

GSBS Office of Career Development

# Career Connections

A monthly newsletter highlighting  
career & funding opportunities



## **Collin Harlan, 5<sup>th</sup> Year Medical Physics PhD Student**

### **Fellowship: NIH F31 (Institute: NCI)**

*“<sup>129</sup>Xe Hyperpolarized Chemical Exchange Saturation Transfer (HyperCEST) MRI for Tracking Immunotherapy Delivery in the Lungs”*

**Opportunity Details: [PA-25-422 \(Parent F31\)](#)** The F31 is an NIH fellowship aimed at supporting PhD candidates conducting dissertation research in biomedical sciences.

### **From Training Grant Appointee to Fellow**

Collin was appointed to the [Cancer Nanotech T32](#) for three years. One of this grant’s requirements is to submit an F31 application. This expectation aligned perfectly with his research trajectory, making the F31 an ideal choice.

Collin’s fellowship investigates how to noninvasively and accurately track the delivery of natural killer cell-based immunotherapy to the lungs in osteosarcoma patients using magnetic resonance imaging (MRI). Current immunotherapy approaches have no means to verify that these immune cells localize appropriately, which can contribute to high treatment failure rates for pediatric metastatic

osteosarcoma. Collin utilizes nanodroplet labeling of natural killer cells combined with Xenon gas MRI to image immunotherapy delivery.

## Writing Accountability & Support: Keys to Success for Fellowships

The F31 requires 19 separate and unique documents for completion. Collin's application totaled 101 pages. He wants applicants to know that setting up a support system through both your peers, mentor and the graduate school are the best recipe for success. Collin specifically encourages his peers to take the [NIH Fellowship Proposal Development](#) course offered each Fall and Spring through the graduate school.

*"The combination of peer encouragement, structured guidance from GSBS, and mentor investment made the daunting process feel collaborative and achievable. [...] I credit much of my success to [the fellowship development] course—it gave me the framework, examples, and pacing I needed to complete the application on time."*

The sheer volume of writing for NIH fellowships can be overwhelming and Collin found himself losing valuable writing time worrying about what to write rather than writing—a common roadblock for any grant writer! To tackle this, he blocked off manageable chunks of time for writing in his weekly schedule. He recommends two essential questions to hold yourself accountable each writing session:

*"What will I get done TODAY?  
What steps will I get done TODAY to achieve this goal?"*



**Top: Collin (left) demoing a new hyperpolarizer as part of his research.**

**Right: Collin getting into the 2024 Halloween spirit in costume.**



## Learning to Love Writing: Fellowships & Career Development

Collin discovered a love of grant writing through this process. He highlights his organization skills and ability to coordinate scientific products as key factors in keeping his fellowship on track. His newfound success in scientific writing reinforced his career aspirations to become a clinical MRI physicist in academic research. He plans to obtain a position as a professor to combine his love for research, teaching, and clinical experience to shape the future of Medical Physics for the next generation.

*“Receiving this F31 fellowship will sharpen my MRI expertise, strengthen my capabilities as an independent researcher, and position me to make meaningful contributions to the field of Imaging Physics.”*



***Collin (far right) and the lab at the International Society for Magnetic Resonance in Medicine conference in Toronto posing in front of the CN Tower a.k.a. the Toronto Needle.***