PHYSICS FLASH

Winter 2023
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INSIDE

Anemarie DeYoung receives Laboratory's Fellows' Prize for Leadership

Anemarie DeYoung (Applied and Fundamental Physics, P-2) was awarded a 2022 Laboratory Fellows' Prize in Leadership for "the success of the Neutron Diagnosed Subcritical Experiments (NDSE), and her role in leading her team to rise to a significant level of scientific and technical achievement."

Through DeYoung's scientific leadership and persistence, the NDSE concept has gone from a long-considered idea to a reality that is now contributing significantly to the nation's stockpile stewardship program.

The Fellows' Prizes have recognized outstanding research since 1988 and outstanding leadership since 2003. Prize winners are highly valued by the Laboratory and continue to serve as world-class senior scientists and managers.

DeYoung was the principal investigator for the NDSE Laboratory-Directed Research and Development-Directed Research project "$k_{effective}$: First measurement of a nanosecond-pulsed neutron-diagnosed subcritical assembly," the success of which advanced the diagnostic into a new subcritical experiment named Excalibur, scheduled to be fielded in Nevada in the next few years.

NDSE is designed to measure nuclear reactivity in compressed plutonium pits, a direct metric of the capability of the pit. This new type of experiment—one that can make measurements that haven't been made since the cessation of underground testing—is going to provide new insight into the conditions inside exploding nuclear weapons. Science-based stockpile stewardship is how scientists ensure that nuclear weapons remain safe, secure, and reliable [LANL *1663*, Sept. 2017].

At Los Alamos, DeYoung has served as a team lead and deputy group leader in Physics Division, whose members have led experimental and analytical research and development efforts in ejecta, radiography, subcritical experiments, and underground test data reanalysis. Prior to joining the Lab in 2003, she was a senior manager for science technology at Polaroid Corporation and a scientist at NASA Ames Research Center. She holds a PhD in physics from Harvard University.

Through Anemarie DeYoung's scientific leadership and persistence, the Neutron Diagnosed Subcritical Experiments concept has gone from a long-considered idea to a reality that is now contributing significantly to the nation's stockpile stewardship program.

Also receiving a Fellows' Prizes for Leadership were Juan Duque (Physical Chemistry and Applied Spectroscopy, C-PCS), Brian Jensen (Shock and Detonation Physics, M-9), and Robert Steiner (Nuclear and Radiochemistry, C-NR). Tariq Aslam (Physics and Chemistry of Materials, T-1) received the Fellows' Prize for Research.

Technical contact: Anemarie DeYoung ■

Los Alamos NATIONAL LABORATORY

> "In the division office, we are working to ensure that the most important work is accomplished and that this work is supported by our management team. Please let us know (the management team) if you run into problems that we can help with. What you are doing is important!"

From Frank's desk . . .

Happy New Year!

With 2022 advancements "in the bag," it has been a good time for me to reflect on the many accomplishments within Physics Division. There have been many areas where Physics Division has made significant progress, but one of my personal interests has been watching the march towards ignition at the National Ignition Facility (NIF).

This progress, which occurred over several decades since the idea was first proposed, has been fascinating to watch, especially in the last decade as NIF experiments were executed. The largest breakthrough may have taken place in August 2021—igniting a DT plasma—but in December, NIF performed an experiment that met every criteria I know of that has been proposed as the threshold for ignition. This led to the press release from NNSA in late December, which was also fascinating to watch as I was able to see many of our friends and colleagues in a very public forum.

Physics Division has contributed to this achievement in many ways over the decades—funded by the Office of Experimental Sciences, Inertial Confinement Fusion program. This has included the advancement of plasma science knowledge and the development of diagnostics and analysis techniques that were required to guide this effort to ignition. Many have contributed over the decades and many can be proud of this very exciting achievement. I'm a little concerned about the mantra that I have heard over the years—"ignition before retirement"—as I hope to not experience a wave of retirements, but retirement is not required by this quote.

My thoughts quickly move from the accomplishments of 2022 to the significant and important work that you have planned for 2023. In the division office, we are working to ensure that the most important work is accomplished and that this work is supported by our management team. Please let us know (the management team) if you run into problems that we can help with. What you are doing is important!

Thanks and Happy New Year (again),
Frank ■

Give a warm welcome to ...

In their own words, some of the division's newest members introduce themselves and share their impressions so far of their Lab experience. If you see these new faces in your area, be sure to say hi and introduce yourself.

Physics Flash will continue to introduce new members, so watch this space for details on future newcomers.

Veronica Camarillo

Computing Systems Professional
Applied and Fundamental Physics (P-2)

The Prompt Diagnostics team is responsible for the archiving, reanalyzing, understanding, and communication of diagnostics from underground testing. Our reanalysis includes gamma- and neutron-based diagnostics. The work produced by the P-2 Prompt Diagnostics team directly correlates to the Lab Agenda's experimental advances critical outcome and is a contributing factor for guaranteeing the assessment of our stockpile without the need for nuclear tests.

I have the privilege of working with some of the most talented, knowledgeable, supportive people of my career. It is an honor to be part of a team that is dedicated to the mission.

Crazy about (not) hairy
I have a love for dogs with the FOXI3 mutation (a hairless trait) and am particularly fascinated with the Xoloitzcuintle (a hairless dog breed).

Hugo Pereira Da Costa

Scientist
Nuclear and Particle Physics and Applications (P-3)

I work as an experimental physicist on both ongoing and future high energy particle physics experiments dedicated to understanding the strong interaction between quarks and gluons. As such, my works supports the Lab's mission for understanding the fundamental laws of the universe and, in particular, the properties of nuclear matter and of the strong interaction.

What I enjoy the most about my work here is the excellence and friendliness of the team I work with; the ability to participate in large international collaborations; and the trust I have been given to conduct the research I like within this team and collaborations.

Deja vu all over again
I first came to the Lab about 10 years ago as a guest scientist from the Saclay Nuclear Research Center in France to collaborate with P-3 (then P-25) physicists on PHENIX (Pioneering High Energy Nuclear Interaction Experiment) at Brookhaven National Laboratory. Ten years later I came back with my wife (herself a new hire in 2019) and child, again first as a guest physicist for about two and a half years and now as a full hire.

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Give a warm welcome to cont.

Jim Dowd

Scientist
Thermonuclear Plasma Physics (P-4)

I was drawn to Los Alamos because of the importance of its mission and the dedication of its workforce.

All support-systems go
The Lab is an incredibly welcoming place to work, where everyone is very friendly and more than willing to take a break from their own work to help a colleague with a question.

Megan Gabrielle Espinoza

Administrative Assistant
Dynamic Imaging and Radiography (P-1)

The work I do helps support the Lab's mission because I am a point of contact for many administrative tasks that help managers, students, and scientists get their jobs done and make their jobs easier. I think of our work as an engine: every part, whether big or small, has a job to ensure that the engine works correctly and efficiently.

I enjoy the work I do because it keeps me busy and there is never a dull moment. I also love helping people, and I get to do that every day in my group office.

I chose to work for Los Alamos because I have worked for other companies and none of them compare to working here. I love my job, the environment, and the people I am surrounded by every day.

Sweet on chocolate concoctions
I love to do chocolatier work in my free time. I like to make chocolate confections for friends and family and have recently gotten into learning about chocolate sculpting.

Matthew G. Fresquez

Research Technologist
Dynamic Imaging and Radiography (P-1)

I started at Los Alamos in the summer of 1996. I was hired for a two-month summer internship with (then) P-24 while studying electronics at Northern New Mexico College. I did not know that my summer gig would turn into a lifelong career. I am grateful that the engineer I interned with valued my skills and work ethic and kept me on full time that summer.

I've met a lot of good friends along the way and learned so much in my field of work. I have about 25 years of experience in high-voltage, high-current, and pulsed power. I worked on the accelerator at the Los Alamos Neutron Science Center for about 20 years and the Dual-Axis Radiographic Hydrodynamic Test Facility for two years.

Continuously curious
I am looking forward to the opportunity to work with proton radiography in P-1. I plan to continuously learn more, hopefully meet some more good people, and enjoy the rest of my journey with the Laboratory. It has truly been a rewarding place to work.

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Give a warm welcome to cont.

Cathleen Fry

Scientist
Thermonuclear Plasma Physics (P-4)

One of the things that really drew me to the Lab and made me want to stay was the breadth of knowledge available to me. It seems like there's someone that can help with almost any sort of problem, and that those sorts of collaborations across organizations are encouraged.

Hands-on pastime
In my spare time I like to spin my own yarn and knit with it.

Panos Gastis

Scientist
Nuclear and Particle Physics and Applications (P-3)

My work is focused on the study of nuclear reactions relevant to nuclear technology. Providing detailed information on the characteristics of reactions, such as neutron-induced fission, is important to a number of applications, including nuclear reactor design, nuclear waste management, and the stockpile stewardship program.

Kókkivo or green?
My hometown in Greece is famous for producing red peppers! Roasting peppers and making "paprika sauce" in the fall is part of the local tradition in my hometown, so living in New Mexico and seeing people roasting peppers every year is really nice and reminds me of my childhood.

August (Gus) Keksis

Scientist
Applied and Fundamental Physics (P-2)

I started as a postdoc in 2007 at Los Alamos studying cross sections at the Detector for Advanced Neutron Capture Experiments at the Lujan Center. In 2009 I was converted to staff in the Nuclear and Radiochemistry group and have spent over a decade studying radiochemical diagnostics and laying out a plan for their future. Earlier this year I started collaborating with P-2's Prompt Diagnostics team, and when the opportunity arose to join it, I took it. I want to continue supporting all diagnostics to help make them useful and accessible for the design community.

I also worked for over two decades on archiving historic nuclear data—developing and organizing digital archives to make historic data easier for users to access. I hope to continue working with Weapons Research Services to populate the National Security Data Solution archive.

Nuclear history buff
I enjoy learning about nuclear history and visiting locations such as Trinity Site (pictured at left), the Nevada Test Site, Manzano Base, Manhattan Project sites, Lawrence Livermore National Laboratory, and Oak Ridge National Laboratory (to name a few).

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Give a warm welcome to cont.

Erin Mavis

Research Technologist
Dynamic Imaging and Radiography (P-1)

I love the group of people I work with, their patience with all of my questions, their humor, and the wealth of knowledge that they are all more than willing to share with others.

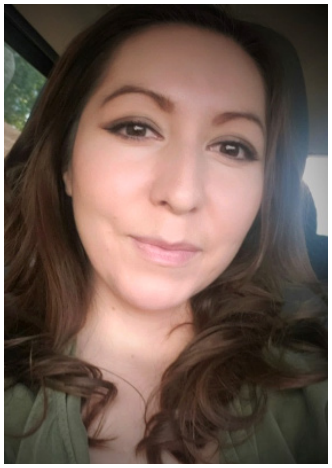
From baking to making
I originally started school to become a pastry chef and ended up getting a degree in mechanical engineering instead.

Elise Tang

Scientist
Dynamic Imaging and Radiography (P-1)

The first time I came to the Lab was as a Lujan Center user early in graduate school. It was really exciting for me to be at a place with such history while doing interesting new research, and I still have that feeling now. As a physicist I am especially happy to be working in Physics Division on projects that have both programmatic and scientific merit in a field that I have always loved.

When not at work ...
I like to hike, mountain bike, ski, and snorkel wherever and whenever I can.



Vanessa Tapia

Administrative Assistant
Nuclear and Particle Physics & Applications (P-3)

I moved to Los Alamos because I appreciate the focus on employee well being and family health.

I have spent the majority of my adult life working within the medical industry in one way, shape, or form—with an extended concentration in traditional Chinese medicine, which focuses on transfer of energy (qi). I have since enjoyed learning that in physics, force causes a transfer of energy referred to as "work," which can be positive or negative. Everyone here has been exceptionally welcoming, and I am very excited to think that my new role at Los Alamos will "force" me to do positive work.

Know when to hold 'em
I was once an avid poker player. I used to enter tournaments every weekend and won my fair share.

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Give a warm welcome to cont.

Nina Thompson

Staff Operations Manager
Physics Division (P-DO)

I joined the Lab to do work that has an impact on our futures. I believe in the mission of what we do here at Los Alamos and I'm proud to be a part of it.

Expert handler
I was once a national champion and world-class baton twirler and dancer.

Dawn Umpleby

Administrative Assistant
Applied and Fundamental Physics (P-2)

After a distinguished career in the investment management industry in the eastern US, I realized my passion for earth science and made the decision to change my career path. I moved to Colorado and joined the Department of Geophysics at the Colorado School of Mines (10 years), where I provided administrative support for faculty and students, including logistics management for and active participation in the department's annual geophysics field camp.

I then added environmental science experience to my portfolio by supporting two research centers in CIRES, the Cooperative Institute for Research in Environmental Sciences at the University of Colorado Boulder—Earth Lab and the North Central Climate Adaptation Science Center.

Joining the Physics Division at Los Alamos was a perfect match for my goals to remain in the STEM (science, technology, engineering, and math) field and relocate to northern New Mexico.

Digging in the dirt
I have participated in dinosaur digs and done fossil prep work in Colorado and Wyoming.

Tim Wong

Scientist
Thermonuclear Plasma Physics (P-4)

I really enjoy collaborating with and learning from my colleagues. It seems like every time I have a question, there is someone at the Lab with 20 years of experience working on that specific topic!

Game on!
I love playing chess in my free time; I'm always up for a game! ■

Veterans inclusivity tips

While we celebrate veterans specifically on November 11, there are many ways in which we can continue to recognize those who have served in our uniformed forces and honor their service year-round. Please consider the following.

- A simple "thank you" goes a long way! Respectfully acknowledging their dedication to service can be a great way to let our veterans know how much we appreciate them.
- Service comes with a cost. For veterans, post-traumatic stress disorder (PTSD) is not a matter of "if you have it" but rather "how severe is it" and "have you worked through it." Suicide is tragically high within the veteran population, and triggers can come in many forms, including anniversaries and holidays. Please be cognizant of your veteran peers and their well being. Simple acts of kindness and engagement, like lending an ear or sharing a cup of coffee, can make a huge difference.
- As the Lab continues to grow, please keep an open mind when reviewing veterans' applications. Veterans often come with skill sets that may not show through on paper: leadership, time management, mission focus, etc. In addition, veterans may "speak military" during interviews, which can be difficult for interviewers to understand. If you find yourself preparing to interview a candidate who identifies as a veteran, please reach out to the Lab's Veterans Employee Resource Group leadership team. We have several members who are willing to serve on veterans' interview panels to help facilitate and translate discussions. ■

Celebrating service

Congratulations to the following Physics Division employees who recently celebrated a service anniversary:

Glen Wurden, P-4	40 years
Bill Louis, P-3	35 years
Gerd Kunde, P-3	20 years
Jason Medina, P-1	20 years
Mary Sandstrom, P-1	20 years
John Goett, P-2	10 years
Matthew Freeman, P-1	5 years
Hermann Geppert-Kleinrath, P-4	5 years
Kyle Hughes, P-2	5 years
Nguyen Phan, P-3	5 years
Terence Tarnowsky, P-2	5 years
Bradley Wolfe, P-4	5 years

HeadsUP!

Help make the Lab a more sustainable workplace

Easy sustainable initiatives to start in your office are

- Purchasing recycling bins for the office
- Having power strips with on/off switches
- Posting reminders for staff to turn off the lights when leaving the room
- Having only one shared office printer and no individual ones
- Having IT set double-sided printing as default for computers
- Reporting maintenance issues such as water leaks or electrical problems when you see them

PHYSICS FLASH
SINCE 1943

Published by the Physical Sciences Directorate.

To submit news items or for more information, contact Karen Kippen, ALDPS Communications, at 505-606-1822 or aldps-comm@lanl.gov.

For past issues, see www.lanl.gov/org/ddste/aldps/physics/physics-flash-archive.php.

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