Introduction

Dr. Jane Ellen Smith: Hello everyone, I'm really glad you're joining us today. I'm Professor Jane Ellen Smith. I'm a professor in the Psychology Department here at the University of New Mexico and one of the principal investigators on this project, along with Dr. Irene Salinas, who you'll meet shortly.

Just a few words and then we're going to turn it over to our Provost in a minute. But the in case you're wondering FIRST means, if you haven't looked it up on the NIH website, this is for Faculty, Institutional Recruitment for Sustainable Transformation. And that's the theme you're going to be hearing throughout today because we're not going to just be talking about making some wonderful hires, but we're also working on this project to help make some changes throughout the university so that we can continue to support and promote and help these new faculty become successful.

So, the this all started with an announcement, an RFA that came out from NIH that was interested in helping universities promote diversity and inclusive excellence. And they said we could define this in a lot of different ways, but they were looking for people who could show active participation in diversity efforts. So, these are the people who will be hiring, mentoring individuals from under-represented backgrounds. Maybe you would show volunteer activities and underserved communities. Maybe you'd be involved in a lot of outreach activities. Maybe you have been teaching diversity related courses. Maybe your actual area of research is at a topic such as health disparities, workforce diversity, or other Inclusive Excellence areas. So you can satisfy that main mission of this project in many different ways. And then of course, as part of your statement, you'd also talk about your personal trajectory in your scientific research career.

We always like to start off presentations with the land acknowledgment, which is a formal statement that recognizes and respects indigenous peoples as traditional stewards of the land.

And now I'm going to introduce Dr. James Holloway, who is the Provost and Executive Vice President for Academic Affairs because he'd like to welcome you all today.

Provost Welcome & Support

Dr. James Holloway: So thank you, Jane Ellen and welcome everyone to the University of New Mexico, albeit virtually. You've been watching some of the pictures go by of what is an absolutely gorgeous campus with a real Southwest flair to it. And that Southwest flare is really just a visual symbol of the truly amazing diversity and breadth of cultures that exist both in this state and on this campus. The University of New Mexico is flagship institution in the state of New Mexico. It is one of only 23 research one universities that is also Hispanic serving, were founding member of the New Alliance of Hispanic serving research universities, which in many ways I believe is truly the core group of a key academic institutions for the 21st century.

Because before the middle of this century, the entire entirety of the United States will be what University of New Mexico already is. Majority minority. The emerging American majority really is a multicultural, multiethnic, diverse majority. And UNM is that today. We're over 60% minority students. 35% of our graduate students are Hispanic. 50% of our undergraduate students, UNM has a large indigenous population of students as well.

And it's more than just their identities. It's what the identities of our faculty and students bring to this campus. If you get a chance to visit here as you wander around this campus, the visual representations of culture, the creation of belonging through a sense of place is incredibly strong. And within that, I think we positioned ourselves to research and think about research questions in ways that other institutions don't never have I been at an institution e.g. where indigenous knowledge is so, so thoroughly respected and pursued as a part of the research agenda of many faculty and students.

So again, I think this is a truly unique institution. There are very few places like it in the United States in terms of its intellectual diversity, it's cultural diversity, it's artistic diversity. And I'm really excited that you're interested in the NIH first program here and these potential positions and hope to see some of you on campus at some interviews and some of you on campus as new colleagues. So really looking forward to that and thank you.

New Mexico & UNM

Dr. Jane Ellen Smith: Alright, I'm going to say a few more things about the university and also about our particular program. And then I'll turn it over to Dr. Salinas, who's going to tell you some of the details of how we would work with new faculty and then we're going to move on. The second part will be more you'll be hearing from the search committee chairs or other members of the six stem departments that are involved. And we'll, I'm also going to answer some questions as we go along because we've been receiving questions.

As Dr. Holloway said, where R1 university, a Carnegie very high research activity institution and Hispanic serving institution. And one of the things we liked is that this call for proposals was talking about recruiting and retaining a diverse biomedical faculty workforce. And that's something that aligns directly with one of the missions of our university. And as we said before, it will also help move the entire university forward in terms of sustained inclusive excellence.

Well, we had to show you some of the fun things in the beauty and the culture of the state. Red or green, That's our state. Official question, red or green? Chile. You can have both if you want. But we have very unique cuisine, wonderful New Mexican food and also some native food. In terms of parks and outdoor life, outstanding, wonderful, beautiful parks. There's so much history here throughout the state. And if you like, outdoor life, not just the skiing that you can see here, we're world renowned for skiing like a Taos. But there are other ski areas, lots of places to go hiking, which are really wonderful. And the nice thing about Albuquerque, even though it's the city, you can get out of the city pretty quickly if you want to recreate. So we have wonderful opportunities for that. We're known for our international Balloon Fiesta, which we enjoy. And also of course, the rich cultural heritage and celebration. You can be involved in a number of different kinds of celebrations throughout the year.

FIRST Program & Goals

Just a few things about our specific aims as part of the FIRST program. So we're, we're UNM FIRST, we go by that name. So specific aim one, to recruit, promote, and retain a diverse cohort of biomedical faculty. And we'll talk about the departments in a minute. You've probably already heard what they are.

But as part of this, as we hire new people, again, it's not just to get them on board, but to help them be successful. And we've got a very elaborate program to do that, which Dr. Salinas will tell you about. But as part of it, the expectation is that we'll be able to work with new faculty so that they are able to

successfully get an NIH grant, like an R1 grant. NIH is very interested in that as early because that would not only support the new faculty members own career, but it also would help in terms of the university as well.

Specific aim two, to systematically transform UNM institutional cultural towards inclusive excellence. And you're gonna be hearing today a few of the different ways we plan to do that. So e.g. we've have plans to work with top administration in addition to Dr. Holloway, some of the other members of our leadership team that I'll be introducing you to in a minute. They're involved at different levels like we have the Senior Vice Provost and the Vice President for Research. They're all on special implementation board where we're gonna be meeting with them regularly so that any changes that occur at the individual department levels, they're gonna be transformed up the line. Whether it has to do with different ways to look at people's research profiles, different ways to think about promotion. So we're hoping that that's all going to be built in because that is truly the goal.

Cluster Hiring & Neuro/Data Science Qualifications

So, this is something new for the University of New Mexico. This cluster hire, we, we've never done this before, but this is one of the ways to recruit and retain excellent faculty. So, we're doing nine hires in the course of approximately a year-and-a-half. And the hires are in the general areas of neuroscience and data science.

And I know people have asked, Well, what area of neuroscience? It's pretty much open. Obviously, if you can fit in with some of the neuroscience or add to the neurosciences already going on in the departments that are doing the hiring, that's great. But it's really open as is the data science area.

The actual participating departments you see right here, biology, chemistry, math and statistics, psychology, physics and astronomy, Speech and Hearing Sciences. And you'll be hearing from each of them in a moment. And you can always individually email the search committee chairs and the department chairs. All that information is on our UNM first website.

And then just one more word about our plans to really promote an inclusive environments. This is a real commitment. And the people submitting the grant, we couldn't do this on our own and that's where we need to have all the great upper administrators involved. And they've been wonderful about trying to advance this plan.

Leadership Team

Let me introduce you to the fearless group here. This is what we call the leadership team. We're the ones who submitted the grants. So Dr. Salinas from the biology department, there's myself, Dr. Katie Witkiewitz from psychology. She's also the Director of the big substance abuse center in town, Casa, the center on alcohol substance abuse, and addictions. Then you have Dr. Barbara Rodriguez who you see here, and she's on the call today. She's a professor in the Speech and Hearing Sciences Department, but she's also the Senior Vice Provost. And then you have Dr. Julia Fulghum from chemistry, and I'm hoping she's gonna be able to join us and talk a little bit about advanced, which is a major NSF proposal that was funded years ago and now the university has wonderfully decided to keep, keep moving, that works with women in stem individuals. And she's also an associate dean.

General Application Questions

I'm just going to answer a few questions then about that have come up so that we know this might address some of the things that you have questions about today.

Research & Teaching: This is a position that offers protected research time. You'll have 75% protected research time, which means reduced teaching. Some individuals who are asking, well, is this a teaching position primarily? No, it is not. This is a regular academic tenure track position where certainly there's a major emphasis on research. You would be teaching as part of it, but the teaching load and the service load would be a greatly reduced. So yes, you would have your own lab. I know that that has come up.

Summer Money: And there's also some summer money included with this.

Startup Funds: People have said, well, what does generous startup mean? You folks are saying you're offering a generous startup. It really depends on the area that you're in. Neuroscience versus data science. Possibly a little bit the department that you were to come into. But the main thing is what are the person's needs? And so it's really hard to say, but it could range anywhere from approximately $500,000 in startup up to about $1.2 million. And startup. Now, obviously some of the higher amounts would be for folks who have great neuroscience needs, but we also have some shared equipment we're supplying as part of this. So that is something everybody could take advantage of.

Start Date: The start date is flexible. Just note that this March 1st is the best consideration date we fully expect to be having more recruitment periods after that. But of course, it's best to get applications in as soon as possible as far as actually starting then the earliest start date would be a year from now spring 2024. But you could start later. You can start up until a year after that. So we can be quite flexible in that regard.

Eligibility: A few questions about eligibility and then I will move on. You cannot have had a tenure track position already? Cannot. That's NIH. It says no. You can have been a research assistant professor but not in a tenure track position. These are tenure track positions we're offering. You cannot have been the PI on an R1 already or the equivalent. NIH has a list of other types of grant mechanisms that they consider R1 equivalents. And then they have they have two pages of ones that are not considered our row one equivalent. So you'd have to check that or check with us that it does want you to be early-stage investigator status in terms of time frame, how long you've been done with your training? I found out there's a little flexibility with that. So you should ask us about that.

International applicants: International applicants. Yes. As long as you're eligible or hold visa status, the H1B status? Yes. You are eligible.

Research affiliations: Yes. You can have affiliations with the veterans administrative medical center in town and we do have very good affiliations with that.

So I'm going to move on to the next and give Dr. Salinas some time to talk. Hi everyone.

Start Up Support

Dr. Irene Salinas: My name Dr. Irene Salinas. I just wanted to welcome all of you even if I miss seeing your faces because we're a webinar mode, but it's a pleasure to welcome you and to show you a little bit of our campus and our videos and just to introduce ourselves.

One of the joys of being a PI with Jane and also sharing the leadership team on this award is the fact that we are going to welcome everyone of you. We're going to give you everything that you need to be successful. That's just startup and space and everything else, but also the right environment for you to feel welcome to feel that you belong. To create a community here at UNM where we all support each other so that we can achieve success in different ways that we have done it in the past. And that's very highly related to that culture change that we are aiming to achieve.

So, we didn't mention, but part of the universe program in both three cores. One core is recruitment aspect with Jane is leading. Then we had the faculty development core, Dr. Rodriguez and I, we are the leaders of that faculty development core. And then we have a third core, which is the evaluation core.

So, we're gonna give you a little bit of a couple of minutes overview so that you are reassured that how much we will be taking care of you when you arrive and you become a junior faculty at UNM because we have spent two years carefully review and literature, our initiatives and our plans on evidence, science about how to better support junior faculty from diverse backgrounds.

Mentoring

Dr. Irene Salinas: And we are going to be developing new innovative mentoring programs that include not only more like formal trainings, but also peer mentoring and peer mentoring in circles. We are also going to be having a lot of social events. So, if you come here, you will have this pair and have some fun joining us and all of the events that we are planning.

We're also going to be having a whole research day for first hires to network with local other investigators, not only at UNM, but also in the broader Albuquerque scientific area, as well as the broader New Mexico area, as well as international partners, as we will show you in a second.

We're going to have a lot of workshops to help you be your best when you submit your arrow one. So that's gonna be grant writing workshops.

We are going to have invitations or NIH program officers will be regularly coming to this video to help you with your submissions. Actually, NIH has already assigned as a program officer that attends our leadership meetings regularly. And that person again, is in charge of sharing with us any new funding opportunities, is in charge of ones. Helping you with any navigating the R1 or any grant submission process that you may have. So you guys are gonna be in really good hands, are going to have a lot of support and resources to make your initial Assistant Professor years as easy as possible.

We're also going to be doing a lot of faculty success workshops along with ADVANCE, continuing to ADVANCE as well as knew others were first where we really want to emphasize that we really value interdisciplinary science, any collaborations among you as well as collaborations with others. And all of these efforts that are being implemented or lab partners.

First, we are going to work really hard with mentors to basically learn and implement this at the institutional level so we can become better supporting faculty from diverse backgrounds, not just for FIRST, but now on forever as part of our UNM missions. So we will be working with administration, again said, to institutionalize these programs across campus.

Collaborations

So here you guys see our partnering institutes so far. We mostly want to highlight one thing here or two things here, is that even if these nine positions are on our main campus, University of New Mexico main campus, we do of course, collaborate all the time with the Health Sciences Center.

So there's a Memory and Aging Center. There's a neuroscience department in the Health Science Center, what we call here north campus, because main campus where we're itself and we're just basically five-minutes away. We just need to cross one block walk up to the hospital and that's where the Health Science Center is. So we have a lot of people there who can be your mentors and of course collaborators and research partners.

We have an amazing Center for Advanced Research computer called CARC, which we all, most, all of us use in some shape or form because of course now is like the big data world. Whether you're a neuroscientist or an immunologist or you are a data scientist. You are going to have a lot of needs for super computer. And good news for you is that this is a free service available to all UNM investigators. So we provide these resources to everybody for free. And that allows you to conduct really large data analysis, big data analysis, without having to pay for storage or use of the supercomputers.

Then the two other things I want to highlight is that the national labs, we have amazing national labs with loads of resources and core facilities that are also going to be our partners. We have an amazing institute called the Santa Fe Institute, has also raised scientists and we are also having, are partnering with at least one international partner. The Champalimaud Foundation, which includes a lot of amazing world-renowned neuroscientist. So this network will of course, increase as we launch the program and we can keep incorporating other partners.

And also for you guys, we're going to have more, even more resources. We have an amazing external advisory committee formed by these five scientist, who renowned experts in different areas of neuroscience and data science. And the scientists will visit as once a year for our external advisory committee meeting, which will be kind of like a semi retreat with all of you and the leadership team and them. And they will be giving you feedback and advice on your size, grant proposals, any career advice, any formal or informal mentoring. So this is another layer of support that you will have once you're doing this.

And with that, I would pass it as Julia who will talk to you about ADVANCE and nice to meet you.

ADVANCE at UNM

Dr. Julia Fulghum: Thank you for coming. I am Dr. Julia Fulghum, I'm the Director of Advanced at UNM and a professor of chemistry and part of the UNM first leadership team. Advanced at UNM was funded by the National Science Foundation under the advanced institutional transformation program and is now funded by the institution.

We provide sort of three levels of efforts. One is confidential meetings with faculty candidates, faculty at all ranks. We're here. We want to understand how UNM works. Have questions about policy and process, e.g. things like parental leave, promotion and tenure spell some partner benefits. We can have confidential meetings on anything other than issues related to Title Nine and OEO.

We collaborate with the Faculty Research Development Office on workshops to help faculty be successful with their research and scholarship. And have workshops on every aspect of the promotion and tenure process, including workshops on how to prepare the dossiers, that is strategy and tips on writing through research, teaching, and service statements. But we've got other workshops that help you get to that point.

And we also work on policy and process and have been very involved in the pandemic impact response of the institution and supportive faculty.

So I encourage you to look at the Advanced website, advanced at UNM dot edu, or to send me questions about some of the services and resources that we have. And thank you for being here.

Question & Transition

Dr. Jane Ellen Smith: Okay, I'm gonna move on to introduce the presenters for the different departments.

One question came through though, that maybe I didn't make it clear that you don't have to already have an international folks got already have to have the H1B visa. You have to be eligible for it. So you just have to be eligible for that.

Okay, we're gonna move on now. And our first presenter today is for chemistry, Dr. Jeremy Edwards.

Chemistry Department

Dr. Jeremy Edwards: Hello. It's great to be here today and tell you a little bit about the chemistry department. As many of my colleagues know, I could probably talk about all the wonderful things that the chemistry department for hours. But I have just a couple of minutes to share a few highlights.

First, we're an average size faculty with 17 tenure track faculty in the department. Now, we're currently searching to build organic division. We cover all areas of chemistry. Research that we have specific emphasis on. Chemical biology is one of our special areas. And this includes research projects and neuroscience and data science. And I'll highlight a couple of those in a moment.

We also have quite a bit of computational chemistry work. We have faculty in the department working in drug discovery, discovery of new natural products, developing and applying new machine learning tools to biological systems. And developing various informatics tools such as the Pharaohs project, which I'll talk about in a moment for illuminating the druggable genome and any general advice for applicants. Basically, anybody using chemistry to study questions in these two areas would be a perfect fit for our department.

So, this just highlights a couple of the projects that are going on in the department. This first slide, a picture on the top left, that's from one of our assistant professors in the department, professor Yi He and doing a lot of outreach with high school students in the area. He does computational chemistry, protein folding drug discovery, and he does a lot of virtual reality demonstrations. And I think this is a photo of local high-school students participating in a program that he runs. He's also actually, him and another faculty member in the department are the PIs of a new first round they've offered it and NSF grant, which is a partnerships for research and education in chemistry, which really supports

partnerships between minority serving institutions NSF funded centers and institutes. And they have this and they're launching the program now, it's a really exciting opportunity for us.

Again, I only have a couple of minutes, so I'm just highlighting a couple of the neuroscience and data science projects we have. This is the Pharaohs project, which I'm the PI of. And this is basically a large Knowledge Management Center for illuminating the druggable genome. This is funded by the NIH Common Fund. And the goal is basically to develop a comprehensive and integrated knowledge base for the druggable genome. And primarily to illuminate the uncharacterized or poorly annotated portions of the draggable genome, focusing primarily on three different protein families, G-protein coupled receptors, ion channels, kinases.

This slide is just one example, and I've picked this example because it relates to a protein that is also being studied in the department that's pick one, which is an important protein that's involved in addiction. And one of our faculty members is studying this protein. And this here is the display from our Pharaohs database that's being displayed. And so actually I should have stated the website. It's a pharaohs.nih.gov. It's hosted by the NIH. And it's all about, as I said, illuminating the druggable genome and it provides all that is known about a protein and then it characterizes it into one of four categories. And this one here happens to be categorized into this T bio category. And this is quite important. There are many NIH funding opportunities that are restricted to funding proteins that are only in the TBI or the, particularly the T dark category, meaning very little is known about them. And the idea of this project is to really push more proteins into these other categories, Tchem and Tclin, we have new drugs developed for them.

And again, this is only just a small snapshot. I would encourage all of you to take a look at this. We get on the order of 4,000 hits per week to the website. It's highly utilized and really a core feature of what the NIH is trying to display now. And it involves a lot of data science as well as machine learning tools, artificial intelligence for understanding and interpreting all the proteins in the human genome. And I'm sure I've taken up all of my time now, so I will pass to the next one.

Morgan Pettit: This time we don't have any chemistry specific questions, but attendees, please feel free to submit and we can circle back at the end.

Biology Department

Dr. Jane Ellen Smith: So our next person up is, you're going to hear from Dr. Irina Salinas again is going to talk about the biology department.

Dr. Irene Salinas: Hello again. I'm a full professor in biology. I've been here for 11.5 years. And so I'll just give you a little bit of the overview of our department.

We are 32 tenure track faculty, probably the largest department in terms of the number of majors that graduate. A lot of our undergraduates majoring in biology as well as then have minors usually in chemistry, psychology, and actually Spanish is they are the most common combination by majors. The biology department is incredibly broad. So here's one of these departments that never got separated into ecology and evolution and cell molecular biology. So we all share our building which has three floors. And in terms of neuro related folks, there is a lot of expertise or more expertise regard to neurodevelopment, particularly neural blast and sulfate on how neural plastic or initiate into glia. Neurons. As well as folks are studying RNA binding proteins in the context of neurodevelopment.

Myself, I'm a neural neuroimmunology, my expertise is in neuron communication in their olfactory in brain access. So we, myself and another PI, we, we both have projects on our olfactory systems as well as new navigation behavior olfactory behavior.

Broadly speaking, in the department in terms of animal model organisms we currently have for working on Drosophila, zebrafish, and mice will have had people working in C elegans before. So other models, of course, are totally welcome. You don't need to be working on this. But we definitely have a pretty broad Fish facility for zebra fish. We also have, of course, the road and facility. And there's two or three Drosophila labs.

There's a lot of people in your department who are very good in big data and bioinformatics. From all sorts of angles and perspectives on a wide range of people who are interested in the host microbe interactions, including how that perhaps impacts the brain.

So, like I said this already, but all department, our graduate program is pretty large, we have about 120 graduate students. In our program, one of the beauties I would say about our department is how many opportunities we have for undergrads. And I think I would say this is probably true in any of our departments in arts and sciences. We have incredible programs that are already funded and ongoing so that they would allow you, once you get here to get undergrad working in your lab under this umbrella program. So, these include URise, which used to be called something else, but now it's just a change to your eyes. Will have thread, we have McNair, will have AMP, amp, which is actually funded by the university, the institution. So, all of these programs would allow you to have undergraduates who are paid and they can work in your lab for about 15 h a week or so..

So I also want to share that most of us we love, we are really of course devoted to science and research. And we all have this passion to do things that make our communities better and how often we integrate our science with our outreach efforts. And this is just an example of the Pueblo brain science that were started last year, unless the spring by Syed’s lab, as well as Matt Clark's law from Bucknell college. And they hadn't, Native American scientists come in and visit us and they spend a few weeks basically implementing and teaching them tools that can be taken back to their schools and their colleges and do neuroscience with very cheap resources that could be implemented anywhere basically. So without having fancy equipment, you could still run and neuroscience lab basically. And I believe he's just starting to do the second one of these initiatives will be happening in a month or two, again this spring. But all of us, we have of course, different our own outreach and science communication projects.

So, currently there's a lot of us collaborating with people at the Health Science Center. Like I said, just sometimes as using core facilities, sometimes is for actual grant submissions. We also have a lot of collaborations with physics. Mostly because we are starting to build an imaging core together with physics that is going to be a shared facility for all of you. And that's gonna be really almost tailor made for the needs of you nine hires. And we have institutional support to create that Imaging Center. We also of course have collaborations with chemistry.

So, in terms of just advise when you're preparing your application, is that because we are such a broad department, you know, whenever you're writing your research proposal, of course, it needs to be focused towards NIH on how you're gonna get your R01. But I guess don’t underestimate the importance of having an introductory paragraphs just a very broad intro of why is what you do insignificant in the broad perspective of biology as well was like the big picture of your research.

And if you have any more questions, of course, just emailed directly the head of our search committee, who is Rob Miller or myself, or anyone in the FIRST team. Thank you.

Morgan Pettit: Do have time for one quick question. For the biology department, is there any specific area of focus for hiring?

Dr. Irene Salinas: No. Because, I mean, this is the frame we, we need to in theory be a little bit flexible, but it needs to be neuroscience and data science. So those two fields are fine. We, yeah, any area it will be, it will be okay. And of course, it's strengthening kind of like the expertise that we already have is always more desirable, but we're going to be really flexible. And just thinking about you guys, this passion for mentoring and inclusive excellence and a good fit for research on the potential for you to get an R01, but not a specific area.

Math & Stats

Dr. Jane Ellen: Now on to math and statistics. So Dr. Owen Lewis, take it away.

Dr. Own Lewis: Hi. Thank you. I'm Owen Lewis. I am an assistant professor in the Mathematics and Statistics Department at the University of New Mexico. And I would like to thank everyone for coming today to this open house.

So just some very broad numbers with regards to the math and stats department. We have 24 tenure-track faculty. So that seems to be about middle of the road for the stem departments that are presenting today. We also are a fairly diverse department. We were never split up. So, our department houses pure mathematicians, applied mathematicians, and the statistics faculty, all in one department. We, therefore we offer graduate degrees in pure math, applied mathematics, and applied statistics, both masters and PhD levels. For all three. And then we offer bachelor's degrees in math and science. And we have multiple different sort of concentrations for the undergraduate majors. Depending on their interests. About 75 graduate students at about 125 undergraduates at any particular time. Those are rough numbers.

Then this has already been mentioned before. But anybody who would potentially be doing like data or even neuroscience in the mathematics department would want to know about computing facilities. And we do have large amount of computing support from the CARC, which is literally across the street from our department.

In terms of research happening within the departments, fairly broad array of research that may be of interest and overlap with you depending on where you fall in the neuroscience versus data science venn diagram, if you will. We have a fair amount of research with regards to neuroimaging taking place, particularly Dr. Earhart and Dr. Christiansen, who I'm going to talk about a little bit more on the next slide. People doing active research in areas of machine-learning, both from a theoretical and a more practical implementation perspective. So my colleague, Dr. Motamed, is currently running a graduate level course on like the mathematics of deep learning. And my colleague Dr. Schroeder has worked with national lab collaborators implementing parallel algorithms for machine learning, e.g.

We also have a fair amount of people who are interested in uncertainty quantification and issues like that. And then we also have a small mathematical biology group as well. So that's actually, that would include myself. I don't necessarily do theoretical neuroscience. I do more biophysics related problems,

but we do have a mathematical biology group. And in fact, my colleague, Dr. Wearing, has a 50/50 appointment. She is technically a professor in the math department as well as the biology department. So, there is a sort of historical precedent for interdisciplinary positions like this.

And there's a lot of opportunity for collaborations outside of the math department. I really want to emphasize this. This is one of the strengths of our department is the vast array of opportunities that are provided.

So, we have people actively working with the mind Research Network, which is sort of on the other side of the hospital, if I'm not mistaken, is where they're housed. Dr. Christiansen and Dr. Earhart, who I mentioned with regards to neuroimaging. And these are not like collaborations in name only. These are very close working relationships. In fact, Dr. Earhart, I wrote this down so I wouldn't get it wrong. He is the Director of biostatistics and neuroinformatics core for the Center for Biomedical Research, Excellence in the brain function and mental illness section of the mind Research Network. And so there's the mind Research Network. There is the Health Sciences Campus across the street. And then we also have many active collaborations with a bunch of the national labs nearby.

Then just I wanted to sort of highlight some other interesting things, particularly with regards to undergraduate research and community outreach that have been happening in our department for awhile. So, we have been hosting and running the state math contests for 50 years. This is an ongoing thing. Faculty members involved heavily every year. There's a whole array of undergraduate research programs which are not necessarily mass specific, but we intersect with them very regularly. And I'm going to come back to them because that's sort of where I want to end.

My colleague, Dr. Nietzsche is actually the founder of the Southwest Undergraduate Math Research Conference, SUnMaRC, which provides an opportunity for undergraduate researchers to present all across New Mexico, Arizona, southern Colorado, and I believe Utah, possibly as well. And historically we have actually been awarded several times the NSF mentoring through critical transition points in Mathematical Sciences grants. So my colleagues, Dr. Nietzsche and Dr. Perry had been heavily involved in that. Although unfortunately the COVID pandemic sort of put the kibosh on some of these programs.

But just really quickly I wanted to come back. I think my time is essentially up, but I wanted to highlight some of the undergraduate research programs here at UNM. Assure it provides funding for undergrads who want to work with you on some project. You make a smaller you make a small proposal and it can support them on a salary.

Then the McNair Program is actually really spectacular, in my opinion. It is specifically targeted to help undergraduates who are either first-generation college students or underrepresented minorities matriculate not just to college, but further on into graduate programs. So they are required to do a research project with some faculty member. But there are also provided with a bunch of support to help them get into and succeed in graduate school, things like undergraduate research conferences, application writing workshops and things like this. This picture here is actually slightly, I'm bragging here. This is a former McNair scholar from the University of New Mexico. She did research program with me. Her name is Valerie Fong. She then the program we worked on turned into an NSF graduate research fellowship proposal which was funded. She is now studying theoretical neuroscience at the University of California, Davis in their Applied Math program. We're all extremely proud of her. But there is sort of, I

would say, this rockstar level of talent available and there are support systems for them to work with you. And now gone over time. So I believe I will give up the floor.

Physics & Astronomy

Dr. Jane Ellen Smith: Now we're going to physics and astronomy. And Dr. Keith Lidke will take from there.

Dr. Keith Lidke: Thank you. So, we are a combined Physics and Astronomy Department and we're somewhat of a nontraditional department in the sense that many physics departments are dominated by condensed matter and high-energy physics, experimental and theoretical.

Where our department is a little bit more diverse scientifically. We have a as being a joint with astronomy, we have a strong astronomy program. Radio astronomy is big in New Mexico with the VLA down in Socorro and other radio telescopes there. We also have, through physics and the ECE department jointly run Optical Science and Engineering degree program. One of the oldest optics degree programs in the country. And it brings in students that may not have a physics background, but an engineering background or who want to focus more on optics. And we have, I think about eight people in our department right now that either user focus on optics.

We've seen some of the programs described for the university's undergraduate programs, but our department also has a few specific places where we tried to get undergraduates involved in research. So, our program has an NSF research experiences for undergraduates program, NSF RU program. So, the picture on the right, I believe is some of our students that managed to hike to the top of the, it looks like the Sandia's, which is a tough hike. On the left, is a student that was in our program last summer for a quantum experimental quantum information research Q reach program. The other area where we have particular strengthen the department is that our quantum information science program. And I kind of touch a little bit on that through quantum metrology with a very good connections to the labs and other departments around campus.

Where we think somebody might come in for the first program into the physics program is likely through some type of computational imaging or image processing, something with machine-learning cell tracking, et cetera. I personally do fluorescence microscopy and a little bit of Robin microscopy, including super-resolution, single molecule imaging and hyperspectral microscopy. And we have a new tenure-track faculty who does light sheet microscopy. So, he's building instruments that can image very large samples, either live samples that are cleared samples, both large volumes and high-speed. And we think these techniques could be of interest for the potential hires doing imaging.

As Irene mentioned earlier, we are also setting up a new imaging core in our building that is located near my end, Tonmoy, in his lab. He is our light sheet developer that will house some of our unique instruments that can better develop to do super-resolution microscopy. And also hold commercial instruments like a confocal microscope. And that's in progress at the moment. And then we hope to be able to show that off to people when they come and visit us. I think I'll stop there.

Psychology Department

Dr. Jane Ellen Smith: Thank you. Next up is the Psychology Department and I'm going to turn you over to my colleague, Dr. Jeremy Hogeveen.

Dr. Jeremy Hogeveen: Hi, everybody can hear me. Okay. Got to headphones on. I just want to make sure. Hi. I'm Dr. Jeremy Hogeveen. I'm from the Department of Psychology. I'm an assistant professor. I started in about 2018, so relatively recently set up my lab here. So, for folks that have questions related specifically to the process of getting a new lab up and running, I'd be happy to provide some input there. Although I didn't have nearly the startup you guys might have.

So, our mission in psychology, we are a few different areas. We have a clinical area which has some world-leading clinical psychologists and clinical scientists, primarily. We have an area on evolution and development. And the area that would probably interface the most with neuroscience and data science would be our folks, including myself, in cognition, brain and behavior. We have 25 faculty across all these areas, with nine of us in the CBD area. our mission overall is to discover and disseminate knowledge about psychological science. That's kinda what unites the folks from across those areas.

One thing I wanted to make sure I had a chance to make a note of. We recently put forward to the college potential new area, which is a bit of a mouthful. So bear with me, diversity and health data science across the lifespan. The idea is to integrate topics related to diversity science, data science, as well as developmental science. And really taking a multimodal approach that some of the big questions that we're currently asking in psychology and neuroscience. And it's something that is going to be housed primarily by folks already in our department. But obviously for people coming into this higher if they overlapped with that area we'll focus on in the future that would that would be a great fit in our building, our building there on Logan Hall.

We have psychology clinical neuroscience Center or the PC NC, which is the whole second floor of our building. It was renovated, I believe Jane was a huge part of the renovations, so I don't know if I have the history 100% correct, but I'm gonna guess 2013 based on what I could get from online. So, it's almost a decade old and it's really got cutting-edge research resources available for human research. So, we have high-density EEG, noninvasive brain stimulation tools like TMS and TDCS, as well as really good computing resources in addition to wonderful resources for doing animal models. So, we have an animal research facility just across the hall from where my lab is, where they do electrophysiology. They do dreads and other really elegant behavioral paradigms. It's a really nice intersection of animal and human, rodent and human and researchers there.

I think the one point I really want to emphasize about psychology, and I guess UNM, as a whole is you have access to truly world-class resources without an insane level of competition to access those resources. So, you can really develop and test your hypotheses and your research questions independent of the tools available to you, because you can just assume there'll be the stuff I need to get this research done somewhere on campus and I'll have access to it. So, I feel like that's been a really good boon to getting my lab setup at UNM. We can move on to the next slide. In psychology again, these centers have all been mentioned already. I just want to really highlight how they interface with psychology. So, the Mind Research Network, which has been interfacing with a lot of the departments, specifically for anybody who does human cognitive neuroscience. It's a really wonderful world-class facility with magnetoencephalography, MEG scanner, which is super expensive. And how many of them? We have one really great. We have a nice 3D Prisma, Siemens Prisma MRI scanner that's available to us for research dedicated scans. The MRN has basically been the place I've run all my experiments, as I said in my lab. So all my subjects have gone through there. It's been great to work with them. Truly great collaboration.

I've also done a lot of collaborative work since starting in psychology through our department of neurosciences at the med school campus, which is really close by to our facilities and has wonderful resources available for, again, electrophysiology, histology, all sorts of low-level neuroscience tool.

And I guess the last piece, I'll just highlight CARC again, the Center for Advanced Research Computing. Everybody in neuroscience and data science has too much data on their hands these days. These high-performance computer resources are key to storing and analyzing those data. And what I'm showing here is actually that the majority of this particular grid happened to be totally unused when I checked. Suggesting that when you need to use the grid, the queue time is relatively small compared to some of the other places I've worked with HPC is in the past. So again, really world-class resources and access to those resources is the main thing I want to emphasize for psychology and all of our departments here. So that's it for me.

Speech & Hearing Sciences

Dr. Jane Ellen Smith: We're going to quickly move on to speech and hearing we know are about out of time. We're hoping you can stay on board. And here is Dr. Jessica Richardson.

Dr. Jessica Richardson: Hi there. I'm Jessica Richardson. I'm an Associate Professor in the Department of Speech and Hearing Sciences. I was selected to represent my department because of my research in both neuroscience and data science. And because my kid things, I'm famous on Google.

But seriously, I know that we're going over here. I am at the end because we just happened to start with an S. So, I'm going to do my best to still take up the full five-minutes. Our department mission is here for you on this slide. And it is well part of it is, well we have three more pieces related to our clinical training programs, but I'm not going to focus on that. But to create and disseminate knowledge about communication sciences and disorders. And to create a culture of research achievement to support the clinical evidence base. And we're pretty passionate about that.

As you can see here, that the scope of practice for both clinical practice and research for folks in and around Speech and Hearing Sciences is just huge. And more importantly, and I think what gets us out of bed in the morning impacts the everyday lives of people who are often vulnerable. Here in SHS, we have a rich environment for diverse research with lots of intersections between neuroscience, data science, communication science, swallowing science and disorders, and across the lifespan.

This slide, I think it's not going for me, so someone else can do it. It shows just a few of the resources that facilitate and demonstrate our excellence here. And SHS, you can see a listing of some in-house physical tools and intellectual resources ranging from brain stimulation to neurophysiological recording to eye-tracking and more.

And if you can click again, there are many more resources that are available to us through existing collaborations developed and fostered by current faculty. And this is either through research collaboration or executive roles. E.g. I'm an outreach director and an Interim Clinical Director right now for the Center for Brain Recover and Repair. I'm also a core lead for the New Mexico Exploratory Alzheimer's Disease Research Center. We have collaborative projects with CD, with movement disorders center. So, a lot of this stuff already exists. Then what this does is it opens you up again to, as Jeremy mentioned, lots of other resources that are here. MRI, Fnears TMS and so on.

And I know you're enjoying these photos. And I just wanted to point out there our very own faculty, staff and students working in our department. They are not stopped photos from the Internet's. We're really doing these things and we're really active in this type of research.

This last slide is just a few other things to highlight our awesomeness. We're already productive and neuroscience and data science research. This gray list here is just a partial list of some of our projects that we have going on from data science projects including aphasia Bank, swallow bank. We're involved with professional athletes, brain health study, brain stimulation studies, and several clinical populations, machine-learning studies for acoustic and linguistic factors to detect or predict disorders, white matter, CNS changes in Pompeii disease and more.

Another advantage is we hold a secondary appointment with the department in the UNM School of Medicine and the division of Physical Medicine and Rehabilitation. And that eases the way for some access, sometimes to the School of Medicine. We enjoy and we constantly learn from a diverse student body and campus. We work alongside a very busy clinic with talented and collaborative clinical faculty.

If you're applying for our corner of the campus, be sure to highlight your fit and also be forewarned that we'd like to cheer each other on. We like to support one another and we'd like to collaborate. E.g. we just put out a paper on professional fighters and repeated head injury with three of our tenure faculty and a student and a recent manuscript with a research faculty in clinical faculty collaboration. And this isn't unusual for us. This happens several times a year. So, follow up with us and check us out and that was 4 min.

Wrapping Up

Dr. Jane Ellen Smith: Okay. We're finishing up here. I know we're over time, but just to and then you can continue to send questions in that.

So, don't forget best consideration date coming up. We will be interested in applications after then. If there are positions that still need to be filled, we assume there probably will be. There's how you apply. Don't forget to do the whole complete application because we cannot look at it if you don't. And I think we'll end it there. I'm going to turn it back to Morgan for a minute there.

Morgan Pettit: Alright, everybody. Thank you. And thank you to our panelists who have answered over 35 questions during that time. If we did not get to your questions, we did write down all of these and we'll share the ones that we think are most relevant and applicable to share. We will put this on the website, gives us a follow-on social media. And we look forward to you applying and we hope you'll become a Lobo. And thank you so much for joining. Thank you everyone.