

# news

Dec 2023/Jan 2024

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## First Lady's visit focuses on U.S./Australia cancer collaboration



(l-r) First Lady Dr. Jill Biden, Ms. Jodie Haydon, partner of the Australian Prime Minister, then NCI Director and now NIH Director Dr. Monica Bertagnolli and NCI investigators Dr. Nirali Shah, Dr. Naomi Taylor and Dr. Victoria Giordani.

In late October, First Lady Dr. Jill Biden and Ms. Jodie Haydon, partner of the Australian Prime Minister, visited the National Institutes of Health (NIH) Clinical Center to learn more about its role in cancer research and to receive briefings on pediatric cancer research and a U.S.-Australia collaboration on cancer studies.

After meeting with NIH leaders, including Clinical Center CEO Dr. James Gilman and National Cancer Institute (NCI) director Dr. Monica Bertagnolli (who was subsequently appointed Director of the NIH on November 7, 2023), the visiting

dignitaries met with researchers in one of the NCI labs focused on pediatric oncology.

In 2016, the United States and Australia enhanced and formalized cancer collaboration by linking NCI and the NIH with Australian state governments and cancer research organizations. Australian researchers are the United States' second largest international recipients of NCI research grants.

More information on this initiative: [au.usembassy.gov/u-s-australia-cancer-research/](http://au.usembassy.gov/u-s-australia-cancer-research/)

—Donovan Kuehn

## Pediatric patients welcome Washington Commanders



Players from the Washington Commanders received autographed paintings from 8-year-old pediatric patient, Ryan Petty.

NFL athletes from the Washington Commanders took a time out from football to huddle with pediatric patients staying in iNW. The players, including Mason Brooks, Casey Toohill, Efe Obada, James Smith-Williams, Antonio Gibson, good naturedly debated with the youngsters about who their favorite team should be. They also handed out Washington Commanders team gift bags - which the patients were grateful to receive.

During the Washington Commanders' visit to the NIH campus, they also visited The Children's Inn where they spent the afternoon painting pumpkins and decorating cookies with families staying there.

# I'm Back



# Dec 4 - Jan 3

# Men in Nursing discussion addresses rewards and challenges



*The Men in Nursing discussion featured (left-right) Gregory Purcell, Clinical Center Nursing Department (CCND) registered nurse (RN), Ermias Germe, CCND RN and Dr. Steve Risch, clinical nurse specialist. On screen is Dr. Ernest Grant, a nurse, vice dean at the Duke University School of Nursing and internationally recognized burn-care expert. In 2018 Grant became the first male president of the American Nursing Association.*

Dr. Steven Risch began his nursing career as a 21-year-old RN in a cardiac surgery intensive care unit in upstate New York.

Now a Clinical Center oncology clinical nurse specialist, he is still a relative rarity in a profession that remains predominantly female.

In the U.S. today, nearly 9 out of 10 nurses are female, despite the fact that the number of male nurses has climbed 40 percent in the past 20 years, according to the U.S. Bureau of Labor Statistics.

Risch was one of three CC male nurses to reflect on their professional experience during a Sept. 27 “Men in Nursing” event sponsored by the CC Nursing DEI Council.

The event featured a keynote address from Dr. Ernest Grant, a male nurse and internationally recognized burn-care expert. In 2018 Grant became the first male president of the American Nursing Association. He now serves as a vice dean at the Duke University School of Nursing.

In a subsequent interview, Risch said the event was “very validating,” noting that it marked the first time in his 23-year career that he encountered a program dedicated to the topic of men in nursing.

“The [CC Nursing] Diversity, Equity and Inclusion Council here is really robust,” he said. “They’re doing a phenomenal job raising awareness with different aspects of diversity and inclusion.”

Recruiting more men into the nursing

profession could help address the country’s persistent shortage of nurses, a gap that is only expected to increase in the years ahead.

Of the nearly 3.9 million nurses working in the U.S. today, nearly 1 million are over the age of 50 and will soon approach retirement age.

Dr. Barbara Jordan, the NIH Clinical Center’s chief nurse officer, also spoke during the “Men in Nursing” event.

Jordan said she’s always appreciated the compassion, caring and sensitivity of her male nursing colleagues, adding that they are “supersmart, great problem-solvers, and really help balance the team.”

Risch shares his own anecdotal evidence that more men looking to change fields mid-career are recognizing the growth and personal satisfaction offered by nursing.

Still, negative stereotypes persist. Risch points to presumptions about sexuality and the dearth of male nurses in the most senior management positions.

At the Clinical Center, Risch writes evidence-based treatment protocols to ensure nursing staff provide the best possible care. He says he finds the work intensely satisfying. “That combination of patient care and nursing and [the ability] to deliver that at the bedside is really the most rewarding part for me.”

Read the full story online at [cc.nih.gov/ccnews](http://cc.nih.gov/ccnews)

—Sean Markey

# Connecting musicians with patients

*New form streamlines concert requests*



*The National Symphony Orchestra performs in the Clinical Center atrium in September 2023.*

The Music in the Atrium series is a long-cherished tradition at the NIH Clinical Center, offering a welcome respite to patients, visitors and staff. The program is open to local musicians who would like to share their performances of classical, jazz, bluegrass or other music.

Interested participants can now submit a request online to [www.cc.nih.gov/performance\\_interest\\_submission](http://www.cc.nih.gov/performance_interest_submission) if they wish to perform at the Clinical Center.

The new form, created in collaboration with the hospital’s Department of Clinical Research Informatics and the Office of Communications and Media Relations, was developed to create a seamless process for performers to participate in the Music in the Atrium concert series.

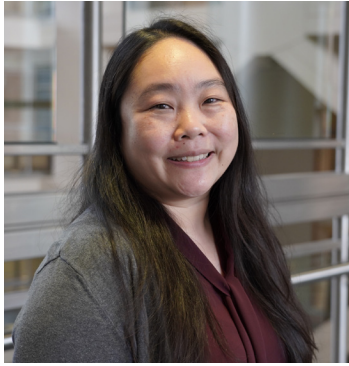
Once submitted, the request goes directly to the CC Special Events Team for review and consideration.

For upcoming concerts, please visit [cc.nih.gov/ocmr/music.html](http://cc.nih.gov/ocmr/music.html)

—Janice Duran

# Profile: Hospital Epidemiologist Dr. Alison Han

*10-year NIH veteran leverages her experience in medicine, public health and respiratory virus research*



*Dr. Alison Han*

Ask Dr. Alison Han to riff on a U.S. Presidential quote, and a safe guess might be Harry S. Truman and “The bacillus stops here.”

In March, the 10-year NIH veteran

joined the Clinical Center as its hospital epidemiologist, overseeing the CC’s Hospital Epidemiology Service. Epidemiologists are public health professionals who specialize in understanding and preventing the causes of disease outbreaks. The CC’s team works to reduce the risk of negative health outcomes for the hospital’s patients and staff.

Han leads a team of infection preventionists and other specialists who investigate potential outbreaks and work to surveil, control and prevent the spread of infectious organisms in patients, staff and the hospital environment.

In many ways, it’s a battle of human ingenuity vs. evolution.

“We’re seeing just an increase in the number of these organisms and what they’re resistant to,” Han says, referring to antibiotic resistance trends across the healthcare landscape.

“They’re becoming more and more complex, and we’re also seeing the number of people [infected] ... increase as well.”

Han says she and her colleagues are fortunate to work at NIH, which enables them to leverage the expertise of numerous partners across campus, from the Clinical Center Department of Laboratory Medicine to her former colleagues at the National Institute of Allergy and Infectious Diseases.

“We have really great partners that share their knowledge and resources to support us in efforts that are important to the patients and the providers,” Han says.

Read the full story online at [cc.nih.gov/ccnews](https://cc.nih.gov/ccnews)

— Sean Markey

## Transfusion medicine symposium shares practical knowledge

*New approaches to blood donor screening and hemolytic disease on the agenda*

The 42nd Annual Immunohematology and Blood Transfusion Symposium was co-hosted virtually in September by the National Institutes of Health Clinical Center’s Department of Transfusion Medicine and The American Red Cross.

The successful symposium which drew 300 attendees, was designed to provide practical information about recent developments, current practices, controversies and laboratory management issues relevant to transfusion medicine.

Attendees heard from 19 presenters and learned about diversity, equity and inclusions efforts, treatment of sickle cell disease, hemolytic disease of the newborn and new approaches to blood donor assessments through the ADVANCE study [advancestudy.org](https://www.advancestudy.org), among other topics. Four very interesting clinical vignettes were presented by transfusion medicine fellows, Drs. Alswied, Baez-Sosa, Daniel and Song.

During the symposium, the annual Richard J. Davey, MD Lectureship was awarded to Dr. Steven L. Spitalnik, co-director of the Laboratory of Transfusion Biology in the Department of Pathology & Cell Biology at Columbia University in



*Dr. Steven L. Spitalnik, recipient of the RJD Lectureship for his contributions in the field of transfusion medicine in research, clinical practice and commitment to education.*

Cell Biology at Columbia University in New York. Spitalnik was recognized for his many contributions including the on-going WIRhE project. The project’s goal is to eradicate Rh disease, a genetic condition that occurs when a mother’s blood type is different than her child’s.

Rh factor is a protein on red blood cells that is part of one’s blood type. When an Rh-negative mother is exposed to blood that is

Rh-positive, most often through pregnancy with an Rh-positive child, her immune system can mistake the child’s blood as a pathogen, which can lead to the child’s blood cells being destroyed and adding risk to the mother and child.

“Each year, this symposium brings...clear and impactful presentations on diverse topics from leaders and future leaders in transfusion medicine,” said Dr. Cathy Conry-Cantilena, a senior research physician with the Department of Transfusion Medicine, program director for Blood Banking/Transfusion Medicine Fellowship and Symposium Planning Committee member.

“The one-day series of educational lectures demonstrate how the discipline of transfusion medicine is of significant importance for patient care in so many subspecialties,” she added.

For more information on the symposium and a list of presenters, visit [clinicalcenter.nih.gov/dtm/symposium/description.html](https://clinicalcenter.nih.gov/dtm/symposium/description.html)

— Karen Byrne, Education Coordinator, Department of Transfusion Medicine

# Lab Report:

## Inside the Neurorobotics Research Group Lab

*NIH scientists use functional neuroimaging, neural interfacing and rehabilitation robotics to evaluate and treat movement disorders*



Dr. Tom Bulea

If there was a Bat Cave for the intersection of rehabilitation medicine and robotics engineering, the newly renovated 900-square-foot lab in Building 21 on the NIH campus in Bethesda, Md., occupied by the Neurorobotics Research Group, or NRG (“energy” acronym intended), would be it.

Part of the Neurorehabilitation and Biomechanics Sections of the Clinical Center’s Rehabilitation Medicine Department, the group is led by principal investigator Dr. Tom Bulea, an engineer who develops novel technologies to improve the lives of people with neurological disorders. Or, as Bulea has written, “We combine neuroscience and engineering principles to create new rehabilitation paradigms that maximize functional outcomes by optimizing human-machine interaction.”

Bulea and his colleagues, including Dr. Diane Damiano, a senior investigator in the CC’s Rehabilitation Medicine Department, are perhaps best-known for their work on a leg-brace robotic prosthesis that helps pediatric patients with cerebral palsy correct a knee extension gait deficiency. Thanks to a cooperative research and

development agreement with the Canadian company Bionic Power, the slimmed-down, light-weight device is now in its fourth iteration and undergoing clinical and at-home observational and interventional trials.

It is just one of many early and late-stage research projects currently underway at the six-person lab. (Bulea is joined by two post-docs, two post-bacs, a newly hired part-time research physical therapist and a planned staff scientist by year’s end.) Together, they draw upon a range of disciplines, from engineering, robotics, and machine learning to neuroscience, physical therapy, and rehabilitation medicine, in their quest to develop new investigative tools.

**“[We] develop new technology to help people improve the way they move their bodies”**

One of the longest-serving members of the upstart NRG lab is Kevin Rao, a biomedical engineering major from Johns Hopkins, who is now in his third and final year of a post-bac fellowship. Rao is working on two pilot projects in addition to the exoskeleton initiative. One is a sensory restoration prosthesis for individuals who lack proprioception, an extremely rare genetic disorder caused by the PIEZO2 gene first implicated in human mechanosensation by NIH researchers. Absent proprioception, people have no relative sense of their body position in space.

Working with Dr. Alex Chesler, of the National Center for Complementary and Integrative Health and Dr. Carsten Bönemann, of the National Institute of Neurological Disorders and Stroke, as well as researchers at Stanford, Rao and his NRG colleagues

are taking a first step to characterize the psychophysics of deep pressure sensation in the skin.

“We’re trying to identify both what people consider deep pressure in healthy individuals, the thresholds for what deep pressure is, and how it relates to touch threshold and pain threshold,” Bulea explains.

The goal is to map inputs that can be used to transmit movement in a prosthesis. To date, there are only some 60 known cases of PIEZO2 disorder in the world. While the research collaboration could ultimately benefit those patients, Bulea and Rao say the applications are potentially far broader.

“It’s a very unique clinical population and it kind of proposes a really interesting learning opportunity, because they’ve never had any form of sensory proprioceptive feedback,” Bulea notes.

By studying how research volunteers with PIEZO2 disorder incorporate and integrate substituted feedback to adapt their motor control “we’ll be able to better design alternate sensory inputs for people not with complete loss, but some absence or deficiencies,” Bulea says.

That far larger group includes people afflicted by strokes, Parkinson’s disease or cerebral palsy.

The project is just one of many high-risk, high-reward research endeavors Bulea and his colleagues are undertaking in NRG’s upstart lab.

The work encapsulates what Bulea says is his fundamental drive as a scientist and the NRG lab he leads—taking a broad view to understand the neural control of movement and “then using that to develop new technology to help people improve the way they move their bodies.”

Read the full story online at [cc.nih.gov/ccnews](https://cc.nih.gov/ccnews)

—Sean Markey

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### Clinical Center News

Editor: Donovan Kuehn | Layout: Justin Baker

Contributors: Karen Byrne, Janice Duran, Cindy Fisher, Yvonne Hylton, Sean Markey, Maria Maslennikov, Daniel Silber

National Institutes of Health Clinical Center  
10 Center Drive, Room 6-2551  
Bethesda, MD 20892-1504

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Contact: Donovan Kuehn  
[donovan.kuehn@nih.gov](mailto:donovan.kuehn@nih.gov)