

# Getting Academic Fellowship Positions

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FSPA Meeting

April 15<sup>th</sup>, 2026

## Who am I?

- Senior Scientist here at Fermilab working on NOvA and DUNE
- I started at Fermilab as a Wilson Fellow in 2015
  - Sidebar: I interviewed for a Lederman Fellowship in 2011 but didn't get it.
- I served on the Wilson Fellowship committee in 2024 and 2025.
- I have also been advising Fermilab scientists who apply for Early Career Awards since 2023.
  - The relevance of this will be clear later!

## What is an academic fellowship?

- Generally, these are “tenure-track” positions at National Labs where you can propose your own scope of research.
  - Exact equivalent title at Fermilab is “associate scientist”
  - Formally, they are “term” positions which can convert to positions without term limits, which is *not quite* the same as university tenure.
- Examples:
  - Wilson Fellowship – Fermilab
  - Panofsky Fellowship – SLAC
  - Raymond Davis Jr. Fellowship – Brookhaven
- Note when searching: most lab fellowships are actually postdocs
  - Panofsky, Mayer, Lederman, etc.
  - Often isn’t obvious in “marketing,” so read eligibility carefully

## Propose your own research scope

- Fellowships come with significant, but not infinite, freedom for your research program.
- You can propose anything, *but you will be evaluated* on what you propose.
- **Key:** does what you propose to do make sense **at that institution?**
  - Do your homework on their current program
- Example from my Wilson application:
  - My postdoc work was on T2K, and my university applications were T2K-focused.
  - Fermilab could not join T2K, so I proposed moving to NOvA for my Wilson app.
  - I still found points of continuity:
    - I continued work on DUNE I started as a postdoc
    - I proposed leading a joint oscillation analysis between NOvA and T2K

# How Wilson Applications are Evaluated

- Caveat: every committee works a little differently! This is my experience.
- Committee members read applications and form a “short list” of people to interview.
  - Usually receive in the 40-50 applications.
  - Shortlist is usually ~6 people.
- My “rubric” for reading applications:
  - Plans for future research
  - Leadership experience
  - Technical or instrumentation experience
  - Scientific analysis experience
  - Experience or plans for improving scientific culture
  - Record of publications and conference talks
  - Growth after starting from any disadvantages
- Interview typically includes a seminar and individual/pair interviews with committee members.

# What makes a compelling application? **An Exciting Research Plan**

- This is the arguably most important part of your application.
- **Have a plan that achieves promotion** (~tenure) on the appropriate timescale, ~5 years.
  - Should deliver exciting physics results and high impact from your work specifically.
- My advice on how to write this:
  - Explain why your idea is exciting, including to non experts
  - Include enough detail so experts can tell your plan could work
  - Have a timeline with deliverables/milestones
  - Have an idea of what your postdoc(s) will be working on
  - Have a balance between physics now and leadership in the future
  - Aim for ~2/3 of your research statement.
- Important note: this is “existence proof” for a plan:
  - You will not be held to doing exactly what you wrote in your application.
  - But if you can’t write a timeline that makes sense, that isn’t promising!
  - Remember this when you write grant applications, too!

# What makes a compelling application? **A Strong Track Record**

- The most important thing you can do to prepare is do high impact science!
  - Easier said than done, of course!
  - This part is more about what you have done than about how you write about it.
  - Remember, no one can do *everything*
    - I only had the most token of formal leadership roles before my Wilson Fellowship.
- But, it means it is important to be a strategic about what you work on.
  - If you plan to apply soon, now is the time to finish things instead of start things.
  - Working in neutrinos? It's a good idea to get involved somehow in DUNE.
- What to write:
  - Use your CV as a high-level summary of all of your accomplishments
  - Use your research statement to highlight how your background prepares you to execute your plan.
  - The most important parts of your record should appear both places

# What makes a compelling application? A Strong Track Record

- Here are some examples of things from your record worth highlighting:
- Strong signals from your collaborations
  - Formal leadership roles, major talks, etc.
- Strong publication record can mean a lot of thing:
  - Leading contributions on a very important paper
  - Important contributions which supported many papers
  - Collaboration publication of an analysis you lead
  - Short-author list paper on methods or hardware work
    - Impressive hardware accomplishments are more impressive if published!
- Leadership can take many forms:
  - Leading teams on your experiment, formally or informally
  - Mentoring students
  - Elected positions within collaborations, APS, Snowmass, etc.
  - Efforts to improve the field overall (equity, outreach, etc.)
  - Of course, formal convenorships, too

# How do labs positions differ from faculty positions?

- When applying:
  - Not actually that different!
  - Won't need a teaching statement, but the focus of both is really on your research plan.
  - Both are looking for evidence of accomplishments that support that plan.
  - Sometimes counter-intuitive:
    - In my experience, universities care more about having a major hardware project which will bring funding into the university, while the Wilson Fellowship cares a lot about publication record and physics output!
- When working:
  - You don't need to teach, you have a lot more time for research.
  - You don't need to apply for grants to support yourself and get postdocs to work with
    - But you will still be under a lot of pressure to apply for a DOE Early Career!
  - But, also not likely lead a large group of students and postdoc who you hire and direct.

Questions?