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# UNFEATHERED

Blue Hens Harness the Power of AI

# ALINE (OF BEACH GRASS) IN THE SAND

See more on page 2

Photo by Evan Krape



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**Robot Chicken:** It's only fitting that an AI-themed magazine would feature AI-generated cover art (look closely, and you'll see the spots that give it away). This image was created using Adobe Firefly and designed to invoke the spirit of machine learning—Blue Hen style.



#### **Blades of Grass**

Next time you're at Delaware Seashore State Park, take a moment to appreciate the grass that traps windblown sand to form dunes. Planted each year by hundreds of volunteers, including students from UD's Associate in Arts Program (AAP) in Dover and Georgetown, the grass's extensive root system helps anchor dunes from shifting during storms and high tides, acting as a natural barrier against coastal erosion. AAP students have participated in the annual event since 2015, contributing to the nearly 5 million stems of beach grass planted since the cleanup began in the 1990s.

#### UNIVERSITY OF DELAWARE MAGAZINE

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# ROMOUR DRES DENT

#### **EXPLORING THE FRONTIERS OF TECHNOLOGY, TOGETHER**

What comes to mind when you hear the term "artificial intelligence"?

Maybe it's the technology to drive us around town, write a summary of an important meeting, search our photos for images of life's milestones, plan our vacations, identify a wildflower we saw in the park, generate "art" or seemingly converse about any topic we can imagine.

At the University of Delaware, AI is so much more. How about using AI to create a digital museum that showcases textiles too fragile to appear in public? Or collect data to help alleviate world hunger ... customize strength and conditioning programs to help athletes avoid injury ... analyze the ocean floor to better understand storm waves and tidal currents? AI is at the heart of all those projects–and many others–happening right now at UD.

We are undoubtedly in the midst of a revolution in AI, with the technology improving and becoming more ubiquitous every day. This is an inflection point that is forever changing the way we live, work and play, just as personal computers and smartphones have done in the past few decades. At the same time, we are continually challenged to balance AI's benefits against valid concerns about its effects on safety, privacy, fairness, creativity and-perhaps most importantly-truth. As one of the top research universities in the nation, UD has always been at the frontier of discovery and innovation. Our scholars are exploring from the depths of the ocean to outer space, helping people live longer and healthier lives, developing new insights into the human condition and shaping the landscape of our shared future. Every day on our campus, we are creating tomorrow and preparing our students to lead and succeed in this rapidly evolving world.

It is critical, though, to remember that no tool or technology– not even generative AI–can replicate or replace the connections we form with each other. As I told the proud Blue Hen Class of 2024 in May, the personal and unique moments that inspire, excite or motivate us truly define the human experience. Our world needs all of us to care about the planet, to care about justice and equity, to debate respectfully and collaborate creatively ... to make things better for everyone.

As technology continues to develop in exciting and unexpected ways, UD and the human connections it fosters will always be right there, keeping people at the heart of everything we do.

Hosans ennis

Dennis Assanis, President

News from campus and beyond

**GLOBAL LEADER** 

UD continues to top national academic rankings (check out the following page for the latest). And when it comes to supporting international students inside the classroom and out, the University of Delaware takes top global billing.

THE

In the 2023 International Student Barometer (ISB)–a comprehensive survey of more than 120,000 students from 155 universities across the world–UD ranked first in international student satisfaction for arrival and visa support, second in learning performance feedback, third in pre-arrival orientation services, with numerous additional recognitions.

The ISB is the leading benchmarking tool for tracking the international student experience. Since its launch in 2005, the ISB comprehensive survey has been administered by more than 1,400 universities to 4 million students worldwide.

At UD, 89% of international students reported satisfaction with their college experience and 95.8% satisfaction with the Center for Global Programs and Services, the designated unit to support all international students at UD. Additionally, UD placed sixth in the world for both social activities and library support, with respective satisfaction ratings of 89.5% and 97%. UD also ranked 10th in the world in recreation services, with 96% satisfaction from respondents.

"It's an honor to be recognized for our efforts to support students in all aspects of their education, including long before they ever step foot on campus," says Ravi Ammigan, associate provost for international programs. "This is at the heart of our mission to put students first and ensure their continued success at UD."



# FROM DELAWARE TO THE WORLD

The University of Delaware has once again solidified its position as a top-tier global institution. According to the 2024 edition of the outcome-based Global 2000 list by the Center for World University Rankings (CWUR), UD ranks in the top echelons of higher education. Out of 20,966 worldwide universities evaluated by CWUR, the University stands tall in the top 1.6%, reaffirming its commitment to academic excellence and innovation.

UD was also included in the 2025 edition of the QS World

University Rankings, a testament to its enduring impact on the international academic landscape. Placing #506 globally and an impressive #76 in the United States, UD's standing in the QS rankings highlights its exceptional standards for teaching, research and global influence. These rankings, released in June by QS Quacquarelli Symonds, recognize the University's unwavering dedication to fostering intellectual growth, pushing the boundaries of knowledge across disciplines, continually enhancing academic excellence and maintaining its global standing.



# EXCELLENCE IN Graduate Education

In the 2025 edition of Best Graduate Schools, U.S. News and World Report placed the University's graduate programs among the best in the nation.

"As we continue to enhance and expand our excellent graduate programs to meet the needs of our students and society, it is gratifying to see the expertise and hard work of our faculty and staff nationally recognized," says UD President Dennis Assanis. "We are proud of the positive impact that our graduate students are making on the world, and we look forward to even greater successes ahead empowered by their UD education."

UD's consistently top-ranked physical therapy program remained in the top three nationwide. Engineering advanced four spots, from 42 to 38, with the consistently top-ranked chemical engineering program remaining #7 in the nation. This is the first year U.S. News and World Report ranked speech-language pathology programs with UD's inaugural ranking at 32.

**TOP-RANKED GRADUATE EDUCATION PHYSICAL THERAPY** 2 **CHEMICAL ENGINEERING** 7 NON-PROFIT MANAGEMENT | 16 (UP FROM 23) PUBLIC MANAGEMENT AND LEADERSHIP | 18 (UP FROM 23) **PUBLIC FINANCE AND BUDGETING** 21 SPEECH-LANGUAGE PATHOLOGY 32 **EDUCATION SCHOOLS** 34 **PUBLIC AFFAIRS SCHOOLS** 34 ENGINEERING SCHOOLS 38 (UP FROM 42) MATERIALS ENGINEERING 40 (UP FROM 42) **BIOMEDICAL ENGINEERING** 50 MECHANICAL ENGINEERING 50 CIVIL ENGINEERING | 51 (UP FROM 55) ELECTRICAL AND COMPUTER ENGINEERING 53 (UP FROM 66) COMPUTER ENGINEERING 55 (UP FROM 57) COMPUTER SCIENCE 70 (UP FROM 77) NURSING: MASTER'S 79 (UP FROM 82) NURSING: DOCTOR OF NURSING PRACTICE 110 PART-TIME MBA 150

## SOCCER EXPERT TAKES CENTER STAGE

Kinesiology and Applied Physiology Professor Thomas Kaminski has spent the past three decades speaking worldwide on soccer heading and concussion risk. Now, he has been appointed the sole United States representative to the FIFA Heading Expert Group, a subset of FIFA Medical.

The influential committee, which meets quarterly, is charged with sharing evidence-based knowledge of the current state of soccer and soccer heading from national teams down to youth soccer players. The group is also tasked with identifying gaps in knowledge and areas for further research.

"To share my knowledge and expertise in this way is an honor," says Kaminski. "FIFA will make a recommendation based on the work of our committee as we prepare a set of guidelines that other countries can use. We're driving policy for the world."





VAN KRAPE

# FLACCO SHARES HARD-EARNED LESSONS

The only certainty in life is that nothing ever is.

"Accept uncertainty and the fear that comes with it," Joe Flacco, BE08, told the Class of 2024, a group of 6,000-plus Blue Hens "graduating into the very definition" of the word. "Last year, for the first time in my life, I started my 16th NFL season on the couch," the Super Bowl MVP said. "No team had signed me, and I was waiting for the opportunity to show the league and the world how ready I was. Despite the uncertainty, I appreciated that time with my family. When Cleveland called, I felt a sense of satisfaction... I had put myself in a position to succeed, but only because I wasn't alone in my journey.

"You are all going to create your own journeys," he added. "I hope some of the lessons I've learned will help you embrace uncertainty faster so you can enjoy life sooner: Failure is OK as long as you learn from it. Pattern recognition is essential in any situation if you want to keep improving. Commit and invest in your relationships. Don't worry about being right, just focus on working hard. I know you will all do us proud."

In addition to serving as this year's Commencement speaker, Flacco also received an honorary degree, the highest accolade reserved for those who reflect the UD mission and serve as exemplars for the broader Blue Hen community and world.

Fellow honorary degree recipients included: the Hon. Tamika R. Montgomery-Reeves, the first African-American person from Delaware to serve as judge on the United States Court of Appeals for the Third Circuit; Don Sparks, the Unidel S. Hallock du Pont Chair in Plant and Soil Sciences at UD and former director of the Delaware Environmental Institute; and KR Sridhar, founder, chairman and CEO of Bloom Energy.



# **DECISION-MAKING DURING A CRISIS**

Dr. Anthony Fauci, public health adviser to seven sitting presidents on matters ranging from Ebola to COVID-19, spoke to a packed and rapt Blue Hen audience earlier this spring in honor of the 60-year anniversary of UD's Disaster Research Center.

In a fireside chat with Valerie Biden Owens, AS67, chair of UD's Biden Institute, Fauci highlighted some of the issues he's faced over his 54-year career with the National Institutes of Health (NIH), where he served as director of the Institute of Allergy and Infectious Diseases from 1984 to 2022.

Ronald Reagan and George H.W. Bush's presidencies coincided with the early years of HIV/AIDS. The George W. Bush years witnessed anthrax attacks that followed Sept. 11. In between, President Bill Clinton oversaw HIV's progression from a death sentence to something more treatable with medication. Barack Obama was in the White House for three viral outbreaks: the 2009 swine flu, Ebola and Zika. Then there was the COVID-19 pandemic, which straddled the presidencies of Donald Trump and Joe Biden [AS65, 04H].

No matter the crisis, Fauci's job remained the same: to tell the truth. "A very wise conservative Republican in the Nixon [Administration] told me, 'Whenever you walk into a White House to advise a president or the president's staff, tell yourself this might be the last time I walk into this building," Fauci recalled. "Because if you go in there thinking this is heady, you might slip and tell that person something you think they might want to hear, as opposed to an inconvenient truth that they may not like." Today's challenges include factually inaccurate misinformation and intentionally misleading disinformation, both of which spread easily and quickly on social media, creating a space where the "outlandish becomes accepted" as truth. As for artificial intelligence? That's an opportunity for "disinformation on steroids." Fauci said.

As society moves forward alongside COVID-19 and many other viruses and diseases, Biden Owens asked, "What's coming on the horizon?"

"I don't know [when the next one] is going to occur, but I know what we need to do," he said. "We need to be very careful in pandemic preparedness, and put in place measures to recognize it and respond rapidly. We need a public health infrastructure that is more attuned to surveillance."

The discussion, held by the Biden Institute, was among the events to recognize the Disaster Research Center's 60th anniversary.

"DRC's long legacy of research is the foundation of much of what we know about disasters, how to respond to them, how to recover from them and how to mitigate them," said co-director Tricia Wachtendorf, adding that the DRC was the first center in the world of its kind. Additionally, UD's Joseph R. Biden, Jr. School of Public Policy and Administration serves as a living lab where traditional education meets hands-on engagement to equip students with the tools to navigate challenging times and develop solutions to make the world a better place. ↓ *—Karen Roberts, AS90, 21M* 



# NASA SCIENCE CHIEF INSPIRES CAMPUS COMMUNITY

Nicola "Nicky" Fox doesn't remember seeing astronaut Neil Armstrong take humanity's first walk on the surface of the moon. But her father had propped her up in front of the television to ensure his 8-month-old daughter witnessed the amazing feat.

Those early seeds of space exploration would blossom into Fox's current role as chief of NASA's Science Mission Directorate, with jurisdiction over more than 140 missions examining virtually everything in the known universe–from distant galaxies to the bottom of the sea, from massive stars to subatomic particles.

Her path to leadership in the world's largest space agency took many turns along the way, including encounters with "imposter syndrome." But Fox brought a clear and compelling message to the UD community during a daylong visit earlier this spring, inviting everyone to "do NASA science."

"Science is for everybody," she said during a whirlwind tour of UD, which started at the Delaware Space Grant Consortium's annual symposium and included visits to four labs, presentations by 10 researchers, a public lecture and "fireside chat" with UD President Dennis Assanis, an informal "ask-me-anything" meeting with physics and astronomy students, and finally, the Vernon Lecture, a public event at UD's Clayton Hall, presented by the Mount Cuba Astronomical Observatory.

Along the way, she recognized the work of UD plasma physicists, astronomers, chemical engineers, microbiologists, materials scientists, data scientists, marine scientists and plant scientists who are working to advance space science.

In her public lecture, Fox traced some of the extraordinary research that has emerged since the 2017 launch of the Parker Solar Probe, which, in December, will come closer to the sun than any other human-made spacecraft. She was the project scientist on this mission, in which UD's William Matthaeus, Unidel Professor of Physics and Astronomy, helped to lay the scientific foundation and worked on three of its instrument teams.

Looking to the future, Fox called today's K-12 students the "Artemis" generation, who will someday walk on Mars.

Throughout the day, she savored encounters with students and took as many of their questions as time allowed.

She urged students to seek internships, attend lectures, pursue many opportunities to learn and explore the possibilities. She also encouraged them to embrace the idea that "no job is beneath you. If you're on a team, something needs to be done," she said. "The best team leads will do anything."

-Beth Miller



# **302 TOUR RETURNS**

Three counties. Three days. Three hundred and two reasons to be proud.

The second annual 302 Tour, held June 6-8, offered UD student-athletes and coaches an immersive excursion into all things Delaware, from walking on a former Air Force One plane in Dover's Air Mobility Command Museum to saving horseshoe crabs at the James Farm Ecological Preserve in Ocean View.

Designed for student-athletes to learn about the great state they represent through education, community outreach and business engagement, the annual tradition featured service projects, visits to landmarks and multiple events.

As student and New York native Regan Whitaker, AS25, says, "After the 302 Tour, Delaware feels like a forever home to me!"

# NEW MSW PROGRAM MEETS CRITICAL NEED

The pandemic shined a bright spotlight on the need for trained professionals who can step into high-stress situations and connect individuals and families with necessary services and support.

To answer the call, UD's College of Education and Human Development has launched a researchinformed, student-centered and community-engaged Master of Social Work program, which welcomes its first cohort of graduate students this fall.

"I am a strong believer in the use of research to inform practice," says Program Director and Professor Ohiro Oni-Eseleh. "As a Research 1 university, UD provides an opportunity to expand thinking, and in social work, that's what we need."

The U.S. Bureau of Labor Statistics projects that the national need for social workers will grow 9% from 2021 to 2031, equating to roughly 74,700 openings for social workers annually. As of October 2022, Delaware had an average of 762 unfilled social work positions. And although 100% of the school-based positions and 73% of the non-school-based positions required job candidates to hold a master's degree in social work, regional opportunities for graduate education remain limited.

With one-year, 16-month, two-year and threeyear pathways to degree completion, UD's program allows students to customize their education timeline. Most importantly, it helps address an unmet local and national need, strengthening families and communities as a result.





# **UD LAUNCHES SABRE CENTER**

UD's biotechnology STAR just got brighter.

Earlier this spring, the University broke ground on a pilotscale biopharmaceutical manufacturing facility at the Science, Technology and Advanced Research (STAR) Campus.

The new Securing American Biomanufacturing Research and Education (SABRE) Center-still in its design phase-will serve as both a testbed for new technologies and a workforce training ground on STAR Campus, helping to scale and mature manufacturing innovations that may one day bring lifesaving or life-enhancing medicines and vaccines to market.

In this way, the SABRE Center will support the innovation, research and development happening next door at UD's National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL), while filling the gap between developing new technology in a lab setting and commercializing it in a full-scale manufacturing facility.

In 2017, UD launched NIIMBL, a national-scale public-private

partnership focused on biopharmaceutical manufacturing and innovation to advance new technologies, secure domestic supply chains and train the biomanufacturing workforce. But in many ways, the state's strategic investment into the life sciences sector began about two decades ago, with the formation of the Delaware Biotechnology Institute.

Reflecting on the bold and promising new directions underway, U.S. Sen. Tom Carper, BE75, hailed "all the years of work that have gone into transforming the once-shuttered Chrysler plant into the research and development hub it is today," noting that the new facility affords "a competitive advantage to attract companies and researchers to the First State." 🖢

-Karen Roberts, AS90, 21M

Above: UD leadership, members of the Board of Trustees and elected officials break ground on the newest biomanufacturing research center in April.

## DETECTING DELAYS SOONER

What if technology could transform healthcare and make a difference for physicians, families and children?

That's the goal of a new smart baby monitor developed by College of Health Sciences Professor Michele Lobo, a pediatric physical therapist who codirects UD's Move 2 Learn Innovation Lab and creates wearable tech and play-based interventions as part of the UD MakerNetwork.

Working with Tony Ma, cofounder of Benten Technologies, Lobo is harnessing computer vision and natural language processing to create a monitoring system known as the Platform to Recognize and Evaluate Children for Age-Appropriate Response and Early Detection of Delays (PRECARE), designed to detect developmental delays sooner.

Currently, more than 60% of babies in the U.S. do not receive developmental surveillance. And, only 10% of babies with developmental delays are correctly identified, meaning nearly 90% don't receive necessary early interventions.

PRECARE aims to change that. "Parents are already using audio and video monitors," says Lobo. "Our device could serve that same purpose but with added benefits. It could monitor the child's breathing, gauge when they're awake, asleep or playing safely and provide more data about what's happening every day in the child's natural environment."

PRECARE is funded through a Small Business Innovation Research grant from the National Institutes of Health.

To learn more about technology's potential to transform healthcare and improve patient outcomes, read the AI package, beginning on page 16. 🦆

–Amy Cherry





# LEADING THE CLEAN ENERGY REVOLUTION

When the nation's most accomplished engineers host a meeting to discuss the future of clean hydrogen, they turn, unsurprisingly, to Newark, Delaware.

This year, UD and The Chemours Company hosted a public symposium and regional conference for nearly 150 attendees representing industry, government research, academia and the National Academy of Engineering (NAE)—including NAE president and fellow Blue Hen John Anderson, EG67, 21H.

The University is leading efforts in the clean energy transition, including its newly launched Center for Clean Hydrogen and workforce development initiatives underway through the Mid-Atlantic Clean Hydrogen Hub.

"Here at UD, we are inspired by the crucial mission of developing solutions for viable and sustainable energy alternatives that are better for our planet," said President Dennis Assanis, an NAE member. "We believe that UD and its partners have the means to bring innovative ideas to fruition as part of the clean energy revolution."

The daylong conference featured experts like engineering professors Ajay Prasad and Yushan Yan, respective associate director and director of UD's Center for Clean Hydrogen.

Prasad shared results from UD's fuel cell bus program, a 17-year project to research, build and deploy a fleet of fuel cell-powered buses and hydrogen refueling stations in Delaware. Findings show their effectiveness in urban transportation, helping educate the public on hydrogen's clean, safe and reliable use.

Yan discussed his 20-year journey from laboratory research into large-scale commercialization and highlighted UD's vision to help reduce costs through new materials, simpler designs and faster manufacturing methods. —*Erica K. Brockmeier* 

Above: Sunita Satyapal, director of the Department of Energy's Hydrogen and Fuel Cell Technologies Office, delivers first keynote.



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#### OFFICE HOURS with sarah lacy

# **BONES TO PICK**

#### **BY DIANE STOPYRA**

The last time Sarah Lacy traveled to Africa to dig for bones, she slept in a wooden hut. The previous tenant had been bitten by a black mamba snake and airlifted out. But danger is merely part of the job.

"There's a bit of an Indiana Jones complex for those of us who do this work," she laughs.

As assistant professor of anthropology, Lacy studies early humans. Specifically, she examines the bones of Neanderthals (cavemen, in popular vernacular) who walked the Earth between 120,000 and 40,000 years ago. The Blue Hen strives to understand how and why our species evolved the way it did—and all the ways we haven't changed at all. (She's working on a book about sex, drugs and rock and roll in the Paleolithic period, proving that certain human proclivities stand the test of time.)

"I have a bit of a soapbox in showing that Neanderthals are not backwards, stupid people," Lacy says. "They had the same mental capacities as us."

Some might find the work a bit macabre. Lacy spends a good portion of each day surrounded by skulls, and the police force of a large Nevada county has been known to text her photos whenever they need an expert opinion on skeletons discovered in the desert: Human or non?

But what drives Lacy is more than bone deep.

"There's a reason there isn't a whole department dedicated to the study of lizards," she says. "People are narcissists; we want to know more about us. We are interested in the big questions: Who are we? Why are we here?"

It's a mission as old as time—or at least as old as the skull of a Miocene ape. (Yeah, she's got one of those.)



Lacy poses with a replica of a Shanidar Neanderthal skull, from modern-day Iraq. Although the University also has original skulls, UD Magazine did not photograph them due to issues of consent, a theme that continues in present day (see Al package for more). **OFFICE HOURS** WITH SARAH LACY





1















- THE OLD MAN: The most complete Neanderthal skull to date, discovered in La Chapelle, France, is of a gentleman who lived to be about 40, a ripe old age for someone who walked the Earth around 60,000 years ago. Known as "The Old Man" within the discipline, the skeleton reveals broken ribs, terrible arthritis and puncture wounds likely from a hyena, "but he was well taken care of by his community," Lacy says. "He's a good example of the compassion and care found within these societies."
- 2. BUSTY LADIES: Lacy, who's six months pregnant in these photos, makes her own ceramics, including these voluptuous fertility symbols modeled after stone carvings from approximately 25,000 years ago. "I love that the artists had clearly seen women with some weight because it flies in the face of this idea that hunter-gatherers were always on the brink of starvation."
- **3. HERE'S LOOKING AT YOU, KID:** Lacy hails from a ranch in Texas, where this angora goat skeleton was found. "At the airport, I thought: TSA is not going to like this, but they waved me right through."
- **4. HEAD CASE:** Lacy collects various skull casts, including this 18,000-year-old piece from the *Homo floresiensis*, or hobbit people, of the island of Flores in Indonesia.
- 5. DINO DECOR: A gift from a former student, this fossil is part of a Triceratops head.
- 6. MANDIBLE MYSTERY: In the 1970s, a European tourist discovered this prehistoric human jaw near the Ethiopian border. He kept the mandible to himself until the '90s when he felt guilty and turned it into a Belgian museum. Curators mailed the piece back to its country of origin, but it got lost in transit until a curious student rediscovered the long-lost fossil in a mailroom drawer at the National Museum of Kenya in 2010. This story piqued the interest of *National Geographic*, who paid Lacy, then a 24-year-old graduate student, to lead a field team of four Kenyan researchers to search for human remains. They found some, though none as old as the jaw bone seen here in cast form.
- 7. GENTLE GIANT: Its teeth may have been massive, but the prehistoric cave bear—which stood 12-feet tall on its back legs before going extinct during the last ice age—was an herbivore.
- **8. ROCK ON:** These opals come from a Paleolithic dig site in northern Macedonia, which Lacy co-directs. Every summer, she takes students here for a field school, and they learn to excavate the land. Her team has so far uncovered stone tools from around 170,000 years ago, as well as one gold Roman coin in pristine condition.
- 9. NICE CHOMPERS: Lacy's office is full of teeth—and X-ray equipment for photographing the teeth of fossilized Neanderthals around the world. "Early humans had very straight smiles because teeth erupt in response to force," she says. "People today eat Twinkies, and we almost all have overbites."
- 10. SCIENTIFIC AMERICAN: Lacy recently co-authored a paper challenging the long-held belief that cavemen hunted while cavewomen merely gathered. Based on archaeological and physiological evidence, she argued, our female ancestors were just as likely to spear a wooly mammoth or saber-toothed cat. The story was picked up by *Scientific American*, and it sent shockwaves through popular culture. (The magazine's initial tweet about the piece had 2 million views within a week.) "There's this big movement in the modern cultural milieu arguing that women are evolved for domesticity," Lacy says. "We want to push back on that: No, we're absolutely not."

# IT'S THE END OF THE WORLD AS WE KNOW IT

# DO WE FEEL FINE?

**BY DIANE STOPYRA** 

he AI genie is out of the bottle. In 2024, artificial intelligence has infiltrated every sector of our lives, from healthcare to politics to dog walking (yes, you really *can* enlist a robot for that).

But for all its ubiquity, AI remains a question mark in the collective consciousness. Are we optimistic... or afraid? Thinking about this new era feels like watching a Blue Hen playoff game: You're excited but also on the edge of your seat with nervous energy.

For millennia, human beings have sought to explain the world and its phenomena, asking big questions about our place in the cosmic order: Why are we here? Are we alone in the universe? Could we live forever? The good news is that machines are set to unlock answers to some of these previously unanswerable questions. The bad news: Machines are set to unlock answers to some of these previously unanswerable questions.

Herein lies perhaps the greatest catch-22 of the 21st century. As a species hardwired for curiosity and critical thought, it would be practically anti-human not to dive headfirst into the deep end of the AI pool. Yet–if not managed carefully–AI threatens to erode those very characteristics that distinguish human nature.

Institutes of higher education have a responsibility to grapple with this dilemma and ensure we get this right. Driving efforts to keep Al human led, universities are working to guarantee the technology serves–rather than subverts–the species.

At UD, Blue Hens are leveraging Al to tackle everything from physical pain to environmental peril, while creating space for all thoughts (critical and evangelical) on this emerging topic. To this end, *UD Magazine* has asked some of our experts to weigh in on the million-gigabyte question.

In the age of AI, what does it mean to be human?

#### MAKING AI COMPUTE

Wrapping your brain (or, for the cyborgs amongst us, central processing unit) around the implications of artificial intelligence requires first understanding the amorphous technology–a tall order, according to recent headlines. "Al is not what you think," maintains *The New York Times*. "Even the scientists who build Al can't tell you how it works," claims *VICE*.

"I have a hard time explaining it, too, because AI is really an umbrella term for a constellation of complex tools," says Kathy McCoy, professor of computer and information sciences and co-director of UD's AI Center of Excellence, which connects pioneering researchers and helps fund promising initiatives. "But at their core, these projects all involve the same thing: computational systems that exhibit human intelligence."

Put another way, Al machines are solving problems and making high-level decisions, cognition once exclusively the domain of *Homo sapiens*. And they are doing it at lightning speed. While the technology relies on a number of mind-bending subfields (Machine learning! Computer vision! Neural networks!), the concept is relatively simple: Pair data with the right algorithms (instructions for finding and analyzing patterns within said data), and *voila*! Machine-generated intelligence.

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"It's not a question of whether AI is beneficial. If we want to understand our place in the cosmos, AI is necessary."

-Astrophysics Professor Federica Bianco



ChatGPT reached 100 million users in roughly 60 days, becoming the fastestgrowing, tech-driven consumer application in history. The science has already crept into your life. It's how your phone's facial recognition technology works, and how Netflix curates recommendations. At UD, chatbots in admissions and the library field rote questions, leaving staff members to tackle more complex, student-specific matters.

The concept is not new-the phrase "AI" was coined at a niche Dartmouth College workshop in the 1950s. But modern supercomputing technology has exponentially increased the amount of data at AI's disposal. At the same time, ChatGPT-that revolutionary tool capable of composing everything from book reports to actual books-has elevated AI from the lab to the public domain. Where TikTok took nine months to reach 100 million users and Instagram two-and-a-half years, ChatGPT met this same milestone in roughly 60 days, becoming the fastest-growing, technology-driven consumer application in history.

In many ways, this new dawn is irresistible. UD astrophysics professor Federica Bianco serves on a NASA-appointed panel and calls the technology critical to unlocking the mysteries of the universe, potentially revealing new laws of physics to explain the formation of life on Earth.

"It's not a question of whether AI is beneficial," she says. "With increasingly large datasets from astrophysical probes, we have

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### A LOOK BELOW THE SURFACE

We have a better understanding of the moon's backside than we do the oceanonly 20% of the latter has been mapped. That's because the sea is a spectacularly harsh environment-pressure changes, temperature fluctuations, sharks. But, with Department of Defense funding, a Blue Hen team is tackling the liquid frontier. "This work allows us to reveal important parts of human history," says marine science professor Art Trembanis. Since platforms for data collection (satellites, robots) have substantially improved in recent years, oceanographers are increasingly drowning in data sets too enormous to parse manually. However by building and refining new AI models, Blue Hen scientists can pinpoint everything from shipwrecks to scallop beds, artificial reefs to unexploded weapons of war. Information gathered during this threeyear project will inform a variety of decisions: where to place wind farms, how to plot navigation routes, where to fish and more: "Things are moving at breakneck speed," says Trembanis, "and we're just scratching the surface."

**RESEARCHERS: ART TREMBANIS (pictured at right), XI PENG** 

### PAST

ARHAM CHOWDHURI

WITH HELP FROM GPT-40 AND GEMINI

can interact with another through text and cannot distinguish between the The following decades two, the machine "passes." see waning public interest This becomes known as the and funding. But increased **TURING TEST** computational power in the 1990s gives rise to expert systems (AI programs that emulate human decision

#### **NEURAL NETWORKS.**

making like the Deep Blue chess computer), along with

mathematical functions inspired by neurons in the human brain to recognize patterns and make databased predictions and decisions.

### PRESENT

Increasingly, when we talk about AI, we are referring to

#### **GENERATIVE AI.**

or machines that create/ generate new content (text, images, music, video) based on learned data patterns. To do so, they use

#### LARGE LANGUAGE **MODELS**,

trained on massive amounts of data (eaual to some 500 billion pages of text) to generate human-like answers. They also use

#### GENERATIVE **ADVERSARIAL NETWORKS.**

in which two neural networks train each other.

We now live in the age of

#### **BIG DATA.**

with sums of information too massive and cumbersome for any person to process. Enter

#### MACHINE LEARNING.

a subset of AI in which algorithms parse and make decisions based on data.

# FUTURE

In 1950, computer scientist Alan Turing wonders, "Can machines think?" He

develops a test: If a human

human and machine

-still an important

concept in Al.

Sometime in the not-so-distant future, we may have

#### **ARTIFICIAL GENERAL** INTELLIGENCE—

machines that can understand, learn and perform any intellectual task a human can.

#### ALIGNMENT.

ensuring that AI systems' goals and behaviors align with human values and ethics, will be critical.

#### Machine learning relies on DEEP LEARNING.

a training methodology in which neural networks with many layers (deep neural networks) work together to process hundreds of billions of examples of text, images, videos, etc., thus "learning" like a human brain. This is used in image and speech recognition, self-driving cars and more.

a better chance than ever to understand our place in the cosmos–but Al is necessary to process these data."

Or consider implications for human well-being. Last year, Sunita Chandrasekaran, associate professor of computer and information sciences and co-director of UD's AI Center of Excellence, used AI to tailor genetic-profile-specific drug therapies for pediatric cancer patients—the type of precision medicine that may soon become the norm.

But as these developments point to an almost miraculous future, practical concerns arise: *Will I lose my job*? (It's possible. According to one sobering report from investment bank Goldman Sachs, AI is set to replace 300 million fulltime positions over the next 10 years.) Or: *Will machines rise up and enslave humanity*? (Also possible. In a 2022 survey of 700 AI researchers, more than half reported at least a 10% chance that humans are annihilated–or at least severely disempowered–by this technology.)

Perhaps even more unsettling than unemployment or robot overlords is the existential threat of trudging through

life stripped of creative or independent thought. Ask ChatGPT whether this fear is valid, and the bot offers reassurance: "Al itself will not diminish humanity." Then again, when asked if its own response can be trusted, it deflects: "Use your judgment."

Humans, it appears, will need to figure this one out themselves.

#### **KEEP CALM AND CODE ON**

Some Blue Hens think the metaphysical angst–like an android Arnold Schwarzenegger terminating the planet–is a tad dramatic.

Take Philosophy Professor Mark Greene. He describes AI alarmism as "old fartism," likening it to outcries over inventions like the calculator or Spellcheck. (The former sparked a 1986 protest of 6,000 sign-wielding math teachers in Washington, D.C.: "The button's nothin' 'till the brain is trained!")

"Old fartism is a bit of a misnomer because there are plenty of young farts, too," says Greene, who uses AI to organize teaching databases. "It's a term for anyone with

#### **IT'S ALL IN YOUR HEAD**

Blue Hen researchers have scored one for athletes. There are nearly 4 million sports-related concussions in the U.S. annually, and an individual who suffers a concussion becomes twice as likely to experience a secondary injury-particularly a lower-extremity musculoskeletal injury-within a year. The most plausible culprit is a lingering neurological deficit that slows an athlete's reaction timing. Traditional post-injury assessments (vision, balance and cognitive testing) cannot detect such a deficit, but when these results are entered into a Blue Hen-designed algorithm, the AI tool predicts the likelihood (and type) of future injury. This means athletic trainers can customize strengthand-conditioning programs to better reduce the chance of a sprained ankle or-eek-torn ACL. The research is already benefiting varsity Blue Hens, but there are potential applications for this technology beyond campus; in the works is an app that may one day help physicians treat the general public.

RESEARCHERS: THOMAS BUCKLEY (pictured at right), AUSTIN BROCKMEIER, WEI QIAN



Al alarmism is "old fartism." "It's a term for anyone with a 'back-in-my-day' attitude. The truth is, people adapt. The world hasn't come to an end yet."

-Philosophy Professor Mark Greene

a 'back-in-my-day' attitude. The truth is, people adapt. The world hasn't come to an end yet."

Indeed, there are reasons to believe AI may *enhance* innate humanity–namely, by unleashing imagination. Artistic expression has typically been the realm of *quote-unquote* artists, but AI is changing the game. Consider Harry Wang, a professor of information management systems. He's empowering business students with various applications for composing music: lyrics, audio, even album cover art. Knowing how to use such multimodal generative AI tools will help Blue Hens in their future careers, but the benefits go beyond professional success.

"To be a good businessperson–or even just an interesting person–you need to be highly interdisciplinary," Wang says. "Creativity doesn't need to be a complex thing reserved for experts."

Other AI projects on campus are set to relieve individuals of burdens, allowing greater bandwidth for creative endeavors or nurturing relationships central to the human condition. When these burdens are financial, researchers at UD's new FinTech Innovation Hub leverage AI to help families build wealth—and that basic tenet of human existence, dignity. Other times, the burdens relate to physical health, and that's when UD researchers like Austin Brockmeier, assistant professor of electrical and computer engineering as well as computer and information sciences, step in. He leads a group using AI to analyze brain data. One project hopes to help seizure sufferers predict upcoming episodes so they don't have to abandon activities like driving or swimming.

"People love to talk about this technology in terms of science fiction, but it's not magical or futuristic," he says. "It's just that, in their complexity, Al tools sometimes create beautiful things that surprise us."

At the very least, this technological revolution presents an

SPILLING The beans

Global population is on the rise, meaning humanity will have nearly 10 billion mouths to feed by 2050. That's tricky, especially given a warming climate that hinders crop production. But take heart: UD scientists are leveraging AI tools for next-generation agriculture. Consider their work with the little lima, a protein powerhouse vital in many parts of the world for economic and food security. (The legume also happens to be Delaware's most widely planted vegetable crop.) By engineering a 350-pound robot that collects data on the plants-and then constructs 3D models of them-the Blue Hens identify which genotypes are resistant to heat and disease, and thus worth breeding. The technology can be applied to nearly any crop, meaning the bean beat has never been more significant. Could this work help save an increasingly populated world? According to Yin Bao, assistant professor of plant and soil sciences and mechanical engineering: "Absolutely."

#### **RESEARCHERS: YIN BAO, EMMALEA ERNEST**

# POINT AND COUNTERPOINT

When it comes to AI, only code is binary. None of the most pressing issues are black and white, and Blue Hen experts are well versed in nuance. But for the sake of debate (and what's more topical than debating AI?), *UD Magazine* asked some of these experts to face off on contentious topics. Here's what they had to say about AI and...

#### POINT

THE ENVIRONMENT

#### JOSEPH NYANGON, BSPA17PHD, deputy director of partnerships at the U.S. Department of Energy

Consider the Texas blackout of 2021. Or any of the smaller, daily energy-grid failures that don't make the news. A changing climate is set to make this problem worse. But Al–which allows for more accurate, real-time monitoring–can help prevent such failures or equip us with solutions when they occur. Al can also help prioritize grid maintenance projects and better integrate renewable energy sources, reducing carbon emissions and optimizing electricity flow within a community or city. Al will improve the management of smart, energy-efficient buildings. In the future, Al may even help us develop entirely new power infrastructures that are more resilient to a changing climate. Yes, powering this technology will require a lot of energy, but the solution to increased power usage due to Al will come from... Al.



#### COUNTERPOINT

SALEEM ALI, Blue and Gold Distinguished Professor of Energy and the Environment

Consider the Texas blackout of 2021. Artificial intelligence requires such an immense amount of energy that widespread adoption may lead to more large-scale grid failures. Already, 800 million people globally lack access to electricity. AI will cause a drastic expansion of computer server farms, centers that gobble up energy as they store and distribute data. We sometimes envision the internet as satellites communicating with one another, but server farms also rely on a huge network of fiber-optic cables along the ocean floor. These are made from materials and exotic metals around the world, the mining of which can release toxic silica dust into the air or cause acid mine drainage in watersheds. People often imagine a dystopian scenario in which computers take over humanity-but that's far less concerning than Al's environmental impact.



#### POINT

LINDSAY HOFFMAN, associate professor of communication; director of public engagement, Center for Political Communication



While artificial intelligence could dangerously impact a democracy, especially in a presidential election cycle, there is also hope for its application. Al tools may lower the heat around contentious issues by helping citizens articulate ideas with

non-combative language, fostering more civil dialogue. Al can distill a candidate's platform or a policy's potential impacts, boosting citizen understanding of the issues and-potentially-voter turnout. And this technology is already assisting citizens with advocacy campaigns for a variety of causes, contributing to more robust civic engagement. On Election Day, Al could be used to streamline administrative processes, and it may be leveraged to identify voter fraud. While Al raises concerns, we may find these tools can lead to a newer, flourishing model of democracy.

# DEMOCRACY COUNTERPOINT

DANNAGAL YOUNG, professor of communication and political science; director of the Center for Political Communication; author of Wrong: How Media, Politics and Identity Drive Our Appetite for Misinformation



#### POINT

#### ALISON TERNDRUP, visiting assistant professor in the Department of Art History

Artists understandably fear their work being scraped or plagiarized by Al tools, but there is no new idea under the sun–we all stand on the shoulders of giants. I think we're going to see a lot more collaboration with Al, rather than reverting to this historical, Western-centric, not-quite-accurate notion of the genius–the Artist with a capital "A"– an isolated person who spontaneously generates creative ideas from within. When it comes to Al art,



ART

if you dig deep enough, you will find the traces of humanity. Now you can explore what pieces or words have come from people and which from machine—and whether you have a preference. By using AI as a mirror in this way, the journey is just beginning.

#### **COUNTERPOINT**

#### KATIE LEECH, assistant professor of art and design

Art produced by AI can be boring, vanilla, reductive. This is because AI tools rip off other artists–painters, writers, illustrators and designers who've not given consent. And they don't rip them off equally. AI tools underrepresent certain races and genders, meaning



we're set to be inundated by the same ideas—the same voices—over and over. Especially for newer artists who haven't wrestled with a blank canvas or page long enough to learn from their failures, AI tools contribute to the misconception that art and creativity should be immediate. They lessen tolerance for struggle, for taking time to evaluate what ideas are worth creating. Art is meant to serve as a mirror that reflects—and helps us understand—our place in the world. When that art is merely surface-level, society suffers. "People love to talk about this technology in terms of science fiction but it's not magical or futuristic. It's just that, in their complexity, Al tools sometimes create beautiful things that surprise us."

> -Engineering and Computer Sciences Professor Austin Brockmeier

# THE WILD WEST OF AI

If regulating AI feels about as likely as flying to Jupiter for a space odyssey, there's good reason. "The field is moving so fast, putting up guardrails is extremely difficult," says Greg Dobler, an astrophysicist turned urban data scientist at UD.

He's not an Al doomsdayer. Dobler uses the technology to improve lives; during COVID-19, his algorithms helped hospitals plan for bed demand. But as someone whose work intersects with policymaking, he sees the regulation challenge as formidable.

Lawmakers tasked with containing these technologies often do not understand them. And given how quickly the tools are evolving, any crash-course-for-Congress is nearly obsolete by the time it's developed. Additionally, regulation requires establishing an AI code of ethics, and that's a thorny proposition. Do we ban the use of AI for making new biological weapons–or leverage this capability before rival nations do it first?

And even if humanity can agree on standards, enforcement presents a whole new barrel of robots. Congress can attempt to limit what AI produces, but that requires an almost unimaginable foresight. Few could have predicted (and thus, prevented) the advent of "revenge porn" (when a jilted lover uses AI to generate nude photos of an ex online) or ChaosGPT (a rogue chatbot plotting to annihilate humanity).

This explains why federal and international attempts at regulation have been vague. "We're reacting to what's happening now," Dobler says. "Instead, we need to think about what may be possible in the future."

Movement on the regulatory front will require regular conversation between lawmakers, the builders of nextgeneration AI models, and technology ethicists—in other words, a fundamental change to our legislative process. But Dobler has hope. Because AI hasn't yet been politicized, American policymakers find themselves at a rare and critical juncture.

"There's bipartisan agreement that something big is coming," Dobler says. "Questions posed by senators across the political spectrum are nearly identical."

Take this unique political alignment as irrefutable proof: When it comes to AI, all things–space odysseys, effective regulatory strategies and sci-fi realities yet to be revealed– are possible. opportunity to take the metaphoric *Matrix* red pill and confront the meaning of existence.

"This moment forces us to reflect on age-old questions: What does it mean to be excellent as a human being?" says Tom Powers, director of UD's Center for Science, Ethics and Public Policy and an associate professor of philosophy. "And exactly what kind of life do you want to live?"

#### RAGE AGAINST THE MACHINE

For some, the answer is simple: A life without AI. Alan Fox, professor of world religions and philosophy at UD, acknowledges the potential value of the aforementioned developments but bemoans an erosion of intellectual autonomy.

"If we lose the ability to think for ourselves–and that's where this seems to be going–what are we even here for?" asks Fox, who has banned the use of AI in his classrooms. "I can't imagine a more boring, existentially irresponsible existence. We might as well give up and let the cockroaches take over."

For Herbert Tanner, director of UD's Center for Robotic and Autonomous Systems, the threat looms large. Even as he partners with colleagues on projects that incorporate AI, with applications for everything from homeland security to infant development, he cautions that overreliance on the tech will ultimately stymie independent, critical thinking.

"I see AI as a pendulum that right now is swinging one way—it's likely to hit a wall and swing back," says Tanner. "As with any powerful new technology, all depends on how one uses it, and reckless use of these tools without appropriate safeguards may have catastrophic consequences."

Compounding the issue is overwhelming evidence that AI algorithms propagate human biases, having been trained on biased or incomplete data. Tools developed by some of the world's brightest minds underestimate the medical needs of Black patients and undervalue female job applicants based on gender.

In response, researchers like Cathy Wu, director of UD's Data Science Institute, are working to ensure AI serves society's most disadvantaged groups. An early developer of the neural network methodology upon which many AI developments rely, Wu's latest project involves leveraging AI to improve health outcomes for U.S. veterans. "It's imperative we not let this technology further widen the gap between the haves and the have-nots," she says. "I want to make sure artificial intelligence is democratized."

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#### **ACCELERATING YOUR LIFE**

Imagine a world where your car drops you at work and then, instead of sitting idle in a parking lot all day, goes on to generate supplemental income, delivering packages for Amazon or people for Uber. This is the vision of scientists behind UD's worldrenowned CAR Lab, sponsored by GM, Toyota and other major automotive players. Tasked with advancing autonomous driving research, the Blue Hens are leveraging AI to create a next-generation operating system that allows a car to "see" clearly in real time—in any weather. The lab is also working to improve energy efficiency and safety, employing machine learning to predict potentially disastrous events like battery failure.

"A new era is coming," says director Weisong Shi. "People don't yet realize how transformative this will be." Helping to usher in this new era, the lab has developed a digital, autonomous driving testbed called D-STAR that researchers at other major institutions can access remotely for the running of their own experiments.

UD'S CAR LAB WAS FOUNDED BY DIRECTOR WEISONG SHI.

> "It's imperative we not let this technology further widen the gap between the haves and the have-nots. I want to make sure artificial intelligence is democratized."

> > -Cathy Wu, director of UD's Data Science Insitutute

"When most people picture a scientist, they likely think of Curie, Darwin or Einstein: a single individual who single-handedly transforms their field. But for the most part, good ideas come from teamwork. That collegial approach is how you tackle AI—how you change the world—and it's something I really value about UD."

-Miguel Garcia-Diaz, vice president for research, scholarship and innovation



The road to a safe and equitable AI future is fraught, and the terrain is constantly evolving. Attempts to navigate this inflection point have landed most Blue Hens in technological limbo, not firmly planted in either pro- or anti-AI camps, but somewhere in the middle of an uncharted spectrum.

This is the case at least for Christopher Rasmussen, associate professor of computer and information sciences. He likens the development of AI to that of the atomic bomb–equal parts amazing and terrifying. "Should we have gone down this road at all? Impossible to say."

This year, he and Michele Lobo, associate professor of physical therapy, are leveraging the technology for the automatic assessment of motor development in infants.

"Sure, I feel torn about the ramifications of artificial intelligence," says Rasmussen, who teaches a graduate seminar on AI ethics. "It's not black and white for me, and these issues govern the types of projects I choose." (On his no-go list are military applications like autonomous weapons capable of making wartime decisions without the variable of human empathy.)

"What the net outcome is for the human race remains to be seen," he adds. "In the meantime, it's important for people to keep having the discussion, to keep shaping AI's direction. That's all we can do."

#### **EDUCATION IN THE AGE OF AI**

When it comes to spearheading dialogue and, ultimately, striking the right balance between man and machine, institutes of higher education are poised to lead. If society hopes to establish, as the Biden administration calls for, an Al "containment strategy"–a collective agreement about what and how much autonomy humans are comfortable sacrificing to

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# WACKYAI

#### SHARING SOME OF THE ZANIEST (NON-UD) APPLICATIONS WE'VE DISCOVERED

**ALL THE BUZZ:** Honeybee populations are in danger, and this spells disaster for humanity's food supply. But take heart. In development by multiple startups, mechanical bees–equipped

with mini propellers– are taking over the pollination job.



CALL ME PRETTY: Beauty is in the eye of the beholder and, sometimes, that beholder is a robot. Thanks to algorithms developed by data scientists for evaluating human attractiveness, a Hong Kongbased company has hosted the first international beauty pageant judged by Al. YOU'RE HIRED: Computers aren't merely sifting through job applications; they're interviewing candidates. Tengai, a yellow-faced robot built by Swedish researchers, wants to know where you see yourself in 10 years.



### **RADICAL FASHION**

The corset died. That's among the major happenings of the 1920s, a decade of liberated women's fashion in which hemlines and haircuts shortened as social freedoms expanded. UD is home to a priceless collection of 60 garments from this radical period, but several are too fragile to exhibit on mannequins. Blue Hen researchers, therefore, are creating digital twins. In a project slated for completion by 2026, they are using AI tools to replicate the collection's textiles, patterns and styles, while building a digital museum and archive to showcase these 3D pieces. The garments each take about a month to create and will be animated as part of a digital fashion show. Museum attendees (who will access the collection from their own laptops) should expect to get up close and personal with every stitch and bead. "It reminds me of when R2-D2 projected Princess Leia," says Kelly Cobb, associate professor of fashion. "It's very innovative, and in our research we didn't see anything similar." The project, a collaboration with the Beijing Institute of Fashion Technology, also highlights the global reach of UD's fashion department.

RESEARCHERS: KELLY COBB, DILIA LÓPEZ-GYDOSH, BELINDA ORZADA

TAKE ME TO CHURCH: Around the world, places of worship are increasingly turning to Al pastors. These blessed bots are suggesting prayers based on specific spiritual problems and, in one Bavarian town, leading services for hundreds of congregants.



**ON TAP:** There's a new bartender in town. London-based IntelligentX has developed a bot-

brewed beer in which consumers add their palate preference (hello, hops; goodbye, lagers), and let Al customize their cold one.



**NSFW:** A Singapore company is leveraging Al to analyze photos of male genitalia. Using what's known as a



convolutional neural network, the tool instantly (and discreetly) diagnoses sexually transmitted diseases and other conditions.



#### FROM UD TO THE WHITE HOUSE

Blue Hen leaders are shaping the Al conversation in academia, industry—and on the world stage. UD President Dennis Assanis is a member of the President's Council of Advisors on Science and Technology, or PCAST, a revered body of White House experts tasked with making science, technology and innovation recommendations. He is one of 28 individuals ensuring the U.S. remains a global leader in technologies of the future, critical to the security of the nation.

Holding this position means Assanis, a globally renowned engineer with significant contributions to clean energy, can bring some of the world's brightest minds to campus. Last fall, at a Board of Trustees' meeting, he led a discussion on AI with fellow PCAST members Laura H. Greene, expert in quantum mechanics from the University of Florida, and Saul Perlmutter, astrophysicist and Nobel Laureate from the University of California, Berkeley.

The conversation included the need for individuals to hone a "radical" ability: outreasoning machines. There was engaging debate on whether this technology will revolutionize human existence or be a flash in the pan. It's difficult to convince an astrophysicist whose research includes the multi-billion-year universe that one technological development is anything but ephemeral. But there was consensus on AI's complexity and constant evolution. If people are

going to understand, engage and advance the dialogue, they said, finding the human-interest angle is imperative.

It's a mission to which Assanis–on campus and at the White House–is committed. "I am truly honored to serve our country in this way," he says.

**UD PRESIDENT DENNIS ASSANIS** 

machines–government and industry leaders will need input from every field, physics to philosophy.

But before academia can help establish these guardrails, higher education must turn inwards. At a time when machines are increasingly providing the answers, what content is worth teaching? If students use AI to pen the first draft of a paper, are they being resourceful—or plagiaristic? And how does using AI to mine data for a scientific discovery challenge longstanding definitions of research integrity?

"There is no consensus yet on the rules that ought to constrain and guide AI, and because the AI space is evolving so quickly, trying to develop the rules is a little like stabbing Jello-O with a fork," says Powers, the ethics expert. "But at UD, people have really rolled up their sleeves, diving in headfirst to sort this out for students and faculty, and to guide the use of AI in education."

In an effort spearheaded by the nonprofit Ithaka S+R, the University is one of 18 institutional cohorts across North America contributing to a national report on the state and future of AI in higher education. UD has also developed programs in artificial intelligence—in the spring, the University became among the first in the nation to offer a graduate certificate in generative AI. And, in the summer of 2023, the interdisciplinary AI for Teaching and Learning Working Group comprising faculty, staff and students convened to examine the AI landscape and provide guidance for campus departments. According to members, educators are on the cusp of a new era-one that, if handled correctly, promises a revitalization of the field.

"If a student's goal is simply to graduate and move on, then yes, AI can undercut learning," says Joshua Wilson, associate professor of education. "But if the goal is to actually learn and grow, then AI becomes a tool to help students find meaning and reward in the learning process itself. If we can focus on that piece, AI isn't a threat."

Gone are the days of rote memorization and textbook cramming. Now is the time for critical thinking, ethical decision making and the development of EQ (emotional intelligence) over IQ.

"To think and read deeply, sympathetically and imaginatively and to express oneself creatively, these are the skills that the machines will never replace," says Matt Kinservik, professor of English. "We're not just preparing a future workforce; we're preparing the stewards of our democracy."

In one of his undergraduate classes, Kinservik has students analyze dystopian literature, including the classic *Brave New* 



"You can get motivated by fear, or opportunity. We aren't putting the genie back in the bottle, so let's figure out how to harness this." *World.* Typically, the curriculum involves essay writing, but Alimminently capable of completing this homework assignment on behalf of an English major–has changed the game. And for this, Kinservik says: "I feel liberated. There's nothing particularly magical about the essay as an assessment tool." Last semester, he leaned into the capabilities of ChatGPT, enlisting it to compose a series of college-level essays, each arguing that a different character is the hero of the novel. Then, his human students critiqued these papers and penned their own arguments against them–exactly the type of machine-output assessment society needs.

"I believe all of the hype surrounding AI," Kinservik says. "But I don't think we should be afraid of this technology–and not just because resistance is futile. This is an exciting moment for education."

#### **MOVING BEYOND FEAR**

Trepidation-how much is valid?-is a recurring theme in conversations about AI. And UD alumnus Vatsal Sonecha, EG91M, who has worked at the intersection of AI and cybersecurity for both private and Fortune 500 companies, understands the impulse-he's more familiar than most with risks posed by AI in the hands of bad actors. But as he sees it: "You can get motivated by fear, or opportunity. We aren't putting the genie back in the bottle, so let's figure out how to harness this technology."

As an adviser to the College of Engineering, Sonecha believes UD students have "moved past fear to understanding the essential controls for safety. They are already working on some really innovative applications of Al... and the outcomes will be amazing."

The rest of us may have some catching up to do. But in all the time spent discerning whether this technology will ultimately help or harm us, perhaps we're missing how accurately it reflects us. Al contains multitudes. It is neither entirely good nor entirely evil. It is simultaneously powerful and inept, capable of making the world better or dismantling it entirely. Like every member of the human race, it is a brilliant, biased, breakable work in progress.

Amidst all the uncertainty, one thing is irrefutable: The inescapable AI is making us *feel*. Something that, as of yet, no robot can replicate.

-Vatsal Sonecha, EG91M

### SHARE YOUR THOUGHTS

On a topic as evolving and endlessly fascinating as AI, we'd love to hear from our readers. Email magazine@ udel.edu to share your insights and opinions.

Oscar Wilde once said "life imitates art far more than art imitates life." If true, humanity should brace for blade runners, transformers and Starship Enterprises. A touch dramatic? Perhaps. But when it comes to navigating the age of AI, sci-fi stories do contain real-life lessons worth revisiting. UD Magazine spoke with Blue Hen experts for their recommendations. Beam them up, Scotty.

Z



English professor who studies the intersection of literature and politics novel by Ann Leckie

control human bodies to use as soldiers.

about race, class and gender, particularly when Al is used for (ostensibly) cheap labor.

# HITTING THE (AI) BOOKS

Could artificial intelligence create new learning tools? That's the question that sparked an innovative Blue Hen project—and a collaboration with Amazon.

For years, undergraduates seeking academic support have been limited to sitting outside a professor's door during designated office hours or signing up for campus tutoring. While these options remain intact, UD's Academic Technology Services (ATS) team sought to increase access any time, for anyone.

Enter UD StudyAiDE, a forthcoming tool that builds off UD's vast digital academic resources, including archived video files and text transcripts from more than 300,000 classes. Partnering with Amazon Web Services, UD has developed from these recordings digital flashcards, study guides, practice quizzes and more.

"Our project started as an idea for using new, exciting technologies to transform data we already have into something our students and faculty would find valuable," says ATS Director Erin Sicuranza.

Over the past year, she and Jevonia Harris, who leads the ATS educational software engineering team, have delivered presentations about the AI-powered project for peers from Cornell to Carnegie Mellon. In May, for an audience of nearly 100 universities, they shared an interactive demonstration alongside Jan Poston Day, EOE91, who serves as higher education community manager at Amazon Web Services.

"We didn't just want this project to align with the strategic goals of our University," Harris says. "We also wanted to have an impact on 'what could be' across higher education."

This isn't the only bit of tech wizardry across UD. Blue Hen librarians are helping students navigate the AI landscape in myriad ways. For starters, they consulted on the UDStudyAiDE project and put together an AI survival kit (https://guides. lib.udel.edu/AI/home) for walking undergraduates (or any member of the public) through the basics: How do you factcheck AI? How should you cite its output?

Additionally, UD librarians have launched a chatbot pilot called UDstax to answer-at any hour-frequently asked questions about navigating library webpages and procedures. When a human is required for trickier researchrelated queries, the chatbot directs users to a real-life librarian, helping students better understand the bounds of machine-made intelligence. Throughout the year, the library team also hosts workshops on a range of topics, from using image generators to effective prompt engineering for generative tools. "Approaching information technologies and knowledge production with a spirit of critical inquiry is what libraries are all about," says Meg Grotti, assistant head of instructional services. "I've never seen a time when library expertise is more needed than now, and I'm so excited about the possibilities."

#### -Chris Vito

Below: Members of UD's Academic Technology Services team, from left to right: Kelly Cross; Joe Naccarato, ASOO, ASO4; Jevonia (Nova) Harris, EGO1; Rafi Turitz-Sweifach, BE22, 24M; Erin Sicuranza, AS95, EHD99M; and Ryan Eagan, EOE23 Photo by Kathy F. Atkinson

# ALUNAR NEWS

# ALUMNI WEEKEND 2024

OOUBLE DELS

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This summer, nearly 1,700 Blue Hen alumni, friends and family returned to their UD home for Alumni Weekend, held May 31-June 2. With dozens of events throughout the weekend, highlights included reunions for the Classes of 1999, 2004, 2009, 2014 and 2019; a 5K and post-race party at Klondike Kate's; a drag show; the Dining Hall Brunch with the Mascots; the Double Del Social; the Blue Hen Beer Garden with live music by Chorduroy; and the Rock the Roost concert with Kristen and The Noise, which replaced the traditional Dela-bration event.



3458

1845

HOTOS BY KATHY

# WHO DO WE Love?

On the 50-year anniversary of a career that began right here at UD, rocker George Thorogood returned to his Delaware roots.

Earlier this summer, the "Bad to the Bone" singer received the University's Medal of Distinction, the highest nonacademic honor for those who have made significant cultural, humanitarian, scientific or intellectual contributions to society or in their profession. Thorogood is the first entertainer to receive the Medal of Distinction, which has been awarded by the University since 1979.

After the ceremony, those gathered to celebrate Thorogood's career made a short walk across Main Street to unveil a plaque reading "Thorogood Alley." The pedestrian thoroughfare, renamed in the performer's honor, sits adjacent to the former Stone Balloon Tavern, a staple for alumni who recall legendary musical acts there such as Bruce Springsteen, Dave Matthews and Metallica.

Born in Wilmington, Thorogood began belting out songs in the 1970s, playing gigs in residential basements for sparse crowds several years before he started booking higher-profile venues between Baltimore and Philadelphia. Predating even those early-years shows was his first public performance in December 1973, when he played on a tiny bandstand in UD's Lane Hall. That short set consisted of only a few songs, most of which were cover tracks, and it is credited with launching an international music career that has spanned five decades and led to 8,000 concerts.

The ensemble that Thorogood fronts, better known as George Thorogood and the Destroyers, has gone on to sell 15 million albums worldwide. Outside of music, he has aimed to change lives with the formation and financial support of the Marla Thorogood Memorial Fund for Ovarian Cancer Research in memory of his late wife.

"Some people get avenues named after them, streets named after them, or airports named after them. I've got them all beat. I will now have an alley named after me," Thorogood said. "I'm not sure how distinctive I am, but I



George Thorogood, pictured here with President Dennis Assanis, received the University of Delaware's Medal of Distinction–UD's highest non-academic honor–in a June 21 ceremony at the Hyatt Hotel on Newark's Main Street.

accept it in the spirit it is given and am certainly flattered to receive the honor."

This year, UD awarded nine Medals of Distinction. Joining Thorogood are: U.S. Sen. Tom Carper, BE75; physician Anthony Fauci (p. 7); NASA Science Chief Nicola "Nikki" Fox (p. 8); Calvin Keeler, former interim dean in the College of Agriculture and Natural Resources; Kristi Kiick, Blue and Gold Distinguished Professor and chair of biomedical engineering; Heidi Sarver, professor and longtime director of the UD Marching Band; Scott Stevens, longtime director of UD's English Language Institute; and Levi Thompson, EG81, former dean of the College of Engineering.

-Peter Bothum, AS97, BSPA24M, and Chris Vito

# HIGH ACHIEVERS

By Megan Maccherone and Alison Armstrong

This year, the University of Delaware Alumni Association (UDAA) awarded seven Blue Hens their most distinguished accolades: the Alumni Wall of Fame Awards; the Outstanding Alumni Awards; and the Emalea Pusey Warner and Alexander J. Taylor Sr. Awards for Outstanding Seniors.



### ALUMNI WALL OF FAME AWARDS

This honor was established in 1984 to recognize graduates with outstanding professional and public service achievements, community impact and long-lasting connection to UD.

Terrell Ward Bynum, AS64, an internationally recognized philosophy scholar in computer and digital ethics at Southern Connecticut State University (SCSU), was nominated for the award by fellow Blue Hen and SCSU Provost Robert Prezant, EOE81. The two bonded over their UD education and mentors, including philosophy professors Cyrus L. Day and Bernard H. Baumrin. In appreciation, Bynum has supported students since 1986, and he says, "I will continue to do so."

PHOTOS BY KATHY F. ATKINSON. PHOTO OF COURTNEY SMITH GOODRICH COURTESY OF ALUMNA



Courtney Smith Goodrich, BE93, BSPA95M, has led global technology initiatives at two of the largest U.S. banks, JPMorgan Chase (JPMC) and Wells Fargo, where she currently serves as executive vice president. In 2009, Goodrich helped launch UD's Global Enterprise Technology program for students to earn a minor while gaining hands-on experience in global organizations like JPMC. She has served on the UD President's Leadership Council and multiple advisory councils and established a scholarship for business students.



**Collins J. Seitz Jr., AS80**, is chief justice of the Delaware Supreme Court, following the tradition established by his father and fellow Blue Hen, Collins J. Seitz Sr., AS37. Having authored scores of corporate law decisions during his service on the bench, the junior Seitz has left an indelible mark on Delaware law. He has also served as a frequent lecturer and guest at UD events, including the 2021 James R. Soles Lecture on the Constitution and Citizenship. Seitz is a Double Del with wife Gail Seitz, EHD72, and father to Danielle Murray, ANR03.



Emilie Delaye, left, and Allie Rebuck

# **OUTSTANDING ALUMNI AWARDS**

Since 1952, these awards have been presented annually to two outstanding alumni in recognition of their volunteerism to UD and/or the UDAA.



**Raymond Jacobsen Jr., AS71**, is an attorney whose commitment to UD extends well over a quarter century. A Double Del with wife, Marilyn Jacobsen, AS72, and parent to Hunter Jacobsen, AS24, he volunteers for the Parent and Family Leadership Council and has opened his D.C. Metro home to more than 40 first-year Blue Hens and their families through New Student Send-Off events. Jacobsen has advised countless students during their law school application process and created an endowed scholarship to support their professional pursuits.



Linda Justice Myrick, EG77, recently retired from her role as general manager of global manufacturing company Arkema Inc. Her family of "hengineers" includes husband, Steven Myrick, EG77, sons, Steven Myrick Jr., EG11, and Gregory Myrick, EG13, and daughter-in-law, Lauren Myrick, EG13. The family has established funds to support undergraduate students in biomedical engineering and chemical engineering, and she has volunteered on numerous councils and associations, serving as chair of the College of Engineering Advisory Council.

### WARNER TAYLOR AWARDS

The Emalea Pusey Warner and Alexander J. Taylor Sr. Awards for Outstanding Seniors are presented annually to two students who demonstrate leadership and excellence in academics and community service.

To help first-year business students acclimate to campus life, Warner recipient Allie Rebuck, BE24, launched a Lerner College Involvement Fair her sophomore and junior years, extending membership for some 20 clubs and offering 750 first-year students meaningful ways to connect. She continued to enhance UD's student experience as a teaching assistant and peer mentor for the introductory Basics of Business course, chairperson of the 13-member Lerner Student Advisory Board and Lerner Ambassador. "I am fulfilled in knowing I played a small part in enhancing someone else's educational experience at UD," says Rebuck, now an analyst in the Hilton Worldwide Holdings' LAUNCH Program.

Taylor recipient Emilie Delaye, BE24, launched her startup, Relief Chronic Care, following her own battle with chronic illness. Her solution-a comprehensive platform to connect women with necessary resources, tools, community members and experts-has encouraged other Blue Hens with chronic illness to seek support and inspired fellow female entrepreneurs to pursue their projects. She has also volunteered for UD's American Host Partnership Program, served as a designated notetaker for Disability Support Services and interned with the Delaware Youth Leadership Network. "I aim to assist community members in recognizing their own unique value," says Delaye, who will continue to grow her business while interning at the American Apparel and Footwear Association in Washington, D.C. 🖕

# Four Blue Hens win 2024 Pulitzer Prizes

Meet the alumni who received journalism's highest honor

#### DAVID HOFFMAN ON DICTATORS AND DEMOCRACY

David Hoffman, AS75, was livid. A 21-year-old in Belarus had just received a 6.5-year prison sentence for reposting a text that criticized the war in Ukraine.

"It grabbed me, locking her up for this small expression of free thinking. It could have been any of us, any of our kids," says Hoffman, a *Washington Post* editorialist who channeled his outrage at the keyboard. "I wanted hundreds of thousands of people to be as angry as I was."

His ensuing article would be one of the newspaper's most-read pieces of 2023, launching a seven-part series on how authoritarian regimes repress dissent in the digital age. It contributed to the second Pulitzer of Hoffman's career, the 2024 Prize in Editorial Writing.

Previously, his book, The Dead Hand: The Untold Story of the Cold War Arms Race and Its Dangerous Legacy, received the 2010 Pulitzer Prize in General Nonfiction. In it, Hoffman researched the 23,000 nuclear weapons (an estimated 1 million Hiroshimas) that remained on Earth after the Cold War, re-examining how the world amassed so much destructive power. The answer: complacency.

The central lesson of indifference remains at the core of his current work.

"The whole [2024] series was an effort to wake people up, to shake them about the consequences of dictatorships,"



says Hoffman. "Democracy is messier, noisier. But we need a free press, regular elections, honest outcomes. We must make the argument to the world that it's a better system."



#### JACQUELINE JONES ON THE HISTORY OF WEALTH INEQUITY

Today, it's the site of a popular Delaware mall. But when Jacqueline Jones, AS70, thinks of Newark's Christiana region, she returns to her childhood, a tiny crossroads where Black children living just a few homes away were bussed to separate schools.

Her early curiosity about race would become central to her lifelong work as a scholar and historian. The MacArthur Fellow has written extensively on the topic, with two books nominated for Pulitzers. Her most recent, No Right to an Honest Living: The Struggles of Boston's Black Workers in the Civil War Era, won the esteemed honor-the 2024 Pulitzer Prize in History.

Jones focused on her current hometown in Massachusetts to better understand the state's seemingly progressive laws: a place where Black men had the right to vote in 1780, nearly 100 years before the 15th Amendment extended that right to the whole country; where an 1854 court case desegregated Boston schools before the 1954 Brown v. Board ruling; where Black citizens could sit on juries and run for office decades before the nation.

"There was a lot of self-congratulation," says Jones. "I didn't want to make that judgment until we looked at work."

What she found was an unjust and unequal labor market, where most Black women served as domestic servants and most Black men as peddlers, porters, servants and tenders. Perhaps most surprising were the potential allies who could have served as racial advocates but didn't. Among them were white abolitionists more concerned with the plight of enslaved Black people in the South than their neighbors in the North.

Although Jones' interest in understanding the past began in childhood, they grew stronger in college. "UD was a whole new world," she says. "It taught me an entirely new way of looking at history–examining it through the lens of ordinary people."

#### TODD FRANKEL AND PAUL KANE ON AMERICA'S GUN PROBLEM

Shortly after the Uvalde school shooting that killed 19 children and two teachers. reporters from The Washington Post came together to analyze the weapon of choice for 10 of the 17 deadliest U.S. mass shootings since 2012, including the 2022 Texas massacre.

Their sobering examination of the AR-15 semi-automatic rifle won the 2024 Pulitzer Prize in National Reporting, with two Blue Hens making important contributions to the series.

Todd Frankel, AS97, served as lead reporter for a story on how the weapon, once shunned by gun manufacturers, came to dominate the marketplace. He also co-authored an article on the likelihood of high-capacity magazine bans.

Paul Kane, AS92, co-wrote the final story in the package, spotlighting senators who regretted their post-Sandy Hook vote against federal background check expansion efforts.

Having covered Congress since 2000, the last eight years as The Post's senior congressional correspondent, Kane didn't expect any to recant their decision. To his surprise, they did, some occasionally breaking down in tears. "It was almost a form of therapy," he says. "They saw it as a stain on their record."

Meanwhile, Frankel, an enterprise reporter on the financial desk, anchored a reporting team that researched how the AR-15 became the bestselling gun in America. He also explored the 1994 bans on assault weapons and highcapacity magazines, both of which expired in 2004.

"Right or wrong, we wanted to highlight the decisions made and the repercussions that followed," he says.

This goal-to question, comprehend and inform-was instilled in both Pulitzer winners as Blue Hen students.

Kane recalls stumbling into a journalism course and quickly finding his passion. Frankel credits longtime journalism professor Kevin Kerrane with opening his eyes to "ambitious, big-picture stories."

The respect is mutual from the UD professor, who recalls hearing Frankel on Fresh Air with Terry Gross, shortly after The Washington Post series published: "I was reminded, once again, of how much I respect Todd's work." 🖕

–Artika Rangan Casini, AS05



Todd Frankel, AS97



Paul Kane, AS92

OM WILLIAI

THE FUTURE OF AMERICAN POLITICS

Earlier this spring, more than 65 alumni and students visited the NPR headquarters in Washington, D.C., for a special UD-hosted event, Conversations and Connections: Navigating the Future of American Politics.

Journalism Program Director Nancy Karibjanian, AS80, delivered the keynote. Erin Cassese, assistant director for the Center for Political Communication (CPC), moderated a panel that included NPR senior political editor and correspondent Domenico Montanaro, ASO1; contributing editor for The Atlantic Nora Kelly Lee, AS12; and new CPC Director Dannagal Young.

Topics spanned a wide range of issues: the media landscape and role of social media, demographic changes, the "graying of Congress," objectivity in reporting and

VERSATIONS & CONNECTIONS



"What a joy seeing UD alumni from across the years, including my former students and current UD students (studying 'abroad' in D.C.) all come together to think and talk about the role of media in American democracy," says Young.

To stay informed of upcoming alumni events, visit udel.edu/alumnievents. 🦆

### CLASS OTES

#### 1960s

#### JOHN K. LANDIS, AS65,

15h

AS69M, of Bethlehem, Pa., has published a book, Bethlehem Steel: Rusting Relic, along with his son, Steve, who took 125 photos inside the plant soon after its 2006 closing, while John wrote the text.



Wilmington, Del., has published A Will to Win about Philadelphia golf legend William Hyndman III. It is Riley's fourth book since turning 70. His previous book, How He Played the Game, about Delaware's Ed "Porky" Oliver, received best book awards from the Delaware Press Association and the National Federation of Press Women. It was also a finalist for the United States Golf Association's annual Herbert Warren Wind Award.

D. PRESTON LEE JR., EG69, of Lewes, Del., was named



In his spare time: Landis is a quide for Historic Bethlehem Museums and Sites, giving walking tours of the abandoned steel mills along a walkway paralleling a 46-foot-high railroad trestle built early last century to carry the raw materials for making iron to the five remaining blast furnaces.

Delaware's 2024 Engineer of the Year by the Delaware Engineering Society.

#### **1970**s

GARY GANZI, EG71, of Lexington, Mass., has joined the law firm Lando and Anastasi as senior counsel. His technical expertise includes chemical engineering, materials

science water and wastewater treatment and reuse, membranes, polymers and electrochemistry. He previously served as head of intellectual property at Evoqua Water Technologies.

#### RANDI (JAGEL)

MARRAZZO, BA71, of Philadelphia, cofounded A Modern Reveal (amodernreveal.com), an organization aimed at promoting the music and stories of historical women composers. The website's advocacy and research led to the first publication of 24 Italian songs and arias by women composers in 2020 and 24 French songs and arias by women composers in January 2024.

J. PATRICK WALKER, HS71. 75M, of Newark, Del., was inducted into the Delaware Track and Field Hall of Fame on Nov. 19. 2023.

#### LINDA SHERIDAN, AS73,

of Middletown, Del., has published her first book. Just Because He Is, a spiritual handbook for women to view dating through a different lens. She welcomes reader feedback at Scrabble211@gmail.com.

#### LOREN ELMER, AS74.

of Wilmington, Del., has published Stay Alive While Driving: The Secrets of a



#### WE DUG THE PICTURE

The memories are hazy, but a handful of alumni from 1975 recall taking this photo on the small, grassy knoll behind Lane and Thompson Hall. Many of the students lived in Lane Hall and posed for JOHN MARTINEZ, BE75, then an editor and photographer for The Review. "Imagine my surprise to see the picture," Martinez says of the photo printed in the last issue (see image at left). "While theoretically possible, I doubt the 14 of us crammed in for a ride. That said, it was the mid-70s and stranger things have happened!" 🖕







David Ruskai, AS76 married Valerine Misquitta

Groovy wagon.



Former Race Car Driver. "Anyone can drive from point A to point B," he says. "It's when the unexpected happens—your car skids, a drunk driver comes at you head-on—that most people are not prepared to handle. My book teaches the driving techniques you need to know to keep you and your loved ones safe."

**DAVID RUSKAI, AS76**, of Woodbridge, N.J., married Valerine Misquitta on March 25, 2023.

SUE STACKHOUSE, BE76, of Ocean City, N.J., KATE EVERETT WARR, BE76, of Hilton Head Island, S.C., KATE MURPHY SIPES, AS77, of Ellicott City, Md., EVE TERRELL BRUCE, BE77, of Longmont, Colo., and PEGGY GEHLHAUS MCINTYRE, BE76, of Raleigh, N.C., reunited in Hilton Head Island earlier this spring. The Blue Hens met in Smyth Hall and later lived in the Christiana Towers.

DENNIS PURCELL, BE77, of Rye, N.Y., has joined the board of directors for NewYorkBio, an advocacy group that works to advance life science research and commercialization.



Clockwise, from top left: Sue Stackhouse, BE76, Kate Everett Warr, BE76, Kate Murphy Sipes, AS77, Eve Terrell Bruce, BE77, and Peggy Gehlhaus McIntyre, BE76

"Traveler," carbon pencil and charcoal drawing by Wendy Jones Donahoe, AS78



MITCHELL POTE, AS79, of Indianapolis, Ind., closed his solo firm in December and has retired from the practice of law.

#### **1980**s

LYNN EVANS, AS80, of Greenville, Del., received

the 2024 Driving Force Award from the Delaware Community Foundation's Fund for Women for empowering women and girls in Delaware. Evans directs the Women's Leadership Initiative at UD's Lerner College.

#### MICHAEL S. FOX, EHD80M,

of Punta Gorda, Fla., has retired following a decades-long career as marketing director for two ophthalmology companies, lolab and Pharmacia, where he helped launch the industry-leading glaucoma treatment, Xalatan (latanoprost), which achieved global sales of nearly \$2 billion.

Double Dels PETE MILL, BE82, and DONNA (BUTLER) MILL, BE82, of West Chester, Pa., and TIM TOMPKINS, BE84, and KRIS



(MEYER) TOMPKINS, AS82, of Salem, S.C., reunited at Homecoming to cheer on the Hens.

#### GEORGE KASNIC, BE84,

of Havre de Grace, Md., achieved national board teacher certification status in history, social studiesearly adolescence. Kasnic is a dual-certificated (social studies/math) middle school teacher serving the students and community of Edgewood Middle School in Harford County.



 He hearts Newark: Fox turned down a master's program at Columbia University to attend UD,

attributing his professional success in part to his Delaware education. "Whether you're teaching in a classroom or making a sales pitch, you have to be able to understand another person's perspective and know what information they need."



Lynn Evans, AS80



George Kasnic, BE84

From left to right: Tim Tompkins, BE84, Pete Mill, BE82, Donna (Butler) Mill, BE82, and Kris (Meyer) Tompkins, AS82



#### LENA STRINGARI, AS88M,

of Pleasantville, N.Y., has been named chief of conservation for the National Gallery of Art. She previously served as deputy director and Andrew W. Mellon Chief Conservator for the Solomon R. Guggenheim Foundation.



#### "I love the fact that I'll be working at an institution that is free for all

people. It levels the playing field for culture when anyone can walk in at any time."

—Lena Stringari. AS88M on her new position at the National Gallery of Art

#### **DOUGLAS GAFFNEY,**

EOE89, of Cherry Hill, N.J., has been named national ports and coastal resilience practice lead for AtkinsRéalis, an engineering firm that supports clients adapting to climate change.

#### **1990**s

**STEVE PRUSAK, EG90**, of The Woodlands, Texas, has been named president and CEO of Chevron Phillips Chemical.

TIM TOBIN, AS90, of Washington, D.C., published The Clarity Advantage to show how clear communication leads to credibility and influence. This is his third leadership book, following Your Leadership Story and Peak Leadership Fitness.

ADRIANA LEELA BOHM, AS91, of Wilmington, Del., has coauthored a book, Teaching and Confronting Racial Neoliberalism

#### **GROWER OF THE YEAR**

The growl of a beast. That's how **LEN GRASSO, ANR80**, describes the sound of the EF-3 tornado that devastated his life's work.

On Sept. 1, 2021, he and his wife, **NEDDA (SORBELLO) GRASSO**, **BE81**, emerged from their basement in Mullica Hill, N.J., to find that a neighbor's roof had crashed through their family room. Outside, their commercial vegetable farm looked like a war zone.

Two and a half years later, Grasso and Son Farms is once again thriving, and the Blue Hen was named 2024 Vegetable Grower of the Year by the Vegetable Growers Association of New Jersey.

"I knew deep down in my soul I couldn't give up this business," says Grasso, who credits his UD degree in agricultural business management with helping him bounce back. "Education is not just about facts and figures. It's about developing the right confidence. UD taught me how to approach problems—how to carry myself, even when things get hard.

"I didn't want this storm to define me." 🖕

in Higher Education: Autoethnographic Explorations of the Race Studies Classroom. Bohm is a sociology professor at Delaware County Community College.

#### **KEVIN HERGLOTZ, AS91**,

of Los Angeles, has been named executive vice president of institutional advancement for the Milken Institute, where he oversees teams for business and program development, global events and programming, marketing and communications, and government affairs.

#### ALICE (NOVICK) SIMONS,

AS92, 94M, of Crofton, Md., is engaged to William Alston. Their first date was at the Deer Park Tavern and included a walk through campus.

#### KENNARD WIGGINS, AS92,

of Elkton, Md., recently published his eighth history book, *Delaware Patriot*  Heroes, a dual biography of Revolutionary War Continental Army Capts. Robert Kirkwood and Peter Jaquett.

#### DARRYL CONWAY, HS93, 🖗

of Dundee, Mich., has been inducted into the National Athletic Trainers' Association Hall of Fame. Conway is the executive senior associate athletic director and chief health and welfare officer for University of Michigan Athletics. He also co-owns



Alice (Novick) Simons, AS92, 94M, is engaged to William Alston

LOREN BARRON, ASO3,

of Kennett Square, Pa., has

joined Kaufman Dolowich to

serve as managing partner

for the law firm's new

RYAN EBNER, BEO3, of

elected partner for tax firm

Bel Air, Md., has been

CohnReznick LLP.

Delaware office.



**In good company:** Conway received UD's Presidential Citation Award in 2012. His NATA induction follows that of the late Roy Rylander, founder of UD's athletic training program and head tennis coach, who joined the Hall of Fame in 1986.

Sports Medicine Emergency

Management, a training

program for certified

athletic trainers.

STACEY CAPASSO

WILLIAMS, EHD93, of

Ellicott City, Md., earned a

doctorate in educational

leadership from Frostburg

State University in 2023. Her

araduate work contributed

to a \$1.25 million grant from

the U.S. Department of

Education to increase the

Maryland public schools.

recruitment and retention of

special education teachers in



Meredith Warner, AS95

#### MAUREEN JOHNSON,

AS94, of New York City, has published *Death at Morning House*, a modern thriller featuring a queer protagonist and set in upstate New York's Thousand Islands region.

#### MEREDITH WARNER,

AS95, of Baton Rouge, La, has published her first book, Bone on Bone: An Orthopedic Surgeon's Guide to Avoiding Surgery and Healing Pain Naturally. Warner is an orthopedic surgeon and founder of Well Theory (thewelltheory.com), which advocates for natural medicine and nonoperative therapies.

#### CYNTHIA FALK, AS96M,

**01PHD**, of Cooperstown, N.Y., is assistant dean of graduate studies at SUNY Oneonta and continues to teach at the Cooperstown Graduate Program. Falk also serves as deputy mayor of the Village of Cooperstown.

#### **RICHARD ROBERTS, AS98**,

of East Windsor, N.J., has been appointed chairman of the New Jersey Title 19 Voting Machine Examination Committee for the Division of Elections. He is an attorney at Roberts and Roberts LLP, which specializes in intellectual property law.

#### **2000**s

#### KARL J. CHALABALA, ASO2,

of Lewes, Del., has been named partner of Decade Renewable Partners, a Houston-based alternative investment firm focused on the clean energy transition of the global economy where Chalabala serves as senior investment analyst.

#### KRISTIE MIKUS, BSPA02M,

of Potomac, Md., has been named executive director of the Global Health Technologies Coalition. In this position, she will lead advocacy efforts to accelerate the creation of new technologies to drive global health progress.

"I knew I wanted to work internationally, and the UD faculty helped make that happen." —Kristie Mikus BSPA02M

#### **MAINE CONNECTION**

Rhonda Poliquin's retirement as principal of New Suncook School in the small town of Lovell, Maine, was "a really big deal," says **CAROLYN (MYERS) LEWEY**, **EHD97**, who succeeded Poliquin in the role. "Rhonda is such a high-quality educator and only the second principal in the school's 50-year history."

Both stepped into their leadership positions following teaching roles, and both would soon discover another shared connection: their alma mater.

Lewey had just taken her son on college tours, including a stop in Newark, Del. When **POLIQUIN (NÉE BOYER), EHD81, 82M**, learned of the trip, she proudly exclaimed, "I went to UD, too!"

"When I think about Rhonda and how respected she is, I feel like Delaware really prepared us well," says Lewey. "It's a big part of me still."

And though her son opted for a smaller college closer to home, the lure is hard to resist. "He loved campus and is thinking about UD for grad school," says his mother. "In the meantime, I have two more kids!"



Rhonda Poliquin, EHD81, 82M (left) and Carolyn (Myers) Lewey, EHD97

# • **Her boots are made for hiking:** As a cross-country student-athlete, Mood enjoyed running in White Clay Creek State Park and, later, along the Newark Reservoir and Pomeroy Rail Trail. "Delaware might not



have the elevation," she says, "but there are still plenty of great options to get out in nature!"



ABBY MOOD, EHD05, of Denver, has published Best Hikes in Colorado's Front Range, a guidebook that highlights the top trails from Fort Collins to Colorado Springs.

MATTHEW P. WEIK, HS06, of Wilmington, Del., was elected president of the Delaware Chiropractic Society, where he previously served two years as vice president.

#### **2010**s

PAUL STOLTZ, HS10, and NICOLE LOMBARDO STOLTZ, AS11, welcomed daughter Paisley Joan on Aug. 17, 2023.

#### BRANDON ZIMMERMAN,

EG14, of Narvon, Pa., won "Best Presentation in National Security" and the "People's Choice Award" at the inaugural National Lab Research SLAM in Washington, D.C. Zimmerman is a postdoctoral researcher at the Lawrence Livermore National Laboratory.

#### LORENE COURTS, EHD15, HALEY LEO, HS15, REBECCA LILLQUIST, HS15, and JULIANA SULLIVAN, HS15,

were on a girls' trip in Savannah, Ga., when they asked a stranger at the local coffee shop to take their picture. "When he brought out his





#### **TRANSFORMING OT**

The word "no" makes **VARLEISHA (GIBBS) LYONS, ASOO**, push harder. As a UD student aspiring to be an occupational therapist (OT), she was told to raise her GPA or consider "smaller [graduate] schools in the Midwest." The following semester, she got straight As and attended Columbia University. As an OT entering academia, she was told: "I don't know if you're cut out for this."

"People doubted my abilities," says Lyons, now an accomplished author, international speaker and the first vice president of diversity, equity, inclusion, justice, access and belonging (DEIJAB) for the American Occupational Therapy Association (AOTA). In this role, she is working to increase diversity in the field, where approximately 14.8% of practitioners are people of color, while adding support and resources to make all practitioners more culturally intelligent in areas of race, gender, disability, age and "everything that makes us different."

She is also partnering with Delta Sigma Theta (Mu Pi Chapter) sorority sister **ANGELA WARREN, AS98**, to create pathways for the profession. She and Warren, DEIJAB practice manager at AOTA, have established a grant-funded Diverse Leaders Program to enhance diversity and strengthen leadership for established practitioners.

phone, we saw the UD sticker and realized they were fellow Blue Hens!" says Courts, adding, "So great meeting you, Kyle ['81] and Rob ['85]!"

MORGAN DICKERSON, AS15, of Mount Tabor, N.J., and DAVID SANG, BE15, of Newark, Del., got engaged in Sonoma, Calif. The two met as first-year students living on the same floor (Russell A3).

EMMA K. GREY, HS16, of Wilmington, Del., is now a certified registered nurse

#### practitioner at Jefferson University Hospital, where she previously worked as a nurse on the COVID and MICU units.

BRANHAM MENARD. AS17, and SACHI (BRATHWAITE) MENARD, HS17, 20M, of Newark, Del., were married on April 8, 2023.

ALYSSA LUBRANO, AS18, and WALKER WILEY. AS18, of Rockville Centre, N.Y., were married on July 2, 2023.

#### 2020s

#### EYAL SCHWARTZ, AS20.

of Boston, has joined Sherin and Lodgen LLP as an associate, representing clients in commercial litigation matters in state and federal courts.

HEATHER CHIDEL, EG22, of Odenton, Md., and CASEY ROCK, EG22, of Wilmington, Del., are engaged. 🦤









Photos top to bottom

Blue Hens Lorene Courts, EHD15, Haley Leo, HS15, Rebecca Lillquist, HS15, and Juliana Sullivan, HS15, meet fellow alumni Kyle and Rob [last names and class years unavailable] in Savannah, Georgia.

Morgan Dickerson, AS15, of Mount Tabor, N.J., and David Sang, BE15 Eyal Schwartz, AS20

Branham Menard, AS17, and Sachi (Brathwaite) Menard, HS17, 20M Alyssa Lubrano, AS18, and Walker Wiley, AS18



# GAIA

#### **MUSIC MAN**

AVI AMON, ASO8, BEO8, graduated from UD with "a lot of joy, but not a lot of plan." He soon began working in UD's admissions office, producing Delaware: The Musical alongside fellow counselor, DREW RIFKIN, BE13M. Their YouTube video amassed more than 100,000 views, was featured in The New York Times, Washington Post and other publications-and ultimately served as Amon's portfolio for his NYU Tisch School of the Arts application.

"[The musical] is such a testament to Delaware," says Amon, crediting thensupervisors AMY GREENWALD FOLEY, EHD13PHD, and CHRISTINE SCHULTZ, EHDOOM, O6EDD, for their support of the project. "The attitude was: 'You have an idea? Let's try it."

Today, the Brooklyn-based musician has composed the music and lyrics for Through the Sunken Lands, a musical that premiered at the Kennedy Center earlier this spring. He has also scored the feature film, The Fisherman, which premiers at the 2024 Venice Film Festival, and completed a residency at MacDowell, the acclaimed artist's residency program in New Hampshire. 🦆



#### **GOING SOLO**

#### NJIOMA GREVIOUS,

AS23M, of Washington, D.C., won the 2024 Avery Fisher Career Grant, awarded to instrumentalists with great potential for solo careers. Grevious is a violinist in the Abeo Quartet and previously won the Grand Prize of the Concert Artist Guild (CAG) and the Young Classical Artist Trust CAG Elmaleh Competition, as well as the Robert F. Smith First Prize and the Audience Choice awards in the Senior Division of the Sphinx Competition. 🦢

#### **SHARE YOUR NEWS**

The Magazine encourages alumni to send us news to share with your fellow Blue Hens. A new job, a promotion, a personal or professional award ... they're all accomplishments we want to announce. Email a note or a press release to magazine@udel.edu. Please include your hometown, graduation year and college or major.

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### IN MEMORIAM



**DAVID P. ROSELLE** 

David P. Roselle, 25th president of the University of Delaware, passed away on Monday, April 15, 2024. He was 84. Dr. Roselle served as president of UD from May 1990 until his retirement in July 2007, when he was named president emeritus.

"Students, faculty, staff, alumni and community members all continue to benefit from President Roselle's enduring legacy," said UD President Dennis Assanis. "Indeed, we are a stronger, more vibrant institution today because of his leadership and dedication."

Under Dr. Roselle's leadership, the University of Delaware achieved many major milestones, including the highly successful completion of its first capital fund-raising effort, the Campaign for Delaware, which raised more than \$431 million (from an initial goal of \$225 million).

Accomplishments during Dr. Roselle's tenure include:

- an endowment in excess of \$1.2 billion, compared to \$326 million in 1990;
- an increase in average SAT scores of entering freshmen from 1121 in 1991 to 1206 in 2005, and an increase in student aid from \$19 million in 1991 to \$56 million in 2005;
- 75% increase in full-time graduate students and a 160% increase in financial aid to graduate students;
- an increase in the percentage of graduates who have taken advantage of study abroad from 11.8% in 1990 to 41% in 2005, and a dramatic change in scholarship support for study abroad from \$0 in 1990 to \$400,000 in 2005;
- greater diversity on the campus among students, faculty and staff;

- an increase in scholarship support for men's and women's varsity athletics from \$1.3 million in 1990 to \$5.8 million in 2005;
- an increase in the number of endowed faculty positions from 21 in 1997 to 106;
- the addition of major buildings across the campus, including the Bob Carpenter Sports/Convocation Center, Allen Laboratory, Gore Hall, new sorority houses, Trabant University Center, Lerner Hall, Studio Arts Building, P.S. du Pont Hall, the Courtyard Newark-University of Delaware, George Read Hall and three parking decks, as well as Arsht Hall in Wilmington, the Paradee Center in Dover and the Carvel Research and Education Center in Georgetown;
- renovations of almost all campus buildings, including Mitchell Hall, Memorial Hall, Bayard Sharp Hall, Mechanical Hall and Jastak-Burgess Hall;
- completely integrating technology into the University's infrastructure so that all campus buildings are wired for computer access, with many offering wireless support when appropriate;
- an award-winning use of technology across the campus to facilitate everything from course registration to human resources management, all in a way that is user-friendly;
- a transformed University of Delaware Library, with thousands of resources available to the University community online, 24 hours a day, seven days a week;
- the acquisition of the Paul R. Jones Collection of African American Art, which includes significant holdings of works by 20th-century African American artists; and
- an award-winning effort to address the problem of alcohol abuse on campus, including nine years of support from the Robert Wood Johnson Foundation.

In June 2003, UD's Center for the Arts was officially named the Louise and David Roselle Center for the Arts. In 2005, the American Council on Education presented Dr. Roselle with its Council of Fellows Mentor's Award for higher education leadership development. In 2008, the University of Delaware conferred Dr. Roselle an honorary doctor of science degree, commending him for being a "respected educator and mentor, a visionary leader and administrator, a valued steward of the University's physical campus, a talented fundraiser, proud champion of the Blue Hen spirit and devoted friend of the arts."

After his retirement from UD in 2007, Dr. Roselle was named director of Winterthur Museum, Garden and Library, serving as

its leader for 10 years, the longest term of any Winterthur chief executive.

A 1961 graduate of West Chester University, President Roselle received his Ph.D. in mathematics in 1965 from Duke University. He served on the faculties of the University of Maryland, Louisiana State University and Virginia Polytechnic and State University. He became president of the University of Kentucky in 1987, serving for nearly three years before coming to UD. In 2011, the University of Kentucky Board of Trustees named a residential building on the Lexington campus in his honor.







Clockwise from top: President E.A. Trabant handing the keys to President David Roselle in May 1990.

President Emeritus David Roselle at the Inauguration of UD President Dennis Assanis in 2016.

President David Roselle speaks from the podium at the 2006 Spring Commencement.

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#### ALUMNI

FRANK L. BAYLIS JR., AS54, Feb. 17, 2024

**R. BRUCE PINKERTON, AS62M, 64PHD**, March 6, 2024

BRUCE R. MALCOLMSON, EG65, April 10, 2024

C. WILLIAM SPANGLER JR., EG65, March 21, 2024

**JAMES H. MEACHAM, EG67**, Dec. 19, 2023

**PAUL T. TRUONO, BE67**, April 6, 2024

**JEFFREY M. BROSS, EG69**, Aug. 16, 2023

GAIL D. WOLLERTON, AS71, April 25, 2023

S. GARRY MILLER, ANR70, Feb. 24, 2024

ALAN B. HERRING, BE73, March 3, 2024

MICHAEL J. MATTIE, BE79, Dec. 17, 2022

**AMY E. BRENNAN, AS81**, Jan. 24, 2024

LOUISE N. WHITE, AS85, Jan. 31, 2023

SAMUEL E. AMER, AS15, April 2, 2024

#### FACULTY AND STAFF

**LEE G. ANDERSON**, emeritus professor of marine policy, Nov. 30, 2023

**RANDY K. BEMPONG**, cook and utility worker in Dining Services, April 11, 2024

DANIEL F. CALLAHAN, retired professor of history, Jan. 25, 2024

**S. CRAIG CARY**, professor emeritus of marine biology and biochemistry, Feb. 29, 2024

**HENRY GLYDE**, Unidel Professor Emeritus of Physics and Astronomy and former chair, March 15, 2024

H. DAVID HERMAN, Trustees Distinguished Professor Emeritus of Music and former University organist, April 8, 2024

M. DENNIS JACKSON, retired professor of journalism, May 10, 2024

RONALD LEMONCELLI, AS84PHD,

retired assistant professor in the Georgetown Parallel Program, now the Associates in Arts Program, April 17, 2022 AHMAD ABU OBAID, associate scientist in the Center for Composite Materials, March 21, 2024

EDWARD "ED" OKONOWICZ, AS70, 83M, adjunct English professor, former director of alumni relations, and editor in the Office of Communications and Marketing, March 11, 2024

**DAN PRESSLEY**, retired associate professor of music, Feb. 24, 2024

**ARNOLD RHEINGOLD**, retired professor of chemistry, March 3, 2024

**ROLAND ROTH,** emeritus professor of entomology and wildlife ecology, June 22, 2024

**TERRY WHITTAKER**, former assistant provost, assistant dean and director of the RISE Program in Engineering, Jan. 31, 2024.

> Please share news of a loved one's passing with us at inmemoriam.udel.edu

#### A CONVERSATION with...

**Doreen Bogdan-Martin, AS88,** grew up in a scienceoriented family in Spring Lake, New Jersey. Today, as secretary-general of the U.N.'s International Telecommunication Union (ITU), she works to provide internet access and communications technology to safely connect people across the globe. Here, the first woman elected to this leadership position for the ITU shares her vision for a more equitable digital future.

In layman's terms, what does the ITU do? The ITU has experts who work on radiofrequency signals that span our entire globe. Some allow our planes and ships to navigate safely. Some help your phone access the internet and download video. Some allow satellites to transmit communications signals to Earth for TV and internet service. The radio signals don't belong to any one country, but countries work together, through ITU, to make sure radio traffic can operate without interference.

#### How does a small-town girl from Spring Lake, New Jersey, become one of the world's most influential people in global

**connectivity?** At UD, I participated in two Winter Sessions abroad which sparked my interest in everything international. After graduation, I spent many months teaching English in Spain and backpacking around Europe, where I was constantly reminded how difficult and costly it was to have regular phone conversations with family and friends. When I returned, I decided to continue my studies at the postgraduate level focused on international communications policy.

You've argued that more inclusive internet connectivity can save lives. How so? Access to the internet can help people living in remote areas connect with neighbors, get access to education, healthcare and public services. It truly is a lifeline.

Nearly one-third of the world's population have no internet. What will it take to achieve access? I believe if we pull together as one global family, we can make progress. Our Partner2Connect program is uniting a broad range of stakeholders to reach some of the hardest-to-connect communities in the world. This includes island communities, and countries with limited internet infrastructure. To date, we've received over 900 pledges worth \$50 billion aimed at closing the digital divide.

After two decades spent connecting the world, what's on the highlight reel? Becoming the first woman secretarygeneral of ITU has to be on the top of the list. It only took us 157 years to break that glass ceiling! I am a strong believer in advancing opportunities for women in all fields, but especially in technology. That's why I encouraged my daughters to learn to code. Another highlight would be youth engagement. I launched the Generation Connect initiative to bring young people to the table, ensuring that their voices and needs were heard in our global and regional meetings.

#### ITU has studied how the feminization of digital assistants—like Apple's Siri or Amazon's Alexa—reinforces gender bias. Besides changing their voices, what can the average person do to ensure that gender inequality in the physical world isn't replicated in the digital world?

Consider that there are close to 244 million more men than women using the internet worldwide. Stronger action is urgently needed to close the gender digital divide–particularly

in leadership roles in the tech sector's emerging fields: AI, quantum computing, cybersecurity, the metaverse. The lack of women in these fields can lead to the widespread gender bias we're seeing in machine learning and AI applications, from medical imaging to algorithmic decision-making. Closing the gender digital divide is at the heart of ITU's work to achieve digital inclusion. This is the idea behind our Partner2Connect Digital Coalition, which has already mobilized over \$32 billion worth of gender-focused initiatives. That level of investment can and does create tangible impact on the ground.

#### Social media has been a boon or bane to humanity, depending on your perspective. Where do you

stand? I use social media to help the public understand what the ITU is, and what we are doing to help support universal connectivity, digital equality, and to protect and support everyone's right to communicate safely. As a mother, I am deeply concerned about some of the negative impacts social media has had on youth, and believe we must work together to make our digital world a safe place for young people to confidently learn and grow. To help advance this, ITU has worked with its members and stakeholders to develop child online protection guidelines and trainings in multiple languages. 🦢

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