training Plan

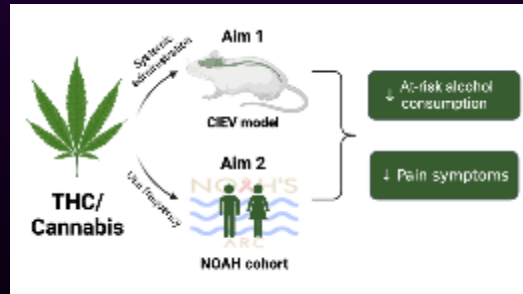


Specific Aims & Research Strategy

- Contributions from Sponsoring team, including conceptualizations & preliminary data.
- Keep in mind that the research should serve a training purpose in line with your goals.



Taylor Fitzpatrick-Schmidt
F30AA030941



Stephanie Lee
F30AA031900

Specific Aims

Alcohol use disorder (AUD) affects more than 10% of the United States population (SAMHSA, 2023). AUD is a psychiatric disorder characterized by escalated alcohol use and the potentiation of negative motivational states. Alcohol is also well known for its analgesic effects (Thompson et al., 2017), although excessive use leads to increased pain sensitivity (or hyperalgesia) during withdrawal (Edwards et al., 2012, 2020). Chronic pain affects over 20% of the global population and contributes to the development and severity of both psychiatric illness and AUD, although effective pharmacological treatments for these conditions remain severely limited (Rikard et al., 2023). In recent years, many individuals have turned to recreational or medicinal cannabis for management of chronic pain and related health conditions. Specifically, delta-9-tetrahydrocannabinol (THC), the main psychoactive component of cannabis, may offer a promising avenue for treating pain, a common cause of excessive drinking in individuals with AUD. While some support for the motivated use and utility of cannabis to reduce alcohol drinking exists at the clinical level, there is an urgent need to understand both the anti-hyperalgesic efficacy of cannabis/THC in the context of alcohol dependence and how use may either mitigate or worsen the risk of escalated drinking and AUD (Russo et al., 2020).

Our previous preclinical work has shown a functional role for the central amygdala (CeA) in the promotion of hyperalgesia and escalation of alcohol drinking in a preclinical animal model of AUD. As an extension of my NIAAA T35 Summer Research Fellowship examining biobehavioral outcomes of acute alcohol in the context of chronic inflammatory pain (Cucinello-Ragland et al., 2023), I recently analyzed a proteomics data set that compared CeA protein expression in alcohol-dependent vs. non-dependent rats of both sexes. My analysis revealed significant changes in several canonical pathways affected by alcohol, including the endocannabinoid (eCB) neuronal synapse pathway in both sexes. Our findings indicate that chronic alcohol exposure produces a state of endocannabinoid system dysregulation that may underlie the potential therapeutic efficacy of



Specific Aim 1: Test the hypothesis that delta-9-THC administration alleviates hyperalgesia and reduces escalated alcohol self-administration in alcohol-dependent male and female rats. Using the chronic, intermittent ethanol vapor (CIEV) procedure, I will determine the dose-dependent pharmacological efficacy of delta-9-THC systemic administration on pain-related behaviors (mechanical/thermal hypersensitivity and pain avoidance) and alcohol self-administration in alcohol-dependent rats of both sexes. This work will be guided by Dr. Scott Edwards (Sponsor) and Dr. Nicholas Gilpin (Co-Sponsor), who have a rich collaborative history.

Specific Aim 2: Test the hypothesis that cannabis use is associated with reduced pain symptoms and reduced at-risk alcohol use in men and women. I will utilize both self-reported and empirical measures of mechanical and thermal nociceptive sensitivity to quantify pain symptoms in the NIAAA-funded Comprehensive Alcohol Research Center (CARC; PI Dr. Patricia Molina, Co-Sponsor) New Orleans Alcohol Use in HIV (NOAH) cohort. To determine recent and at-risk alcohol use, I will examine circulating phosphatidylethanol (PEth) levels (objective biomarker of recent alcohol use), lifetime drinking history (LDH), Addiction Severity Index (ASI), and Alcohol Use Disorder Identification Test (AUDIT) scores. To determine the incidence and frequency of cannabis use, I will utilize self-report, ASI, and Cannabis Use Disorder Identification Test (CUDIT) data. Correlational analyses of data from our established baseline cohort (n=365, 31% female) will be followed by more stringent logistical regression and longitudinal analyses to determine important relationships and contributing variables (see Letter of Support from Dr. Takeda Ferguson, Director of CARC Data Analysis Core).

This research training plan will provide valuable new information on the utility and efficacy of cannabis/THC interventions for the treatment of AUD and related pain symptoms in men and women while facilitating the career development of a future physician-scientist focused on a translational research career in the clinical neurosciences.

Emphasize Training Aspects of the Research

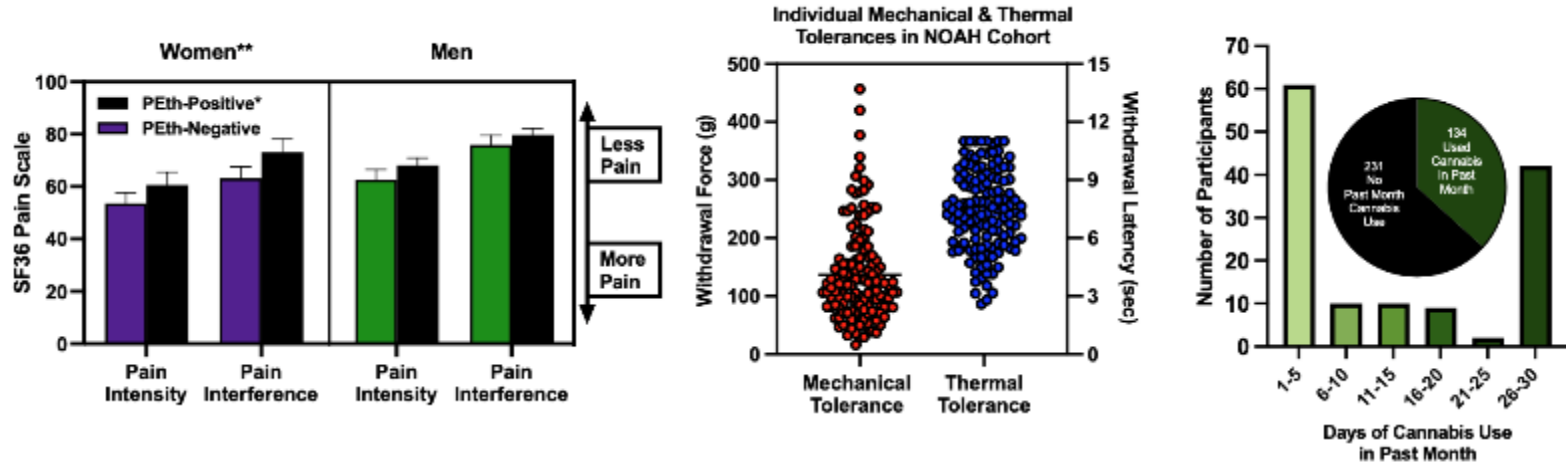
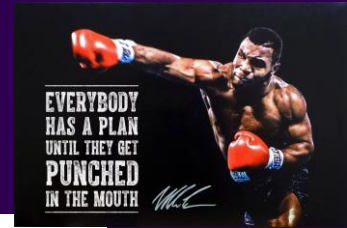
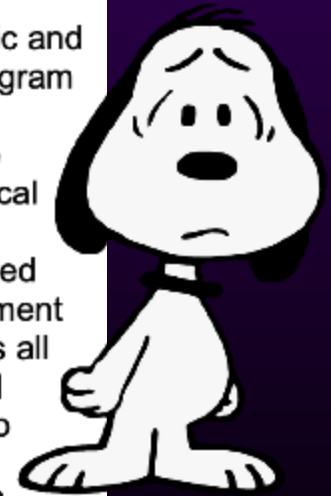


Figure 3 – (Left) Women in the baseline NOAH cohort report more pain symptoms compared to men, while PEth-positive (i.e., recently alcohol-using) individuals report fewer recent pain symptoms ($n=365$; $**p<0.01$ main effect of sex and $*p<0.05$ main effect of PEth by ANOVA). **(Middle)** Individual differences in mechanical and thermal tolerance are evident in a preliminary and growing data set ($n=126-134$) from the NOAH cohort capturing a valuable empirical measure of pain. **(Right)** The NOAH cohort also exhibits a substantial yet varied use of cannabis. How cannabis use relates to pain measures and indices of at-risk alcohol use is the primary research and training focus of Aim 2. For a comprehensive assessment of alcohol use in the NOAH cohort, see (Ferguson et al., 2020).

Summary Statement – How Did You Do?



RESUME AND SUMMARY OF DISCUSSION: This new F30 application from a MD/PhD candidate at Louisiana State University Health Sciences Center seeks to gain training on alcohol-cannabinoid system interactions in the context of pain and alcohol use disorder (AUD). The candidate is well-qualified; she has a good publication history, strong recommendation letters, and appropriate basic and clinical experience to conduct the project. The candidate is currently enrolled in a T32 training program and is a member of the Research Society on Alcohol. The mentoring team is excellent and have relevant expertise in the topic area with additional history of collaboration among themselves. The research training plan is well drafted with strong translational aspects that includes basic and clinical components. There is a feasible timeframe to complete the project and a clear plan to present the findings at scientific meetings. The training potential describes long-term goals and detailed planned activities that include relevant clinical connections, coursework, writing, and professional development that will substantially benefit the candidate's career advancement. The academic environment has all the resources and professional development necessary for the candidate to achieve the proposed training goals. However, the sample size proposed lacks a realistic plan of accrual and rationale to achieve significant results. The participation of a mentor/collaborator with expertise in statistics, analytical, and modelling approaches will be essential for the successful accomplishment of Aim 2. Nonetheless, these issues were considered minor and after the discussion the review panel rated the application in the outstanding to exceptional range.



NIH Grant Scoring Scale – Low Score is Better

Impact	Score	Descriptor
High Impact (Fundable Range)	1	Exceptional – Essentially no weaknesses
	2	Outstanding – Negligible weaknesses
	3	Excellent – Some minor weaknesses
Medium Impact (Revise & Resubmit)	4	Very Good – Numerous minor weaknesses
	5	Good – Some moderate weaknesses
	6	Satisfactory
Low Impact	7	Fair
	8	Marginal
	9	Poor

What if You Need a Second Chance?

- You will almost never get a grant the first time.
- Resubmissions are allowed.
- Be mindful of responding to reviewer critiques.
- Consider easier vs. harder points to revise.



Introduction to the Application

We greatly appreciate the reviewers' time and valuable feedback on the initial F30 submission, which scored a 21 and rated in the "outstanding to exceptional" range. We are encouraged by the highly positive feedback, with reviews highlighting a well-qualified applicant with a good publication history and strong recommendation letters, excellent mentoring team with relevant expertise and history of collaboration, well-constructed research training plan with strong translational aspects, and an excellent training environment. Reviewers did raise a few minor issues and provided constructive criticism that we are able to directly address to further strengthen the overall quality of this proposal. Below we summarize our point-by-point responses. Significant modifications and highlights within the fellowship proposal are indicated in bold blue text. **Identification of Clinical Research and Biostatistical Mentors:** We neglected to highlight support letters from LSUHSC Comprehensive Alcohol Research Center (CARC) clinical (David Welsh, MD) and biostatistical (Tekeda Ferguson, MPH, PhD) members of the mentoring team. Dr. Welsh is a Professor of Medicine and Clinical Director of the CARC's New Orleans Alcohol Use in HIV (NOAH) Study featured in this proposal. Dr. Ferguson is an Associate Professor and Program Chair in Epidemiology with extensive experience designing and managing cross-sectional and longitudinal analyses of clinical cohorts. She is also the Director of the CARC Data Analysis Core, providing fellowship training support for biostatistical modeling and analysis. With their history of collaborating with Dr. Edwards and Dr. Molina, they will continue to provide ongoing support for the proposed project (see **Letters of Support**). I also attend monthly CARC Intramural Center Committee (ICC) meetings where Drs Edwards, Molina, Welsh, and Ferguson are present and discuss clinical project updates, major research findings, and challenges inherent in human subjects research. **Aim 1 Study Designs & Timeline:** We are now increasing the number of animals per group as suggested to increase statistical power. Regarding potential carry-over effects in the within-subjects design, in addition to conducting a counterbalanced design, to minimize the compounding effects of delta-9-THC (half-life in rat plasma ranges from 1-7 hours across studies, although some THC may remain present in deposits such as adipose tissue), we will now test with 5-day intervals. To rule out the possibility that the anti-drinking and anti-hyperalgesic effects of THC are not a consequence of alternative effects such as natural reward or locomotor alterations, we will have the capacity to test the effects of THC on operant responding for sucrose and on locomotor behavior. We greatly thank the reviewers for highlighting these points. **Alternative Mechanisms for the THC Analgesia:** If analgesic efficacy of THC is established, we may conduct follow-up experiments to determine whether this is mediated by CB1 receptors via pretreatment with the CB1R inverse agonist rimonabant. THC may also act through pathways other than the endocannabinoid (eCB) system, such as the TRPV system (Muller et al., 2018), and follow-up experiments could also include examination of this system. We proposed administration of THC rather than targeting a specific eCB system protein as a matter of translational relevance. Previous research has shown that fatty acid amide hydrolase (FAAH) and monoacylglycerol lipase (MAGL) inhibitors reduce pain without cannabinomimetic side effects in rodents (Mulvihill and Nomura, 2013), but these substances have not been tested in humans. Nevertheless, these represent valuable alternative strategies for this proposal that are now emphasized. **CIEV-induced Escalation of Drinking:** Previous work has shown that chronic, intermittent ethanol vapor (CIEV) exposure produces symptoms of dependence at the acute (6-8hr) withdrawal (WD) time point (emphasized here), including a robust escalation of drinking in rats. Importantly, our lab has been able to establish such procedures in both male and female (see Figure 1) rats (Lopez et al., 2023). Future work may examine later WD time points to examine the persistence of these phenotypes. **Possible Positive Correlation between Alcohol & Cannabis Use:** We acknowledge that cannabis and alcohol use may exhibit a positive correlation (Yurasek et al., 2017), yielding the opposite of the hypothesized result. However, this will still provide valuable information, filling the gap in our knowledge about how THC administration affects alcohol consumption in an animal model of AUD. In addition, while the analgesic effects of THC have long been known, the analgesic efficacy of THC in the context of alcohol dependence is not well established. **Sex-specific Hypotheses of Pain Outcomes:** A meta-analysis of human studies has shown a stronger association between alcohol consumption and pain in females compared to males (Kanimi et al., 2022), while sex differences in the analgesic efficacy of cannabis have yielded mixed results (Redmond et al., 2008; Cooper and Haney, 2016). However, women display lower peak THC metabolite concentrations compared to men, suggesting that some THC actions may be smaller in females (Arnell et al., 2022). Thus, I hypothesize that female animals will show less reduction of alcohol consumption after THC administration and decreased alleviation of hyperalgesia symptoms compared to male animals. **Aim 2 Dose Effects of Cannabis on Alcohol Use:** Although we cannot measure the exact amount of cannabis consumed by the participants in the NOAH Study, the frequency of recent and lifetime cannabis consumption will be assessed by ASI and cannabis use disorder risk metrics by CUDIT. These variables will be examined in relation to self-reported and empirically determined pain symptoms and alcohol consumption metrics under the close guidance of Dr. Ferguson and the CARC Data Analysis Core.

Sponsor & Institutional Commitment



LSU Health
NEW ORLEANS

Finding the Right Sponsor

- Usually, your dissertation or postdoc mentor
- Generally, an NIH-funded investigator
- Demonstrated history of mentoring success
- Bonus: history of reviewing NIH fellowship grants

Red Flags & How to Overcome

- No NIH funding or expiring NIH funding?
 - Ask Department Head or Co-Sponsors for support
- Junior investigator?
 - Add a senior Co-Sponsor
- Doesn't want to help? Too busy?
 - You can draft their section for them



Shared Goals Between Sponsors and Fellows

In general, fellow success = sponsor success

In general, sponsor success = fellow success



How Well Are You Taking Advantage of Your Broader Research & Training Environment?



Academics at LSU Health

Pursue your passion at LSU Health Sciences Center. We are dedicated to preparing students for careers as health professionals and scientists.

[DISCOVER AN EDUCATION >](#)

Allied Health Professions >

Dentistry >

Graduate Studies >

Medicine >

Nursing >

Public Health >



Neurobiology Division
Department of Cell and Molecular Biology
2300 Percival Hall
Lafayette, Louisiana 70504
Phone: (504) 885-7100
Fax: (504) 885-7102
Email: bob@eggs.ars.ac.uk

Aditya G. Taneja, Ph.D.

April 7, 2017

Dr. Aditya G. Taneja
Department of Physiology
LSU Health Sciences Center
1915 Perimeter Street
New Orleans, LA 70112

Dear Aditya:

I am very happy to offer you post as a consultant on your proposed investigation into factors of synaptic vesicle trafficking, recycling, signaling in the development of vesicle trafficking, axonal branching and associated synaptic plasticity. As you know, I have spent the years of separate level spring, neuromuscular systems, with a focus on altered synaptic plasticity in neural pain signaling in a number of disease related conditions. I find your proposed investigation of a combined basic and clinical research approach in various model systems a promising in the capability to increase our understanding of the mechanisms of pathological signaling at the level of the synapse and the biological and clinical implications of your research, and the role of nature in the development and regulation of the system.

I look forward to working closely with you and Dr. Edwards to help guide this exciting research with the aim of increasing our understanding of a young investigator's leading role in the development of signaling in cellular and molecular systems.

Sincerely yours,

Aditya Taneja, Ph.D.
Professor of Cell and Molecular Biology
Perimeter Center for Neuroscience

LSU Health Sciences Center



2300 Percival Hall
New Orleans, LA 70112

Faculty, 2017

Dear Dr. Taneja,

I am writing to inform you that we have received your application for the position of Assistant Professor of Cell and Molecular Biology at the Department of Cell and Molecular Biology at the Louisiana State University Health Sciences Center. We are pleased to inform you that your application has been reviewed and we are pleased to offer you the position of Assistant Professor of Cell and Molecular Biology at the Louisiana State University Health Sciences Center. We are pleased to offer you the position of Assistant Professor of Cell and Molecular Biology at the Louisiana State University Health Sciences Center. We are pleased to offer you the position of Assistant Professor of Cell and Molecular Biology at the Louisiana State University Health Sciences Center.

The LSU Health Sciences Center is a leading research institution in the field of medicine, health care, and public health. We are committed to providing a world-class education and research environment for our students and faculty. We are pleased to offer you the position of Assistant Professor of Cell and Molecular Biology at the Louisiana State University Health Sciences Center. We are pleased to offer you the position of Assistant Professor of Cell and Molecular Biology at the Louisiana State University Health Sciences Center. We are pleased to offer you the position of Assistant Professor of Cell and Molecular Biology at the Louisiana State University Health Sciences Center.

I hope you will find this information helpful and please do not hesitate to contact me if you have any questions.

Sincerely,

Aditya Taneja, Ph.D.
Professor of Cell and Molecular Biology
Perimeter Center for Neuroscience

Parting Thoughts

- Fellowship grant writing is intentional, not accidental.
- You are surrounded by committed mentors.
- Use the grant writing process to shape your early career.

