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Hi, I'm Dr. Evan Noch, and this is Research and Rounds, created by the National Academy of Medicine in collaboration with the American Physician Scientists association and the American Junior Investigator Association.

Here we explore the choices that shape physician-scientists' careers through candid interviews and practical guidance.

Today is all about choosing a research-track residency.

So let's get started.

Choosing a residency is really difficult for any medical student, and if you're also committed to a research career, where you train can even feel more consequential because it could shape your scientific trajectory and your professional opportunities for years to come.

You might be looking at physician-scientist training programs, or PSTPS, research and residency programs, specialty-specific or institution-wide pathways, or categorical residencies with strong research support.

And those labels are not standardized, so it's very difficult actually to find those when you're looking online or at particular program websites.

And the structure behind the name can also vary considerably.

I think the simplest way to frame the decision is this.

You're choosing an ecosystem, not an acronym.

The goal is to understand whether a program gives you the time, people, resources, and culture to keep developing as both a clinician and as a scientist.

And in this episode, I, I'm going to walk you through five questions that I would use to evaluate this.

So get out your paper, record on your notes app, on your phone, jot something down so that you'll remember these points after this podcast completes.

So first: what career are you actually trying to build? Before comparing programs, to find what you need from residency.

What kind of research do you hope to pursue, and does it require a particular patient, population, data set, method, core facility, or even a research team?

And do you need continuity with your current field, or are you open to changing direction?

The advice that I give my trainees is that you want to think about, as you're finishing your Ms. 3, Ms. 4 years, whether you want to stick to what you've been working on previously and build on that in the next phase of your career, or do you really want to switch directions?

Because this next phase may actually define what you spend the entire early part of your career doing and could inform what you're doing decades down the line. And also consider your specialty.

So in some fields, several formal physicians and scientist pathways exist, but in others, a named research track might be uncommon, unavailable, or just doesn't exist at all.

A national survey of 192 responding emergency medicine residency programs illustrates that variation because 41 reported a research pathway or track, but only 2 reported a dedicated physician-scientist pathway. In obstetrics and gynecology, for example, some current research opportunities are offered through institution-wide STAAR programs, and some even add time to residency.

These are really important points to consider when you're looking at the broad swath of residency programs available to you.

That doesn't mean there's no viable route into research.

It just might mean that looking for the categorical residency with the strongest mentors, infrastructure, flexible research opportunities, and record of helping residents move forward really is most important.

You don't need every detail of your future program figured out, but you should know enough to distinguish general enthusiasm for research from the support your work will actually require.

And in this day and age of the lack of support for many physicians and scientists, you really want to go to a program where you feel at home and where you're going to flourish during this next phase of your career.

Be honest also about how much structure you need.

Some trainees benefit from defined milestones, funding, and a clear transition to fellowship, but others might need flexibility because their research interests are still evolving.

When I give advice to my trainees about interviewing for their prospective residency programs, I talk a lot about, you know, what kind of lab they want.

Do they want a big lab?

Do they want a small lab, something like they worked in before or something, you know, very different?

And maybe, you know, what you had before worked really well, and you want to stick to the good thing.

And others might say, hey, I want to switch gears.

This didn't work for me at all, and I want to get on the right page for this next phase.

So number two: what is the pathway actually offering?

A program might use the phrase 'protected research time,' but that phrase can also describe very different arrangements.

What does protected actually mean?

Ask when the research time occurs.

Is it a few elective blocks, a continuous year, or a longer period during fellowship?

And does it add times in training?

And how does the structure meet board certification requirements?

If residency and fellowship are linked, is a fellowship position guaranteed, expected, or simply possible?

What happens if your subspecialty interests change?

So for those residents who are matching into a pscp, where you might match into fellowship at the time of residency matriculation, you want to know: are there any safeguards in place in case you change your mind?

Maybe you thought you were going into GI, and you choose to go hemonc, for example. Is the program going to understand that and allow you to succeed in the different pathway that you select?

Then ask what you are expected to accomplish.

Is it a feasible project, preliminary data, a career development application, or the beginnings of an independent research direction?

So what is the program expecting of you, and on what time frame?

Those goals require very different amounts of time, funding, and mentorship also.

So key, something we never learn in medical school: understand who supports your salary and research expenses, what additional resources are available, and whether protected time depends on outside funding.

If that funding is delayed, what is the backup plan?

So with funding uncertainty these days, you want to know that you're still going to be supported.

And so critical is understanding how your pay and your salary works.

Because when you get into your junior faculty phase, you're going to need to need to understand how your salary is supported and how you can do that with your own grant funding.

One key question to ask your program is: will they support the over-the-cap NIH salary?

And that is really critical. If you know that piece of information, that can sometimes help you make decisions down the line.

So this is where it helps to translate every promise into a calendar or percentage and a responsible person.

So how much fte, how much effort, how many months of time during the year will you need?

Will the people in your lab need technicians, postdocs, graduate students, et cetera?

The current NIH STAR model provides a useful example of specificity.

It requires resident investigators to commit at least 80% effort to research over 12 months for at least one contiguous year and up to two.

And that doesn't mean that every pathway should look like star.

It shows how concrete a protected time commitment can be.

If you're considering a categorical program without a formal track, ask these same questions.

What research time can actually be scheduled?

Who approves it?

What institutional resources can you access?

And is the plan written down, or does it depend entirely on informal promises?

So here's an example.

When I applied for neurology residency at Weill Cornell, there actually wasn't really any track that was advertised online.

But when I actually went to interview in person, back then we actually had in-person interviews.

They advertised that there was going to be a research track available for the year that I was applying for, and they were looking for dual-degree candidates for that spot.

So I asked a lot of questions, you know: how much research time would I have?

What kind of mentor can I work with?

And how was that going to dovetail with fellowship?

Now, it turns out I got almost a full year of research that was spread over PGY2 to PGY4 years, with really almost half of PGY4 being broken down into research.

And of course, the elective time was really scrunched together so that I didn't do as much EEG or EMG as other Residents.

But I was able to commit to time within the research laboratory.

But really interestingly, in my PGY-three year, my program director told me that he didn't think that he'd be able to offer me as much research time as he had promised me during my PGY4 year.

And he asked, you know, what can make up for that?

What can I do?

He said, oh, can I give you, you know, $10,000 to support your research?

And I said, well, that would be great.

I was at the time in a, in a very well-funded big lab.

And so that amount of money would not have made that much of a difference.

But I said would, would make a difference, was actually a research tech, a technician, because I'm so busy on the wards that it would be, you know, very helpful for me to have someone who could help me with my work.

And in the lab that I was in, this big lab, there were a lot of other research technicians that worked with postdocs that had their own early-career funding that helped defray those costs.

And he said, well, we can think about that, and you know, maybe I can talk to my chair or, or you can meet with the chair and see what he says.

And when I actually ended up meeting with my chair, he was so supportive that within a few seconds of me asking the question, he said, absolutely, we're going to do that.

And that was an unbelievable commitment from a clinical chair.

Right.

My lab was not in the same department to allow me to have technical support.

And that technical support carried me through about six years from when I was finishing my residency in PGY4 all the way until I was an instructor at Weill Cornell.

And so it was really critical for me to get that preliminary data that made me successful for some of the early-career funding, like K Awards. Number three:

Is your time going to be truly protected?

Residency programs operate under real clinical pressures, and someone has to cover the wards, clinics, consults, procedures, and call.

So it's not enough to hear that research is valued by when staffing is comfortable.

You need to know what happens when staffing becomes difficult.

So, you know, what if, for example, you're set to present an oral presentation at a big society meeting, and then suddenly you're called into jeopardy because someone's out sick?

Or what if you have a really key experiment, that the end of the experiment is due at 7 or 8 o'clock at night, but the person you're sending out to is late?

Who's going to let you complete those research milestones while you're really responsible for patients?

You want to understand the give-and-take of these programs and how much your research is going to be supported.

The best way to do this is to ask current trainees whether their research blocks were interrupted.

Are they still responsible for continuity, clinic call, or administrative work, and how often are they pulled back into service? If a conflict arises, who's going to advocate for them?

And leadership and trainee perspectives could differ.

In one internal medicine study, program leaders believed research opportunities were abundant and prioritized, but residents were identified.

Finding a mentor and lack of time as really major barriers.

And the experience on paper and in practice can be different.

So a useful question, and I love this, is: can you walk me through what happened the last time clinical coverage conflicted with a resident's research time?

So if you ask those questions, the program can give concrete examples of what might have happened when there was this conflict between research and clinical time.

A general reassurance is really not very informative, much less informative, but in a concrete example.

So get that concrete example of how this has been handled objectively in the past.

Also ask whether the program protects smaller forms of scientific continuity before a major research block, such as regular mentor meetings, research group meetings, or time to develop a protocol and analyze data.

So when you're on your research block, and maybe before you are going back onto the clinic, is there going to be time for you to finish up the work that you're doing?

We know residency is clinically intensive, and your research productivity is not going to look the same as it did during a PhD or dedicated research year.

But you should be able to see a credible path for maintaining your relationships and identity as a scientist.

The other key thing to know is that your mentor should expect that you're not going to be the same as everyone else in the lab because you're not always going to be there.

So, you know, if I'm in the lab, they might say, hey, where's Evan been?

He's been gone for two or three months.

Well, that is really what a research track is.

And so you want to make sure that you get a mentor who understands your phenotype and that you're not going to be toiling in the lab 24 hours a day, seven days a week.

But it might be post-call, it might be nights, and it might, at the minimum, just be blocks of time throughout the years of your residency.

Number four: who are the people, and what is the culture?

A formal track can't compensate for the absence of the right mentors.

Mentor is so key, and, you know, we're working on a lot of data these days to actually publicize really great benchmarks for what constitutes solid and robust mentorship.

So look beyond the famous investigators.

Ask whether several people fit your interests and have the time and experience to mentor someone at your stage.

A strong mentor matters because interests change, faculty move, and not every relationship works.

Also ask whether a potential mentor understands the realities of your clinical training, as I mentioned, and you're not going to be there full-time.

And the broader team in the lab should also understand that.

Has this mentor worked successfully with residents or other clinician-investigators?

And how are expectations about time, communication, authorship, and project scope established?

Is there a lab manual that might help document some of these policies within the lab?

And that experience of your mentor can really matter later because NIH review of mentored career development applications considers the mentor or mentoring team, the mentoring plan, and the institution's commitment to the candidate.

And when I applied for a K award, that was a really critical component that my mentor had previously mentored successful K applicants.

So ask your mentor that as well.

Look at the wider community.

Are there physician scientists in your specialty and at different career stages?

Is there support for project design, statistics, regulatory work, manuscripts, and grants?

And more recently, there's been models to actually give some research-track or PSTB residents technical assistance during the time when they're back in the clinic to allow their projects to succeed in their quote-unquote physical absence.

Mentorship is really not just a nice feature either.

In an evaluation of the Johns Hopkins PSTP, 86% of respondents identified access to mentors and program leadership as a reason they joined in the first phase.

So culture is harder to measure, but you can still look for the evidence.

Are physician-scientist trainees viewed as full and valuable members of the residency or as exceptions asking for special treatment?

Do leaders visibly support the pathway?

And do clinical faculty understand why research is part of the trainees development?

Does leadership know what current trainees are working on?

And are trainees even comfortable being candid about that?

Is there a process for addressing a mentor mismatch or loss research time?

A large research institution could provide more mentors, infrastructure, and opportunities for collaboration, but prestige or NIH funding alone doesn't tell you whether the environment is right for you.

You want to know that the leadership, the chair, they all support research because it's really important that the clinicians get that and also that the researchers within the department get that as well, that you're kind of doing both sides.

You're translating from the clinic to the bench and vice versa. A 2026 study found that MD-PhD graduates were more likely than MD-only graduates to match into departments with higher NIH funding.

But the author has emphasized that funding rank is only a proxy.

It doesn't actually establish that a program is going to provide the mentorship support or culture you need.

So at your stage in training, the mentor is so key because they're going to help you get from where you were to your independent research career.

So here's an example of a kind of culture that you might want to be a part of.

So in our own neurology PSDB program, we actually have lunch with all of the trainees in our PSTB twice a year.

And that's a way for them to get together and to compare notes on what's working in their research and in their clinical development.

As a junior physician scientist.

And actually what we found is that sometimes the trainees across different years don't even know each other because, of course, it works out that they may not overlap on clinical rotations, and they certainly don't know what each other is working on.

And recently, two trainees, one who was a year or two ahead of the other, one actually paired together on a grant that was related to their work.

One had the technical skills and the other was a subject matter expert.

And because of that, they were actually successful on a grant that now is supporting some of the work in each of their labs.

And so that was a really great example of how coming together as a community, joining a culture where you're not operating in a silo and that you can really get to know the other who research-track or PSTP residents can be a major benefit of that kind of program.

So number five: talk to the people who have actually taken the path and look for evidence.

And obviously, this is a key component of residency application process where you meet with the current residents and maybe even fellows and sort of ask them what's behind the curtain.

So during interviews, ask program leadership, current residents, fellows, and recent graduates some of the same questions.

You're not looking for identical wording; you're looking for a coherent story.

So here are five questions that I would write down.

So again, jot these down because these are actual questions that you can ask the residents and programs when you go to apply in ERAs.

So, one: if this is an established pathway, can you walk me through what happened to the last two or three residents who completed it?

So if it's new, what time, funding, mentors, and leadership commitments are already in place?

And how will trainee feedback from lead to changes?

So you want to know, like, what has been the success rate of these residents?

Have they gotten into fellowship?

Have they been been retained as junior faculty members?

How supportive is the department of the early-career residents?

Number two: when does protected research time occur?

Which clinical responsibilities continue, and what happens if service needs increase?

So we talked about that.

It's really important to actually understand how you fit into the whole scheme of the other residents.

How your time is different than theirs.

And also, will your time in research come from elective time so you might learn less about particular electives relevant to your specialty?

Or is elective time still guaranteed?

And this research time comes from clinical components?

Number three: how are residents connected with mentors?

And what support is available if the first match is not a good fit?

So will the program help you find these mentors?

Otherwise, how are you going to do that when there might be hundreds or thousands of potential mentors that you can access?

And really importantly, what if it doesn't work out?

Is the program going to support you to find someone else or are they going to tell you to make it work?

Number four: if residency and fellowship are linked, what's guaranteed, what's expected, and how much flexibility is there if your interests change?

So if you change specialties, if you change your research interest altogether, maybe you're going from a wet-lab-type research project to a dry-lab research project.

If they see you as a certain phenotype, are they going to be flexible to allow you to change that phenotype into your that might match your interests?

And five: what do current or recent trainees say is the hardest part of making this pathway work?

We all know these pathways are hard and they take years of rigorous training and commitment to the field to succeed.

So you want to know: what have they found that's been difficult, and what have they found in their own minds that's worked at this particular institution?

For an established program, listen for specific outcomes.

Did graduates publish?

Did they secure later funding, enter research-intensive fellowships or postdoctoral positions, move into suitable faculty or industry roles, or remain at the institution as junior faculty?

That is really the best mark of success of this kind of training path, is: did those residents get retained as junior faculty members?

And successful trainees need not follow only one rigid model.

But the program should be able to describe how it supported these different trajectories for a new pathway.

The absence of alumni isn't automatically a warning sign, but you have to understand that the mentorship structure is going to need to be in place in order for you to be successful.

And also to apply for those career development awards.

The National Surgeon-Scientist Training Pathway, for example, is launching as a pilot with eight institutions.

It can't show long-term outcomes yet, but it should show what is guaranteed, who is accountable, how progress will be evaluated, and how trainee feedback will lead to change.

Also, pay attention to what people do not answer.

If you hear a great deal about the institutional reputation but very little about the day-to-day experience of trainees, keep asking, and hopefully you'll understand, you know, what's really going on in that program and is there real structure to support the reputation that they're talking about?

And finally, include your own sustainability in the decision.

This is so important.

Geography, family or partner needs, finances, training length, call structure, and quality of life.

They're not side issues.

They really affect whether your career is sustainable.

So when you have these hard days, whether it's in the hospital, clinic, or in the lab, you know you want to come home to a support structure that can allow you to succeed.

Maybe you're moving very far away from your loved ones, but you also want to make sure that you have a support structure where you're located, that you meet fellow residents and make a community that allows you to be successful and take your mind off of the real rigors of the work you're doing.

In a national survey that my colleagues and I published, 63% of early-career physician-scientists identified balancing clinical and scientific responsibilities as a major career challenge, and 53% identified work-family balance.

The right residency is not going to remove those tensions, but it should give you evidence that the institution recognizes them and also helps trainees navigate them.

So you want to make sure they support the full aspect of who you are as a, as a, as a human being.

You're not just a researcher, clinician, scientist, but you're also a person who has a life outside of the clinic and outside of your lab.

So should you pursue a pstp, a research track, or, or another research-intensive residency?

There's not really a single answer.

A structured pathway could provide time, funding, mentorship, and continuity that is really hard to create alone.

A categorical program with the right support could offer more flexibility and, in some specialties, might be the strongest available route.

But the important thing is not to confuse the existence of a track with evidence that the track actually works.

Define what you need, understand the structure, test whether protected time is really protected, and evaluate the people and culture.

Speak with trainees who can tell you what the program is like in practice.

So important.

Remember those questions that we wrote down?

You're not simply choosing where to complete residency; you're also choosing the environment in which your clinical and scientific identities will continue to develop, and also where you're going to be spending a lot of your time.

So you want to make sure that where you spend your time is somewhere you actually want to be.

Look for a place where both are expected to grow.

Thanks so much for listening.

So, in case you don't have an audiographic memory, maybe you can't remember everything that we talked about in this podcast, or you're commuting to work, or in the middle of that critical experiment.

You can click on the link in the show notes to access everything I talked about and the references from the podcast.

This has been an episode of Research and Rounds.

Until next time.