

ASU

ARIZONA STATE UNIVERSITY
Volume 27 Number 4

Thrive

'Lucy' fossil
50 years
later and its
impact on
science

True to
Tillman:
Carrying on
Pat's legacy



The joy of science

Paradigm-shifting
science curriculum
engages students with
personalized learning

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Connect with ASU

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ASU 

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magazine.asu.edu 

Sun Devil Athletics 

WELCOME

Globally competitive

This summer, Sun Devils competed with the best of our nation on the global stage at the 2024 Paris Summer Olympics. Locally, ASU West Valley campus hosted TSMC interns from universities around the nation, with 20 of the 130 spots filled by ASU engineering students – more than any other university. This is no surprise, as we have a long history of graduating much-needed engineers into the workforce with the Ira A. Fulton Schools of Engineering ranking as the largest pipeline of engineering and tech talent in the nation.

The university also has proven instrumental in helping more Arizonans prosper. In a recent article, Bloomberg pointed out the historical growth the state's economy has achieved.

"As much as Arizona is identified with one of the great natural wonders, the Grand Canyon State most recently is a marvel of human endeavor: Its gross domestic product expanded 32% since 2021, marking the first time that growth has surpassed the rest of the U.S. when measured on an annual basis, according to data compiled by Bloomberg."

Much of it is coming from Arizona's semiconductor industry, where the annual average salary is \$86,904, 3% greater than the national average. TSMC has already hired 1,100 Arizonans, with more to come. Filling those roles as well as other in-demand positions throughout the nation is our priority.

As part of our mission to help shore up our economy and drive research for the public good, we're pioneering a paradigm-shifting way to teach science called NeoBio. The number of American jobs requiring STEM knowledge is set to grow by more than 10 million in the next six years. Building a resilient, future-ready workforce for our nation demands that we attract more kids and students to STEM-related endeavors by igniting a passion for learning and understanding science. Read more about the program's unprecedented outcomes in this issue and how it is transforming education for all, both online and in person.

Michael M. Crow

President, Arizona State University

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The career columnist for The Seattle Times, her work also has appeared in The Washington Post and The New York Times.

Bret Hovell

An Emmy Award-winning journalist who covered the White House, the Capitol and national politics for CBS News and ABC News, he has spent the last decade working in higher education.

Carolyn Said

A reporter for the San Francisco Chronicle, she covers how society, business, culture, education and other institutions are changing.

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Pat's Run
turns 20.



Request your Teacher Pack

Kick off the new school year in style with a Teacher Pack, courtesy of the ASU Alumni Association. Each pack is filled with swag so you can share your ASU pride in your classroom.

Request your Teacher Pack by Sept. 15 alumni.asu.edu/sundevilterteacherpack

Free

Explore Latin American cultures

Join ASU Art Museum for an Independence Day Celebration honoring the art and culture of Latin American countries. Learn about each nation's cultural traditions throughout Hispanic Heritage Month.

Sunday, Sept. 15, 1-4 p.m., ASU Art Museum

asuartmuseum.org

Free Family



The vision behind the verse

Hear Joni Wallace, author of "Landscape with Missing River," and Mark Wunderlich, director of the Bennington Writing Seminars, present "Why I write poetry: Poets on craft and vision."

Tuesday, Sept. 17, 7 p.m., Changing Hands Bookstore, 300 W. Camelback Road, Phoenix

piper.asu.edu

Free Family

Visit asuevents.asu.edu for events.
Visit sundevils.com for athletics.



Lunch with a view

Enjoy waterfront views while dining alfresco at the First Thursday Food Truck. Diners are encouraged to bring silverware and reusables to keep this event sustainable.

Thursdays, beginning Oct. 3, 11 a.m.-2 p.m., Rob and Melani Walton Center for Planetary Health Atrium, 777 E. University Drive, Tempe

asuevents.asu.edu

Family Ticketed

Star-studded evening

Bring your friends and family to the "Earth and Space Exploration Open House" for an evening of stargazing with telescopes, planetarium shows, interactive science exhibits for all ages and space-themed lectures.

Friday, Oct. 4, 6-9 p.m., School of Earth and Space Exploration, 781 E. Terrace Mall, Tempe

sese.asu.edu

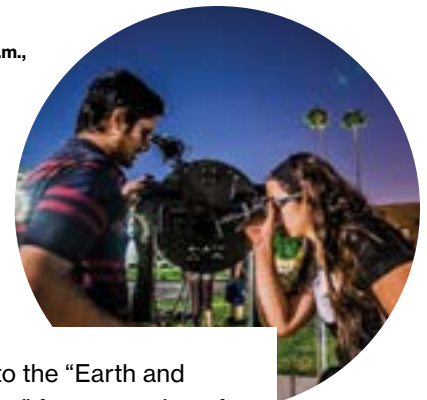
Free Family

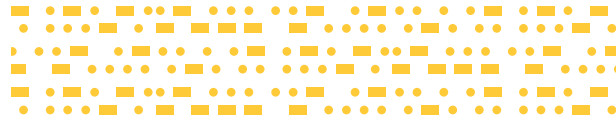
A dazzling rise to stardom

Everyone told Brice she would never be a star. But then something funny happened. This indomitable girl from the Lower East Side became one of the most beloved performers in history. "Funny Girl" is a sensational Broadway revival that tells the story of Brice's luminous career.

Tuesday, Oct. 15-Sunday, Oct. 20, ASU Gammage asugammage.com

Family Ticketed





Events



You're invited to a Pow Wow

This year's annual Native American Heritage Festival will feature the 24th Annual Veterans Day Weekend Traditional Pow Wow. Celebrate with dancers, drum groups, authentic Indigenous food and vendors.

Saturday, Nov. 9, 11 a.m.–10 p.m., West Valley campus, Fletcher Lawn
asu.edu/westvalley

Free Family

Shape the future of media

Whether you're a seasoned technologist or a curious beginner, unleash your creative potential using immersive media and extended reality arts. "Worlds for Change: Remix the Future XRts Hackathon" is a multiday media create-a-thon featuring industry leaders, workshops, demos and more.

Thursday, Nov. 14–Sunday, Nov. 17, ASU MIX Center, Mesa
xrts.asu.edu

Ticketed Networking

Engrave it, save it

Master the basics of design software and laser cutting. Bring your phone and a digital photo and ASU's Osher Lifelong Learning Institute instructors will guide you through the steps to engrave a desktop keepsake.

Thursday, Nov. 7,
10 a.m.–noon, Chandler Innovation Center

lifelonglearning.asu.edu

Free Family Learning through life



Innovation on display

Discover how ASU engineering students are teaming up with industry leaders to create transformative solutions for global challenges at the Innovation Showcase. This dynamic expo unveils students' impact in aviation, information technology, manufacturing engineering, mechanical engineering systems and software engineering.



Friday, Dec. 6, 3–5 p.m., Sun Devil Fitness Complex, Polytechnic campus

poly.engineering.asu.edu/innovation-showcase

Free Family



Check in to events to earn Pitchforks and rewards!

Sign in to the Sun Devil Rewards app for ASU event listings, news, games and more. Earn and be rewarded!

sundeilrewards.asu.edu

GAME DAY



Get ready for Game Day

Sun Devil Football, led by Head Coach Kenny Dillingham, is ready to take on the Big 12 Conference for the 2024 football season. Join in by attending a game or tailgate in person. Every home game will feature exciting activities and themes including Wear Gold, Family Weekend, Blackout Game, Salute to Service and Homecoming. Forks up!

Home games are played at Mountain America Stadium in Tempe
sundevis.com/sports/mens/football

Family **Ticketed**

Sparky's Touchdown Tailgates

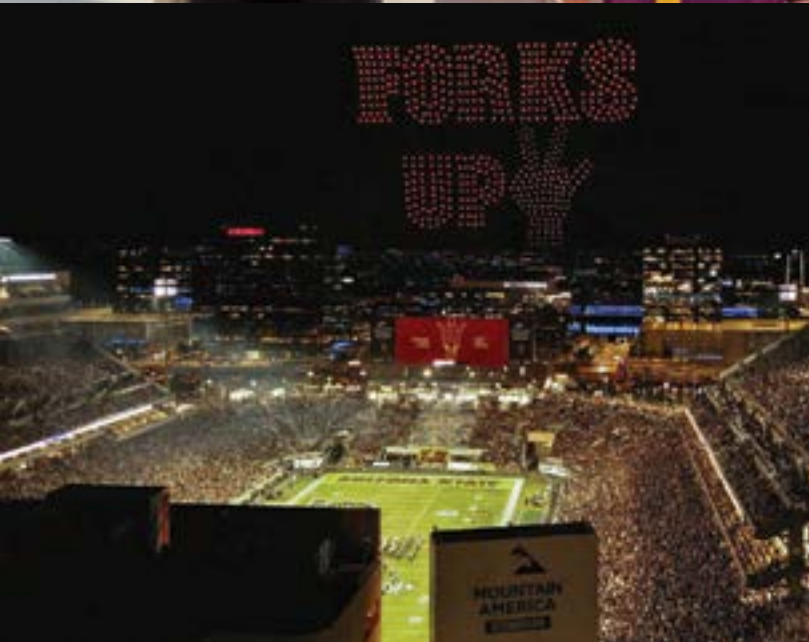
Celebrate ASU's grand entrance into the Big 12 Conference at Sparky's Touchdown Tailgate. Join pregame activities before every home game with live entertainment, food and drinks, special guest appearances and big screens streaming college football games. And don't forget: You can earn Sun Devil Rewards Pitchforks by

checking in to tailgates and football games on the app at sundevisrewards.asu.edu. Come to Sparky's Touchdown Tailgate to find an exclusive secret word.

Tailgates start two and a half hours prior to each home game kickoff at College Avenue and 7th Street

alumni.asu.edu/gameday

Free **Family**



2024 Football Schedule

The Sun Devils' first year in the Big 12 will be a new chapter for athletes and fans. Join the team for an elevated home game experience.

Home game

August



31 vs. Wyoming

September



7 vs. Mississippi State



12 at Texas State



21 at Texas Tech Big 12

October



5 vs. Kansas Big 12



11 vs. Utah Big 12



19 at Cincinnati Big 12

November



2 at Oklahoma State Big 12



9 vs. UCF Big 12



16 at Kansas State Big 12



23 vs. BYU Big 12



30 at Arizona Big 12

See all details of games and ticket options at sundevelops.com.

Texas Takeover

Attention Texas Sun Devils! The ASU Alumni Association is going on tour for nine spirited days across Texas. Our journey begins at Texas State and ends with an official tailgate celebration at Texas Tech. From relaxing on an alumni Brunch Cruise in Austin to attending social mixers in San Antonio, Houston and Dallas/Fort Worth, you won't want to miss this lively experience!



alumni.asu.edu/gameday

Free **Family**

Big 12 Family Weekend

Celebrate ASU spirit, pride and tradition with your Sun Devil and your entire family at Big 12 Family Weekend. Support the Sun Devils as they take on the Kansas Jayhawks for the first Big 12 home game on Saturday, Oct. 5, at Mountain America Stadium. Before kickoff, enjoy the Dos Equis Pitchfork Pregame, a free public tailgate on the north side of Desert Financial Arena.

Friday, Oct. 4–Sunday, Oct. 6,
all ASU campuses

familyweekend.asu.edu

Family **Ticketed**

GAME DAY



ASU Alumni Homecoming week: Nov. 17–23

Lantern Walk

The Lantern Walk was first celebrated in 1917 to pass the torch of spirit, pride and tradition from the senior class to incoming students. On the eve of the Homecoming football game, students, alumni, faculty, staff and friends climb to the top of “A” Mountain carrying lanterns to light up Tempe and follow in the footsteps of generations of Sun Devils.

Friday, Nov. 22, meet at the base of “A” Mountain with a DJ at 6 p.m., climb starts at 6:30 p.m.

alumni.asu.edu/homecoming

Free **Family**

Alumni Homecoming parade and block party

Student organization floats, the ASU Marching Band, colleges, departments, community organizations, local celebrities and Sparky parade down University Avenue. After the parade, join the block party for food, fun, entertainment and tents hosted by ASU units.

Saturday, Nov. 23, before the football game

alumni.asu.edu/homecoming

Free **Family**

Alumni Homecoming game: ASU vs. BYU

ASU Homecoming brings together students, parents and alumni to celebrate their Sun Devil spirit. Cheer on your favorite team as they take on BYU. The concession for this game will be chicken shawarma waffle cones. Wear gold.

Saturday, Nov. 23, Mountain America Stadium, vs. BYU

sundevels.com

Ticketed **Family**

Sparky’s Challenge Run/Walk

Begin Homecoming festivities on the right foot with the annual Sparky 5K, 10K and 1-mile run/walk for individuals of all ages and ability levels. Stay afterward for Sparky’s Carnival. Registration is required.

Sunday, Nov. 17, West Valley campus, Sun Devil Fitness Complex; free for ASU faculty staff and students; \$15 for ASU alumni, affiliates and community members

asuevents.asu.edu

Ticketed **Family**

Legends Luncheon: Hometown Heroes

Join us at the 2024 Legends Luncheon as we celebrate our Hometown Heroes, featuring Sun Devil Football players who got their start playing high school football in Arizona. This event honors the players and coaches who built the Sun Devil Football program over a century of competition.

Friday, Nov. 22, 11 a.m., Omni Tempe Hotel at ASU, 7 E. University Drive, Tempe

alumni.asu.edu/legends-luncheon

Ticketed **Family**



News

“Our staff and researchers aggressively take on the challenges of the world around us and have gained an international reputation for **changing the pace and impact of scientific research.”**

— JOSH LABAER, EXECUTIVE DIRECTOR, BIODESIGN INSTITUTE

HELPING COMMUNITIES

20 years of discovery at Biodesign Institute

From pioneering cancer-fighting strategies and sustainable energy solutions to enhancing women's health through novel diagnostic and therapeutic approaches, the institute has earned a reputation for merging nature-inspired research and technological innovation.

Ongoing projects include the development of cancer-fighting viruses, and sustainable solutions for energy production such as biofuel-secreting microbes, renewable bioproduction of fuels, and chemicals and devices that improve the efficiency of chemical reactions.

Learn more at biodesign.asu.edu.



Research fuels law protecting mobile-home dwellers

Mobile-home dwellers in Arizona face different challenges in the hot summer months based on the way the homes are built and insulated. The problem is critical. While mobile homes comprise 5% of the housing in Maricopa County, ASU's Knowledge Exchange for Resilience found that 30%–40% of annual indoor heat deaths are to people who live in mobile homes.

KER's research helped result in a new Arizona law that prevents landlords from denying tenants the right to install air conditioners or other cooling equipment.

Learn more at resilience.asu.edu.



First comprehensive public-school cybersecurity curriculum

As a school superintendent based in Pennsylvania, Phil Martell, '24 Master of Arts in global security through ASU Online, is leveraging his degree to integrate cybersecurity education into the K–12 curriculum within his school district. It's the first comprehensive cybersecurity curriculum in a public school in the U.S.

This innovative curriculum, aligned with industry standards and frameworks, offers students a pathway to explore cybersecurity careers starting as early as sixth grade to help fill the shortage of professionals in a critical industry that protects our data.

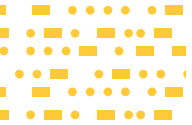
Martell's dedication to advancing cybersecurity education and workforce development has made him a pioneer in the

“We can better prepare our [K–12] students for the demands of the cybersecurity workforce and safeguard our nation’s digital infrastructure.”

— PHIL MARTELL, WHOSE PIONEERING CYBERSECURITY EDUCATION HAS BEEN RECOGNIZED BY THE WHITE HOUSE FOR IMPACT

field and has garnered national recognition, including invitations to the White House and his school district receiving the National School Superintendents Association Lighthouse School District designation award.

Learn more at asuonline.asu.edu.



Professor Visar Berisha, OriginStory CEO Daniel Jones and Professor Julie Liss.

National prize-winning microphone combats ‘deepfakes’ with patented technology

Deepfakes – digital imitations of audio or video created through artificial intelligence – blur the line between fantasy and reality, making it nearly impossible to determine, for example, whether a phone call that sounds like your relative needing help is a scam.

ASU’s OriginStory project designed a microphone to verify that a human is producing recorded speech, then watermarks the speech as authentic. The device won the Federal Trade Commission’s Voice Cloning Challenge competition. The development team includes several ASU faculty members led by Visar Berisha, professor of electrical engineering in the Ira A. Fulton Schools of Engineering and ASU’s College of Health Solutions.

Unlike AI audio, biological human speech includes biosignals – vocal cord vibrations, articulator movements of lips, tongue and nasal cavity – that can be detected by OriginStory.

Next, the team members, who are already leaning on the expertise of Skysong Innovations, ASU’s intellectual property management company, will work with Drena Kusari, vice president of product at Microsoft, leveraging her expertise in bringing tech products to market.

Learn more at engineering.asu.edu.



Cronkite professor wins Pulitzer

Angela Hill received the profession’s top honor: a 2024 Pulitzer Prize in investigative journalism. Hill was part of a Washington Post team reporting on the AR-15 rifle and its involvement in mass shootings. Hill, the Ida B. Wells Professor in the Walter Cronkite School of Journalism and Mass Communication, has collected numerous accolades for her work, including multiple Emmy and Peabody awards, the George Polk and Edward R. Murrow awards, and the Robert F. Kennedy Grand Prize in Journalism.

Learn more at cronkite.asu.edu.

Keep up with the headlines at ASU by subscribing to the ASU News e-newsletter at news.asu.edu/subscribe.

Students tackle hotel food waste

Students from the School of Sustainability conducted a comprehensive analysis of food service operations at the Fairmont Scottsdale Princess Hotel, proposed a solution and then tested it.

92 billion pounds of food are wasted in the U.S. each year

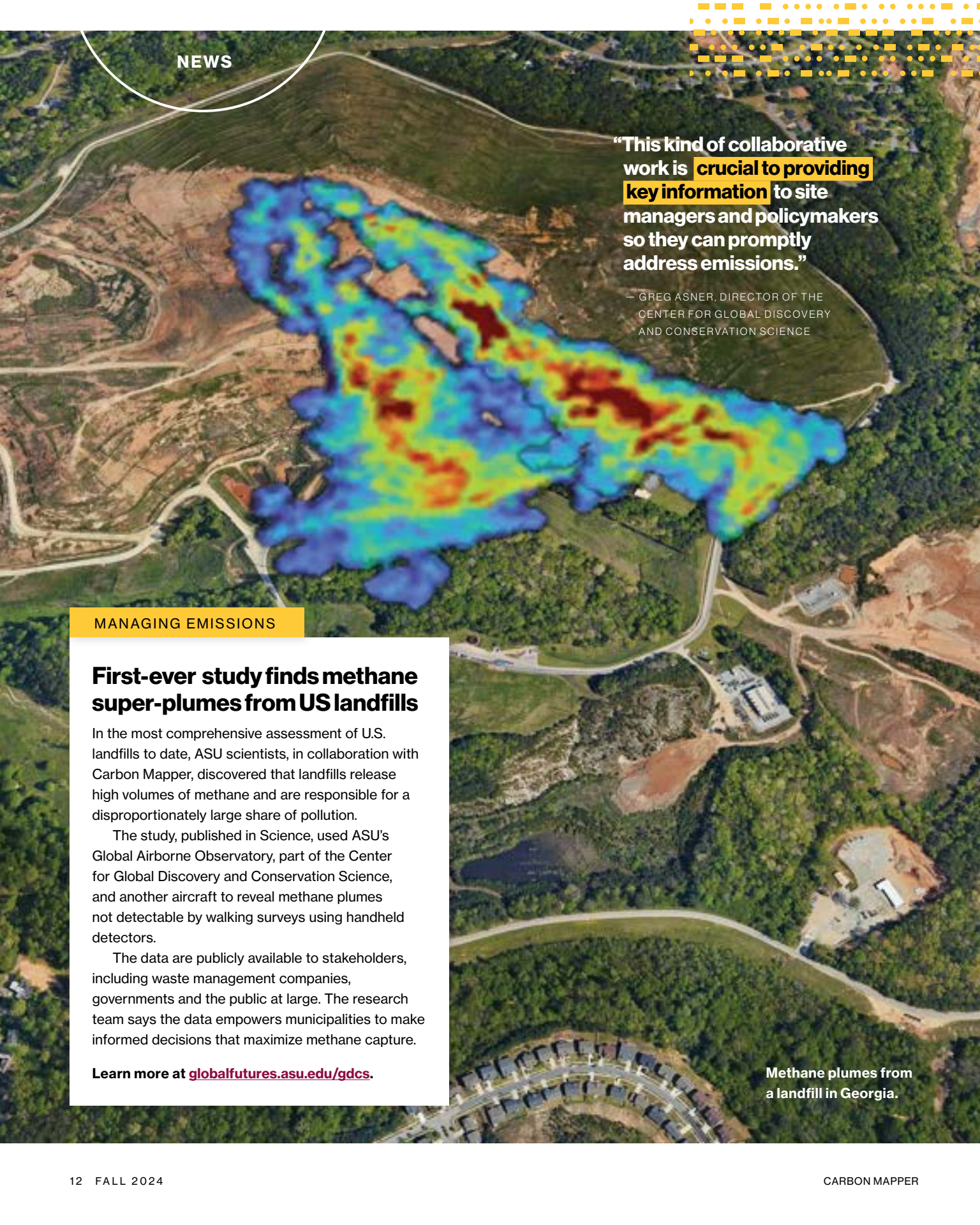
It’s one specific example of helping reduce food waste, which in the U.S., amounts to an estimated 92 billion pounds of food annually.

The solution highlighted opportunities in inventory management, portion control and composting initiatives that could enhance the Fairmont Hotel’s return on investment while contributing to sustainability objectives. The multifaceted food waste reduction program included staff training, guest awareness campaigns and partnerships with local food recovery organizations.

Michael Ortiz, '09 BA in sustainability, BA in business management, the hotel’s process improvement and sustainability manager, served as the interface between the students and the hotel. He says that even early in the program, there has been a noticeable reduction in food waste and other positive benefits.

Learn more at schoolofsustainability.asu.edu.





“This kind of collaborative work is crucial to providing key information to site managers and policymakers so they can promptly address emissions.”

— GREG ASNER, DIRECTOR OF THE CENTER FOR GLOBAL DISCOVERY AND CONSERVATION SCIENCE

MANAGING EMISSIONS

First-ever study finds methane super-plumes from US landfills

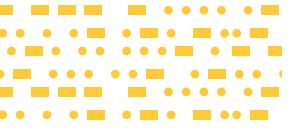
In the most comprehensive assessment of U.S. landfills to date, ASU scientists, in collaboration with Carbon Mapper, discovered that landfills release high volumes of methane and are responsible for a disproportionately large share of pollution.

The study, published in *Science*, used ASU's Global Airborne Observatory, part of the Center for Global Discovery and Conservation Science, and another aircraft to reveal methane plumes not detectable by walking surveys using handheld detectors.

The data are publicly available to stakeholders, including waste management companies, governments and the public at large. The research team says the data empowers municipalities to make informed decisions that maximize methane capture.

Learn more at globalfutures.asu.edu/gdcs.

Methane plumes from a landfill in Georgia.



New research finds link between uterus and brain function

Nearly a quarter of all U.S. women have their uterus removed by the age of 65 in a procedure known as a hysterectomy, according to the Centers for Disease Control and Prevention. But a growing body of research is revealing that the uterus is a powerhouse organ with connections to the immune system and heart. Now, scientists from ASU have added to this evidence finding that the uterus – and its removal – may have a direct and negative impact on brain function.

For those who have already undergone a hysterectomy, this research is still good news: Understanding the effects of the procedure can help inform treatment options post-procedure and improve overall quality of life.

ASU researchers will continue to contribute valuable insights into women's health.

Learn more at asuhealth.asu.edu.



“We cannot study half of the population, leaving out women, and think that we are accomplishing accuracy and excellence in science and medicine.”

— HEATHER BIMONTE NELSON, ASU PROFESSOR



100K ASU Online graduates

Over the summer, ASU Online graduated its 100,000th graduate. ASU first started offering online degrees in 2006, and is now the largest public nonprofit university offering online degree programs.

ASU Online students learn the same content from the same faculty as on-campus students and can earn a degree while working full time and raising a family, serving their country, or dealing with a learning disability.

ASU's online degrees fill a critical need for some of the 40 million people in the U.S. who started college but never graduated.

The economic effect is enormous. In 2023, ASU Online graduates made an estimated \$2.7 billion impact on the Arizona economy and a national economic impact of \$9.2 billion.

Learn more at asuonline.asu.edu.



3D bone atlas to stop elder abuse

Researchers at ASU are tackling the growing problem of elder abuse. One critical challenge when dealing with elder abuse is that it can be difficult for criminologists, pathologists and others to tell the difference between accidental injuries and those resulting from intentional harm or neglect.

Katelyn Bolhofner, an assistant professor of forensic anthropology in the School of Interdisciplinary Forensics, and Kevin Gary, an associate professor of software engineering in the School of Computing and Augmented Intelligence, part of the Ira A. Fulton Schools of Engineering, have combined their expertise to create digital tools to diagnose bone fractures. Their software solution will allow law enforcement to better investigate elder abuse cases and help caregivers and medical responders understand when intervention is needed.

Learn more engineering.asu.edu.

ACTIONABLE RESEARCH

The science behind chronic stress

Stress is an evolutionary response to danger; it's not always negative and can enhance performance or resilience, says ASU Professor Leah Doane. But when prolonged, it can turn into a problem.

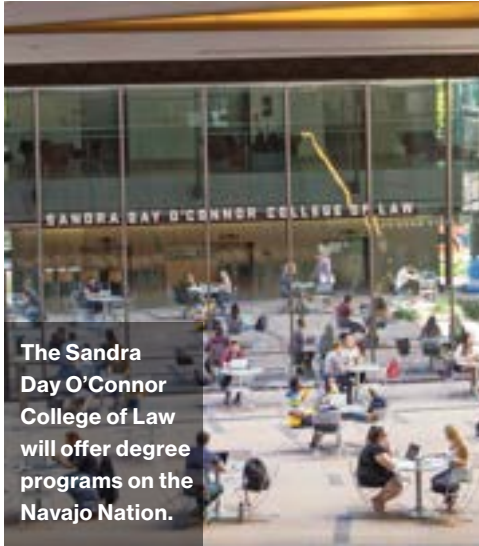
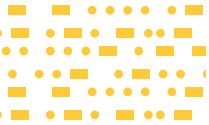
With chronic stress, the body may not return to its normal state, according to stress researcher and ASU Professor Cheryl Conrad. When that happens, stress can harm the structure of neurons in the hippocampus. This can lead to difficulties in learning, memory and emotional regulation. And all of this can weaken the immune system and even cause an imbalance in gray and white matter.

Doane, Conrad and Erin Trujillo, director of ASU Counseling Services, suggest these science-based strategies for reducing chronic stress:

- Humming, singing or activating our vagus nerve, which is a major part of the rest system (parasympathetic nervous system)
- Laughing
- Hugging someone for 20 seconds
- Speaking out loud (even to yourself) about your day
- Feeling gratitude
- Connecting with other humans, animals and nature
- Moving your body

Learn more at psychology.asu.edu.

Moises Mejia participated in the Huts for Vets program of readings, hiking and contemplation on trails outside of Payson on the Mogollon Rim.



The Sandra Day O'Connor College of Law will offer degree programs on the Navajo Nation.

First-ever tribally affiliated legal program

In a historic move in the advancement of legal education, the Sandra Day O'Connor College of Law at ASU announced partnerships with the Navajo Nation and Diné College, which has five campuses around the Navajo Nation.

"This marks a milestone in reimagining legal education," says Stacy Leeds, Willard H. Pedrick Dean and Regents Professor of Law. "A top public law school, working collaboratively with a tribal college and an Indigenous nation, to empower the next generation of advocates, lawyers, leaders and legal scholars, by centering tribal-specific laws and sovereignty."

As part of this initiative, Diné College announced the creation of a Bachelor of Arts in Navajo Law at its campuses.

The Sandra Day O'Connor College of Law simultaneously launched new emphasis areas in Navajo law within two graduate legal programs. In addition, the college and the Navajo Nation have a long-standing partnership to recruit and retain Navajo Nation citizens within ASU's Juris Doctor program, which features an Indian law certificate program.

Learn more at law.asu.edu.



ASU in the top 1% of world universities

ASU ranks in the top 1% of nearly 21,000 universities worldwide for education, employability of graduates, faculty and research, according to the 2024 edition of the Global 2000 list published in May by the Center for World University Rankings.

ASU ranks 67th in the U.S., higher than Georgetown University, University of Illinois–Chicago and Florida State University.

For employability, ASU ranks in the top 5%, according to the center's survey.

The rankings do not rely on surveys; instead they use objective data points.

ASU was also ranked No. 2 in the U.S. for public universities for the employability of its graduates by the Global Employability University Ranking and Survey.

Learn more at asu.edu/about/rankings.

Democracy is focus of McCain Institute Sedona Forum

Democracy is more than the founding idea of our nation, said U.S. Secretary of the Treasury Janet Yellen at the 10th annual McCain Institute Sedona Forum, held in May. "It's how we define ourselves amidst those who question democratic values."

This year's forum, titled "Securing Our Insecure World," examined the greatest challenges to democracy, human rights and global security. Dasha Navalnaya, daughter of murdered Soviet dissident Alexei Navalny, received the institute's Courage and Leadership Award.

Learn more at mccaininstitute.org/the-sedona-forum.



"The only thing necessary for the triumph of evil is for good people to do nothing. So, please, do not be inactive."

— JANET YELLEN, U.S. SECRETARY OF THE TREASURY, PICTURED WITH PRESIDENT MICHAEL M. CROW



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See what's coming up next at asu365communityunion.com.

ASU 365 Community
Union
Arizona State University



Career

REAL FORENSICS

'My one best career tip'

Lilianna Valdivia, '18 BS in forensic science and '19 MS in forensic psychology, started as a crime technician at the Chandler Police Department before moving up to forensic scientist and criminal investigator for the Glendale PD.

Her tip: Continually seize ways to advance your skills.

"Glendale PD is smaller, so I have the opportunity to learn more aspects of my field here with this move."

Searching for fingerprints using oblique lighting.



Be the boss



no one wants to leave

6 tips for
boosting
employee
loyalty

**“Employees who learn at work
experience **less anxiety and stress.**”**

—HARVARD BUSINESS REVIEW



BY NOW, WE'VE ALL heard the statistics: Most U.S. workers feel detached from their employers, according to Gallup surveys. Also, an often-cited Harvard Business Review survey found that 58% of workers trust strangers over their boss.

“Leadership is probably one of the top five or six reasons for employee turnover,” says Peter Hom, a professor of management and entrepreneurship at ASU. He

studies employee retention, and turnover.

So, how do you become the manager that workers respect and trust?

Get to know employees

Show direct reports you care by taking an interest in their hobbies and families and learning more about them as individuals outside the office.

People who experience positive

exchanges with their manager tend to feel more engaged and satisfied at work, which makes them want to stick around, Hom says.

Set them up for success


Workers need to know precisely what you're asking them to do, Hom says. Provide an accurate job description and clarify what results you expect.

Don't hover or micromanage. Instead, give your staff the



Michelle Goodman is a career columnist for The Seattle Times.

.....
Peter Hom is a professor of management and entrepreneurship at ASU.



Provide an accurate job description and clarify what results you expect.

necessary information, resources and tools and grant them autonomy.

Make yourself available for any challenges or concerns people have along the way. For example, answer quick questions in your company's chat tool, meet weekly to check in during big projects, and make yourself available for a quick 10-minute phone call or meeting to help them through a roadblock.

Earn their trust

Workers who trust you are more likely to remain loyal to you, says LinkedIn Learning expert Laurie Ruettimann, who leads the online course "Be the Manager People Won't Leave."

Credit individuals for their wins and brag about their work with your higher-ups, Ruettimann says.

Support your team members during difficult interactions with customers, co-workers or other divisions of your company, whether by stepping in as a buffer or offering advice.

Let direct reports know they can come to you with any mistakes they've made on a project. Then, handle these conversations with patience and respect.

Champion their career development

In her LinkedIn course, Ruettimann suggests encouraging staff to spend 10 minutes a day learning something new through an online course, article or conversation with a colleague on another team.


Besides broadening their professional horizons, Ruettimann says, "Employees who learn at work experience less anxiety and stress," citing Harvard Business Review research.

In addition, listen to your direct reports' career aspirations and help craft a path of advancement for them within your organization, Hom says.

Empower reports to weigh in

Open communication with your team shouldn't stop at project specs and deadlines. Workers want to know that leadership hears their feedback on daily business operations.

Unfortunately, two of three employees feel that they don't have a voice with their boss or employer, according to a report by UKG, a provider of HR, payroll and workforce management



Make yourself available for any challenges or concerns people have along the way.

solutions. The report also found that a third of employees would rather resign or transfer teams than air grievances with higher-ups.

Hom recommends not waiting for exit interviews to hear what workers think. Instead, he suggests conducting "stay interviews" that allow people to share what's going well in their role, what isn't and what changes they'd like to see in their work or the company. You also can solicit feedback anonymously using an online survey tool.

Advocate for change

Show your team they can count on you to prioritize their interests. Consider your team's feedback when working with adjacent teams and leadership to improve processes and overcome challenges.

Report back to your team on the results, even if the only news you have to share is that leadership still needs to implement changes. Employees place a high premium on manager transparency and integrity. Showing them yours is one more way to let them know you care.

Put it into practice

Whether you realize it or not, your employees value the quality of their relationship with you. Being an empathetic, supportive boss that your people know they can trust will go a long way toward keeping your team happy and intact. ■

Learn more

Watch videos with leadership tips at career.eoss.asu.edu. Learn how to be a better manager at careercatalyst.asu.edu.

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Hey. How did we wind up like this?

— Earth

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ASU

**Julie Ann Wrigley
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University**

**Reshaping our
relationship
with our world**

MODERN MESSAGING

Storytelling in the digital age

A group of students spent a week at ASU learning how to use the latest extended-reality technology to tell their own stories.

The Immersive Storytelling Project was held at the ASU Media and Immersive eXperience Center in Mesa and hosted by The Sidney Poitier New American Film School with participation from Apple.

The event included 23 students – 10 from ASU and 13 from Morehouse College, Spelman College and Clark Atlanta University, three historically Black schools, plus Drexel University. The group heard from industry experts and got hands-on experience with XR technology available at the MIX Center, including the Planar LED Virtual Production Stage, Dreamscape Learn Lab and the Dolby Atmos audio suites.

Learn more at herbergerinstitute.asu.edu.

ASU alum and astronaut Sian Proctor shares her story at the weeklong Immersive Storytelling Project.

Can AI and ChatGPT reshape academia?

ASU believes so

Story by JEFF FROMM, REPRINTED
FROM FORBES

Photography by KYLE GILBERT

Jeff Fromm has posted at Forbes since 2014. He has spoken and consulted all over the world and has co-authored five books, including “Marketing to Gen Z” (Harper Collins) and “The Purpose Advantage 2.0.”

The winds of change are sweeping through academia, and at the heart of this transformation lies a powerful force: artificial intelligence (AI).

Universities, once equated with long-standing tradition, are increasingly on the forefront of embracing innovative AI technologies to enhance learning, personalize educational experiences, and equip students with the skills they need to thrive in the rapidly evolving job market.



ASU's Lev Gonick and Amber Hedquist, a PhD student in the Writing, Rhetoric and Literacies program, are among dozens of researchers and students working on using AI to improve learning.

In what ways will AI reshape academia to help prepare students to thrive in the technological landscape of the future?

Here are four primary AI impacts for today's Gen Z students:

- AI is poised to radically transform academics and the way universities support student success.
- Ethical considerations like intellectual property protection and data privacy are forefront in today's business conversation.
- Universities play a vital role in preparing students for the AI-driven workforce.
- Continuous learning and adaptability are essential skills in a world where students may have multiple jobs and careers.

To better understand how leading institutions of higher learning are adapting to AI and incorporating it in preparing students for their next opportunity, I connected with two thought leaders, including Lev Gonick, Chief Information Officer at Arizona State University as well as Phoenix-based Applied AI expert, Chris Johnson, CEO at LT.

“While AI is very much a disruptive — and we believe potentially transformational — technology we’re also very much focused on the human in the middle.”

— LEV GONICK,
CIO, ENTERPRISE
TECHNOLOGY

Revolutionizing Gen Z Student Support and University Operations

As we observe AI fundamentally transform the way universities support students, help them succeed, and enhance academic research and business operations, it becomes increasingly apparent why there is such a need for effective technological support.

“For us at ASU, our core business is student success,” said ASU's CIO Gonick. “We certainly think about the work that we’re doing here at ASU as an enterprise-wide venture, beginning with leveraging the use of generative AI — among many other AI technologies — to support student success. That’s the foundation of our commitment.”

Rather than dictate how AI will best be leveraged in the learning and research environment, ASU

has looked to faculty and staff to lead in their respective areas of innovation for greater impact.

To launch the university's recently announced collaboration with OpenAI, ASU has issued an innovation challenge for faculty and staff users to submit proposals for how to best utilize ChatGPT Enterprise for enhancing student success, forging new avenues for research, and streamlining organizational processes to support student outcomes. Gonick notes that over 150 proposals were submitted in the first round, and those under the most prominent consideration include use-cases dealing with using AI for operational efficiency and staff training, enhancing learning design capacities, academic writing assistance, and AI-assisted behavioral health applications.

Gonick noted that human oversight becomes as important as ever, to help ensure AI serves as a tool to amplify human potential, not replace it.

“While AI is very much a disruptive — and we believe potentially transformational — technology we’re also very much focused on the human in the middle,” he said. “Whether that is a faculty scholar, or a professional staff member, we want to remain focused on and attentive to student success.”



Christiane Reves, an assistant teaching professor, helped create a GPT to allow students to participate in conversations in German at their language level.



BY THE NUMBERS

375+ proposals at ASU for AI to improve learning for students, as well as streamline research and work

200 activated so far

Retha Hill, a professor of practice and executive director of the New Media Innovation and Entrepreneurship Lab, which teaches students how to tell stories in virtual, augmented and mixed reality, and Lev Gonick.

Preparing Today's Gen Z Students for Tomorrow's Workforce

It's becoming ever apparent that the realms of AI and higher education are becoming increasingly intertwined – in large part because many jobs in the future will likely be affected by AI to some degree or another.

More important than teaching students specific technologies, it will be even more important to teach them how to learn, using AI as an accelerator.

"A lot of universities are very cautious about their approach to AI partially because they don't have an understanding of it," Chris Johnson added. "But in terms of teaching skills, this is not the time to be cautious. You want to be educating your students so that when they go out in the world, they are best prepared and have the highest ability to compete in the marketplace."

Maximizing Innovation Impact Through Security

Gonick highlighted key concerns around protecting an institution's intellectual property, ensuring data privacy, and implementing robust security measures. He went on to emphasize the importance of collaboration between universities and businesses, citing the collaboration with OpenAI, which ensures ASU's data and intellectual property remain protected.

"What we know is that it's really important, especially

"What we know is that it's really important, especially for a university or any large organization, to understand that its intellectual property is probably one of its key currencies."

— LEV GONICK,
CIO, ENTERPRISE
TECHNOLOGY

for a university or any large organization, to understand that its intellectual property is probably one of its key currencies," Gonick emphasized. "Obviously the privacy of its employees, or in our case employees and students, is paramount, in tandem with making sure security measures are as robust as possible."

ASU's goal with the aforementioned ChatGPT Enterprise innovation challenge is to be able to provide ongoing support for use-cases while leveraging the institution's knowledge core – the faculty, researchers and staff who set ASU apart from other organizations and institutions – to be at the forefront of discovery and implementation. ASU faculty and staff are leading the innovation, with ASU's Enterprise Technology – the university's central IT organization

led by Gonick – supporting the secure environments required to ensure data privacy.

Pursuing Continuous Learning

As AI systems evolve, the need for continuous learning becomes paramount. This includes integrating AI awareness into course syllabi and fostering academic integrity practices that acknowledge the role of AI in research and learning.

"It's great that ASU has access to all these tools, now the professors have to step up and up their game on how to actually use these tools in their domain." Johnson said. "They can't really integrate generative AI into their teaching plans in a way that's going to be useful for students right now if they don't understand very good prompting techniques, ways to avoid bias and, and how to get the most out of the tool."

As the merging between AI and academia continues to evolve, it remains imperative that collaborative engagement, ethical stewardship, and a steadfast commitment to human-centric values remain in focus. In negotiating the balance between technological innovation and ethics, it's critical that universities position themselves to utilize AI for augmenting and transforming human potential. ■

Learn more about AI at ASU at ai.asu.edu.



A new paradigm-shifting science curriculum engages students with personalized learning and travel to virtual worlds

Story by BRET HOVELL

The joy of



Petting fuzzy caterpillars, growing juicy strawberries and studying birds are some ways Sean, '13, and Lourdes Swentek immerse their little girls in nature. The family goes to the tide pools near their home to look at starfish and sea anemones, occasionally stays up late to spot constellations and even works out together.

“Sia’s 6 years old and really likes anything that involves getting her hands interacting with the environment. She’s just super curious and wants to know about everything,” says Sean. “And so for us, it’s fun to give her that education that she models to her little sister, Aria.”

Sean works as vice president of marketing for a sustainability technology startup, and Lourdes is a trauma and critical care surgeon. He studied digital marketing and ethics and marketing at ASU Online.

“Lourdes knew from age 9 that she wanted to be a surgeon. She’s always been in love with the human body, and how it works, and she’s constantly working on medical inventions.”

So, Sean says, the importance of science makes perfect sense to the two of them. “I think a lot of people nowadays are not as in touch with the natural world, with biology, with the basic science

Although Sean graduated from ASU before NeoBio launched, he loves the idea of immersive learning as a way to keep kids engaged.



knowledge that you need to live successfully and healthy as a human.” Which means that fostering the love of nature and curiosity in their children is important, he says.

Encouraging this curiosity is why Sean’s kids are excited about science, which is a good thing, because getting children excited about science is crucial for our economy, for addressing health challenges and for smart decision-making in our everyday lives.

“It is 100% clear to anyone who has studied the current economy, and the projections of the future economy, that we will need more – vastly more – students who are comfortable in an environment that requires scientific thinking and familiarity with scientific tools,” says Ted Mitchell, the president of the American Council on Education, and a former U.S. under secretary of education responsible for federal higher-education policies.

That is a consensus opinion. The number of jobs requiring STEM knowledge is set to grow by more than 10 million in the next six years, according to a report from the National Academies of Sciences, Engineering and Medicine. ASU is committed to helping graduates land great jobs in their career professions, including in-demand STEM jobs. ASU is ranked second for employability out of all public U.S. universities, according to



“Scientific thinking is a set of habits of mind that are about curiosity, understanding, evaluating information and evidence. [It’s] about using those tools to build connections to others.”

— MARGARET HONEY, CHAIR OF A NATIONAL ACADEMIES OF SCIENCES, ENGINEERING AND MEDICINE REPORT ON STEM EDUCATION



the 2024 Global Employability University Ranking & Survey.

But to meet that demand, educators and others need to engage students in a way that makes science accessible and relevant enough that more students – maybe especially students who don’t think of themselves as scientists – want to pursue it.

In that we have work to do, Mitchell says.

“We’re doing a terrible job

teaching science,” he says. “The quality is underwhelming throughout America’s public and private education system.”

Margaret Honey, who chaired the committee that wrote the National Academies report, agrees.

“Scientific thinking is a set of habits of mind that are about curiosity, understanding, evaluating information and evidence,” she says. “[It’s] about using those tools to build connections to others.”

But she says those tools – valuable in any job and any part of life – aren’t taught today. Instead science has been reduced to “a memorization exercise: Read the chapter, answer the questions at the end of the book.”

The current way of teaching science shortchanges students, Honey adds. It makes science inaccessible to those who do not naturally gravitate to it.

Science in everyday life

The current way of teaching science denies access to a framework grounded in science for finding answers to the questions life

asks, Honey says. Understanding science is critical for navigating daily, everyday situations.

It comes in handy in the grocery store when you weigh the nutritional information of what goes into the cart. It proves critical when you’re advocating for a loved one and helping them navigate a medical situation, or, when navigating your own health journey, helping you understand what is happening to your body and your options for improving your health. It’s vital for understanding health information you hear about, and to distinguish the misinformation too.

Mitchell adds another point: When people have the tools to understand science deeply, they not only are better able to solve problems, they gain access to the wonder that can come from scientific understanding – be it the microscopic beauty seen upon observing a cell or the awe experienced when grappling with the enormity of the cosmos.

“Everyone deserves the ability to take a step back and remind themselves of the extraordinary



Namita Shah, a computer science major who took the Dreamscape Learn biology labs, says she sees how important science is in everyday life and is excited ASU has created the NeoBio way of learning biology.

“Nationally, nearly 50% of students who sign up to be in STEM fields drop out and do something else. We had to do something.”

— LISA FLESHER, THE HEAD OF ASU’S EDUCATION THROUGH EXPLORATION INITIATIVES

beauty and majesty of the world that we live in and the world around us,” he says.

NeoBio emerges

ASU has long recognized the need for more and better-educated STEM graduates.

“STEM has typically been taught the same way for all of time,” says Lisa Flesher, the head of ASU’s education through exploration initiatives. “And nationally, nearly 50% of students who sign up to be in STEM fields drop out and do something else. We had to do something.”

Enter NeoBio, ASU’s paradigm-shifting approach to teaching science. Currently, in-person and online students use NeoBio in both of ASU’s intro biology courses.

NeoBio (“neo” is a Greek prefix that means “new”) has two main pillars: adaptive learning, which replaces the conventional, lecture-and-textbook learning of a traditional class – and immersion in a virtual reality lab, which uses powerful technology and narrative-style storytelling. The concept of “Neo” learning applying adaptive learning and immersion will eventually cover all kinds of inquiry,

from biology to chemistry to art history and beyond.

Michael Angilletta, a professor in ASU’s School of Life Sciences and the associate dean for Learning Innovation at EdPlus, and his team have spent years studying what employers want and need. He says that teaching scientific skills better prepares students for the workforce.

“Those skills are transferable,” Angilletta says. “Because the job you have today may not be the one you have 10 years from now. What we’re doing is producing master learners in a way that’s better than what we have been doing,” he says.

So far, it seems to be working. In a controlled study comparing student outcomes, learners randomly assigned to NeoBio biology classes outperformed their peers in traditional biology classes by almost a full letter grade. That improvement held across all demographic and socioeconomic groups and leveled the playing field



Because science is critical in our everyday lives, ASU helps make it accessible to everyone so they can, for instance, understand their metabolism, fitness metrics and more.

between students who had studied biology in the past and those who had not.

John VandenBrooks, professor in the School of Applied Sciences and Arts and associate dean for Immersive Learning for EdPlus at ASU, says the new curriculum is more rigorous and requires more problem-solving than traditional courses.

"With this rigorous curriculum, we never could have imagined such outcomes," VandenBrooks says.

Adaptive learning

Here's how the adaptive learning portion of NeoBio works together in an online course. In a college biology class delivered online, instead of sitting in a lecture hall or reading from a textbook, you learn new concepts by watching short videos and immediately solving problems related to what you just learned.

Suppose you get one of those problems wrong and aren't sure

why. Instead of waiting to ask, the software will identify the concept you didn't understand. And the very next prompt will teach you the information you misunderstood or forgot.

"Then you're automatically given another similar problem," Angilletta says. "So you have to solve it until you get it right."

This happens in real time, and each student gets personalized refreshers.

One such student is Taylor Aschenbrenner, a physical therapist assistant in Kansas who is pursuing a Bachelor of Science in Medical Sciences through ASU Online. She took the adaptive learning modules that are built into ASU's introductory biology course, BIO181, and now is experiencing the modules in BIO182.

"Adaptive learning is extremely helpful. It gives you options to listen to the lecture, then you go ahead and take a quiz. And then if you

didn't quite understand something in the lecture, it goes through it with you. It tells you which questions you didn't quite understand and you practice those," she says.

"I also like that you can pace yourself, so you're not getting thrown all this material at one time," Aschenbrenner says. "I thought it was really well portioned out."

A virtual reality aspect

Brooke Arneson, a student in Barrett, The Honors College, started hearing buzz about NeoBio's virtual reality lab before she walked into the introductory biology classroom as a sophomore.

"So she's like, 'Brooke, it's a virtual reality thing. It's crazy!'" Arneson says, channeling her friend's enthusiasm.

It's called Dreamscape Learn, and it is unique in higher education.

When Arneson, a biomedical engineering major from Sleepy Eye,



Dreamscape Learn allows students to explore and solve novel problems as scientists in a virtual world.

Minnesota, put on the virtual reality headset, she was thrilled when she saw the vibrant, colorful Alien Zoo, an immersive and beautiful setting for NeoBio.

This world is the creation of Dreamscape Learn, which Walter Parkes, the former head of DreamWorks Motion Pictures, leads in collaboration with ASU faculty. The result allows students to travel through the virtual space, to feel like they are flying around this foreign world, exploring its terrain and marveling at its alien beauty. In this imaginative setting, students become scientists to solve novel problems, analyze data and ultimately help the creatures in an intergalactic wildlife sanctuary.

The storytelling is compelling. The technology makes students feel like they are really in an Alien Zoo. And the combination seems to drive students to work harder.

“They care,” VandenBrooks says. “They feel like they’re the ones who have to solve the problems.”

Students taking NeoBio

classes on campus experience Dreamscape in a fully immersive way – sitting in chairs that vibrate as they move through the virtual world and reaching out to touch buttons that appear in the ship they are piloting. ASU Online students get the same storytelling in a two-dimensional environment. And as virtual reality headsets become more affordable and more students have their own, ASU will begin offering the three-dimensional experience to online students as well.

“It’s the compelling storytelling that is key,” says VandenBrooks. “And that is available to our on-campus students and our ASU Online students.”

The future of science education

Flesher says that soon, ASU will have created an entire NeoSTEM ecosystem. Students working on any problem in the sciences or mathematics will be directed to the information they need to succeed. ■

Transforming STEM education

Now that NeoBio is underway and successful, the university is reimagining other courses. Chemistry, astronomy, sustainability and art history are next to get Dreamscape Learn experiences and personalized learning.



A resource used by millions

Have kids or looking to make science more accessible for yourself? Check out the free Ask a Biologist, which features learning materials across numerous topics and formats – including stories, games, activities, videos and more.

Go to askabiologist.asu.edu.

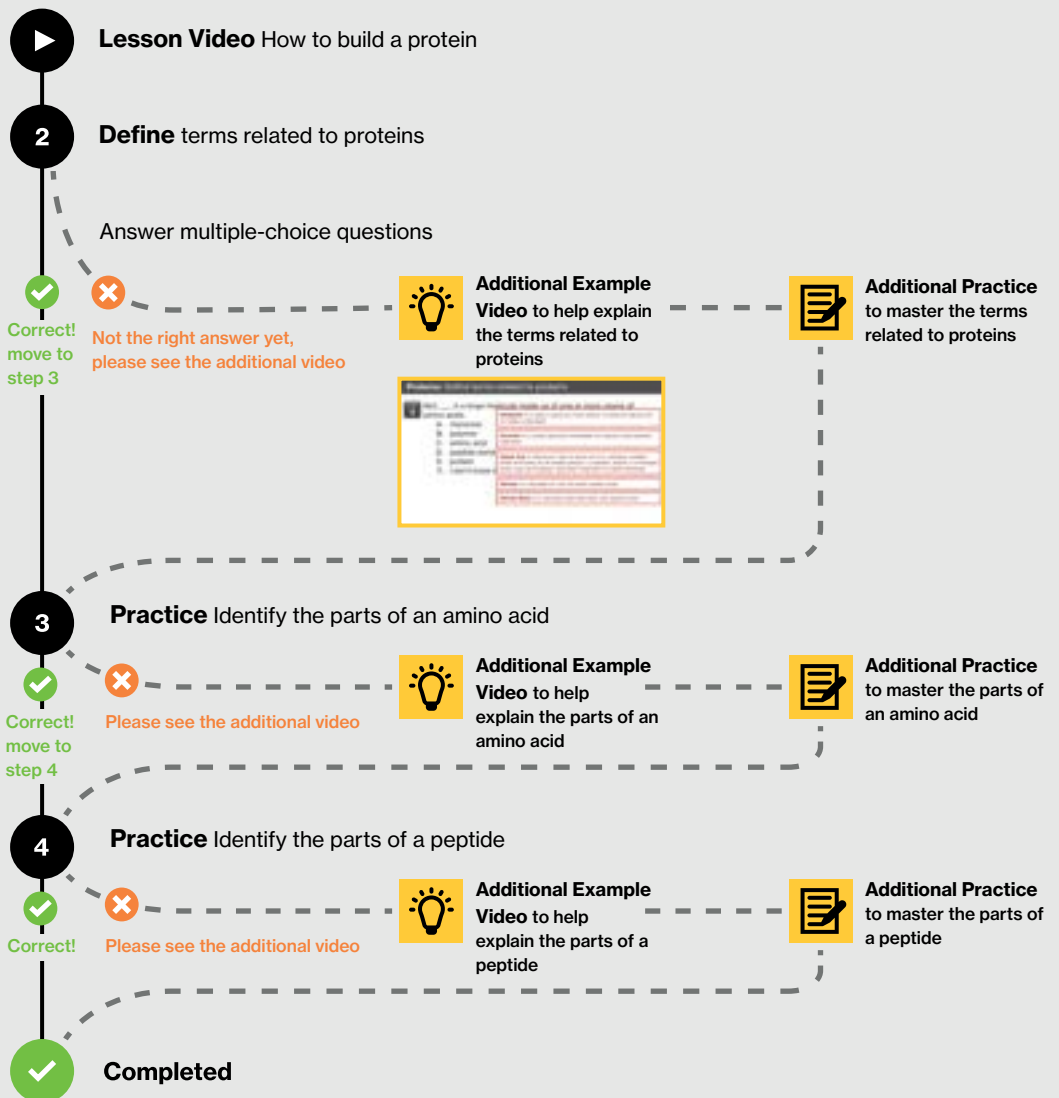


The power of adaptive learning

Tutorials ensure learners master each biological concept

To make biology accessible to everyone, ASU's personalized learning modules break down each concept into short lessons. Watch a video, practice applying what you have learned and move to the next step – or continue learning and practicing until you've mastered the concept. The personalized learning in NeoBio also helps you to review and refresh your understanding of core concepts in biology basics all along the way.

Here's a look at a lesson about how cells build proteins.





‘Lucy’ and the origins of humans

A half-century after the discovery of the fossil, its impact continues

Story by JULIE RUSS, ASSISTANT DIRECTOR,
INSTITUTE OF HUMAN ORIGINS



Donald Johanson putting “Lucy” bones together in the field.

Fifty years ago, only a few years after humans’ first steps on the moon, the fossil of the first human ancestor who walked reliably upright on two feet was discovered by a young paleoanthropologist, Donald Johanson, in the dusty landscape of the Afar Rift Valley of Ethiopia.



After a long, hot morning of mapping and surveying for fossils, Johanson and graduate student Tom Gray headed back to their vehicle taking an alternative route. As he walked, within moments, Johanson spotted a right proximal ulna (forearm bone) and identified it as that of a human ancestor, a hominin.

Then he saw an occipital (skull) bone, then a femur, some ribs, a pelvis and the lower jaw. After many days of excavation, screening and sorting, the team recovered several hundred bone fragments, 47 of which represented 40% of a single hominin skeleton. Hominin refers to the zoological family Hominidae, which uses bipedal locomotion, meaning they walk upright.

The discovery would forever change how we think of human origins.

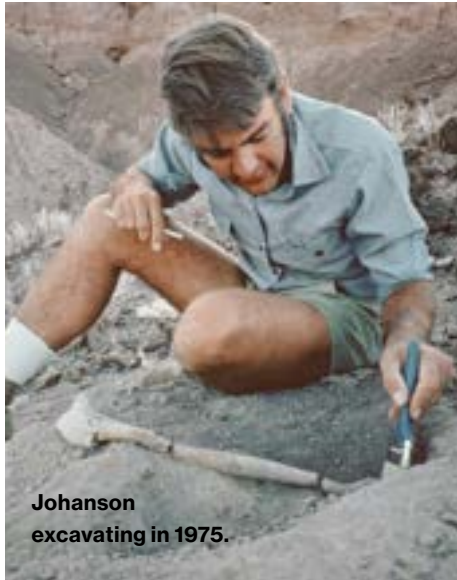
Historical photo of the research team in 1974.



Johanson flagging each piece of fossil found eroding out of the hillside in 1974.



Johanson and geologist Maurice Taieb, Hadar, Ethiopia in 1974.



Johanson excavating in 1975.

The impact on science

Popularly known as “Lucy” because the discovery team listened to The Beatles’ song “Lucy in the Sky with Diamonds,” the 3.2-million-year-old fossilized skeleton remains the most complete representative of human ancestors who were adapting to life on a changing landscape.

News of Lucy’s discovery on Nov. 24, 1974, sparked a worldwide interest in human evolution and created a tremendous controversy in 1978. That’s because Lucy proved the existence of an entirely new species – Australopithecus afarensis. It changed how we

Lucy timeline

1970

1980



Johanson excavating Lucy’s pelvis.

1974 • The 3.2-million-year-old fossil skeleton – “Lucy” was discovered in Hadar, Ethiopia, by Donald Johanson

1975 • “The First Family” discovered at Hadar, Ethiopia, by Donald Johanson – includes the fossil remains of more than 13 individuals of Lucy’s species

1978 • Nobel Symposium, Donald Johanson names a new species – Australopithecus afarensis

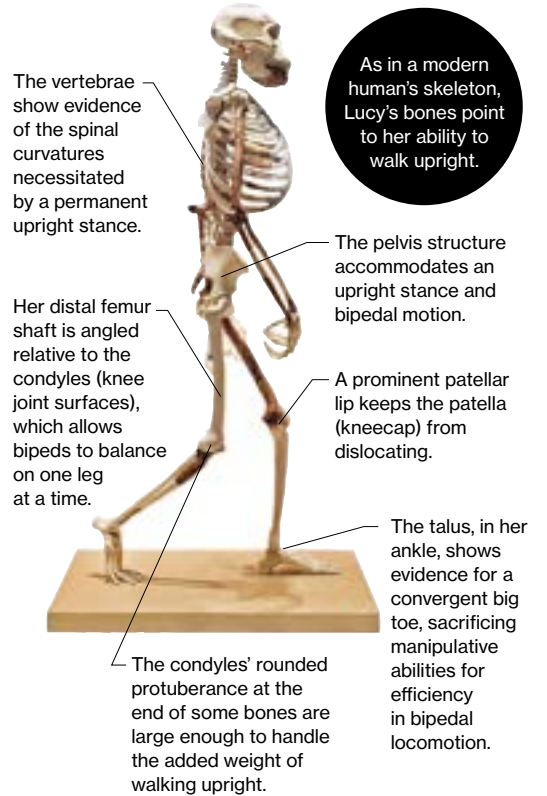
1981 • Institute of Human Origins founded by Johanson in Berkeley, California; Johanson forms the executive board as an advisory and fundraising entity incorporated as a California nonprofit





Johanson shows the Lucy bones in 1978.

How do we know Lucy walked upright?



As in a modern human's skeleton, Lucy's bones point to her ability to walk upright.

think about humans' ancestry and history on the planet.

Since Lucy's discovery, scientists have learned that many variations of bipedal creatures thrived – and then went extinct – before and alongside Lucy and her descendants. And that these extinct ancestors didn't necessarily start in the African savannah, but more likely roamed in grassy woodland with deciduous trees, says Yohannes Haile-Selassie, director of the Institute of Human Origins and Virginia M. Ullman Professor of Natural History and the Environment in the School of Human Evolution and

Social Change.

Lucy's species survived for almost 1 million years before the pressures of environmental changes likely drove her species to adapt and evolve. Those changes paved the way for the origin of our genus Homo, which became better equipped with unique adaptive strategies, including technology.

In an April 2024 cover story in Science magazine, the article points out that "Even as paleoanthropologists debate her place in the human family tree, they agree no known human ancestor has had the impact of Lucy. They still marvel at the

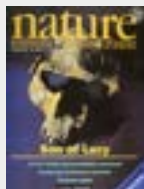
1990



IHO building, Berkeley, California.

1994

Research on the cover of Nature – "Son of Lucy" – the first full skull and other new A. afarensis discoveries



1997

Institute moves to ASU with Johanson, William Kimbel and Kaye Reed as first faculty with the ASU Department of Anthropology



IHO's launch at ASU in summer of 1997.

Learn about Lucy

What is a hominin?

Hominidae encompasses all species originating after the human/African ape ancestral split, leading to and including all species of Australopithecus and Homo. While these species differ in many ways, hominids share a suite of characteristics that define them as a group – primarily that they walk upright.

First ASU Hadar Paleoanthropology field school in 2007. Here Chris Campisano leads a group of undergraduate and graduate students in field geology studies during the 2009 Hadar field season.



detailed view of our past revealed by her skeleton. Forty percent complete, it has served as a template for fitting together the isolated bones of dozens of other members of her species, like pieces in an incomplete puzzle.”

The article continues by noting that today most scientists think that 3 million to 4 million years ago, the human family tree was more like a bush than a bonsai, with multiple stems growing side by side rather than a single trunk.

Haile-Selassie “and others now see Lucy as more of a great-great-great-aunt than a direct human ancestor. But [postdoctoral researcher Zeresenay] Alemseged and others point out that so far, no other fossil is a better candidate for being the mother of us all,” according to the article in Science magazine.

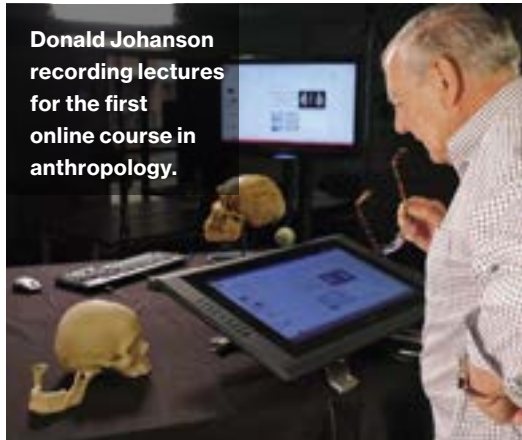
Today, ASU houses a replica skeleton of Lucy, along with a model of what she might have looked like when she roamed Earth.

The lab at the National Museum



“Human Evolution and Why It Matters” – a joint conversation in 2011 at the American Museum of Natural History with Don Johanson and Richard Leakey moderated by Sanjay Gupta.

Donald Johanson recording lectures for the first online course in anthropology.



2000

2010



2005 ASU School of Human Evolution and Social Change founded



2006 Nature cover story – “A Child of her Time” – the Dikika child, a fossil of Lucy’s species, discovered by ASU postdoctoral researcher Zeresenay Alemseged

2013 PNAS cover story – “Early Hominin Diet” – two articles by ASU researchers show that human ancestors expanded their menu 3.5 million years ago, setting the stage for our modern diet

“Even as paleoanthropologists debate her place in the human family tree, they agree

no known human ancestor has had the impact of Lucy.”

— SCIENCE MAGAZINE

of Ethiopia, where the ancient fossil bones of “Dinknesh” – Lucy’s Ethiopian name, meaning “you are wonderful” – houses the Lucy fossil, along with over 500 specimens of Lucy’s species.

Connecting the human past to the global future

In 1997, the Institute of Human Origins, along with Johanson, moved from California to ASU. Today, the institute, part of The College of Liberal Arts and Sciences, is a preeminent research organization devoted to the science of human origins.

The institute’s scientists

are global collaborators at the forefront of paradigm-shifting discoveries. They study how humans adapted to a changeable planet, what DNA research reveals about human origins, the genetic bases for human behavior, and how we have used our innate cumulative curiosity, ingenuity and creativity to ensure our survival and to thrive as a species.

The institute is housed in the Walton Center for Planetary Health on ASU’s Tempe campus. The building, built at an ancient crossroads, takes visitors on a journey from the ancient past to the thriving global future. Starting

with the Ancient Technology Lab on the first floor, the Lucy skeleton replica and the institute on the second floor, scientists across newer disciplines work on climate challenges on upper floors.

“As stewards of Earth, we have an opportunity to actively promote a balance with nature grounded in science with an aim to protect and preserve our species and our planet’s health,” Haile-Selassie says. ■

Get involved

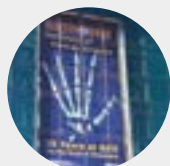
Throughout 2024, the institute is engaging ASU community members and supporters, and national and international academic and K–12 communities, with events, activities and resources.

Learn more at iho.asu.edu/Lucy50.

Read the Science magazine cover story at science.org/content/article/was-lucy-mother-us-all-fifty-years-discovery-famed-skeleton-rivals.

2020

2017
Celebrates 20 years at ASU



Opening day ceremonies



2022
Institute moves into its new home at the Walton Center for Planetary Health

Jane Goodall Institute Gombe Chimpanzee Archive and Database comes to IHO, and ASU forms partnership with Jane Goodall Institute

2024
Science cover – “Lucy at 50” – article by Ann Gibbons about the history of paleoanthropology since Lucy. Johanson and Carl Zimmer will meet onstage at the 92nd Street Y in New York City to talk about the continuing impact of Lucy’s discovery on human origins science





“It is clear that conservation must be prioritized and receive significant additional resources and political support globally.”

– PENNY LANGHAMMER, WHO TEACHES BIOLOGY AT ASU

Protected areas and Indigenous lands were shown to significantly reduce both the deforestation rate and fire density in the Brazilian Amazon. Deforestation was 1.7 to 20 times higher and human-caused fires occurred four to nine times more frequently outside the reserve perimeters compared with inside.



PROTECTING SPECIES

Conservation effective at reversing biodiversity loss

An ASU-led study provides the strongest evidence yet that not only is nature conservation successful, but that scaling up conservation interventions would be transformational for protecting biodiversity.

Published in the April edition of *Science*, the co-authors conducted the first-ever meta-analysis of 186 studies – including 665 trials – to review the impact of conservation interventions globally, and over time. It looked at conservation actions including the establishment and management of protected areas, the eradication and control of invasive species, and the sustainable management of ecosystems, habitat loss reduction and restoration.

Learn more at sustainability-innovation.asu.edu/biodiversityoutcomes.

The chimpanzees of Kibale

ASU primatology, snare removal program supports chimpanzee conservation

Snares are a common tool often used by hunters in Uganda looking to catch small, wild game meat. Unfortunately, the snares are also capable of catching wild chimpanzees, resulting in injured fingers, toes, hands, feet – and sometimes complete amputation.

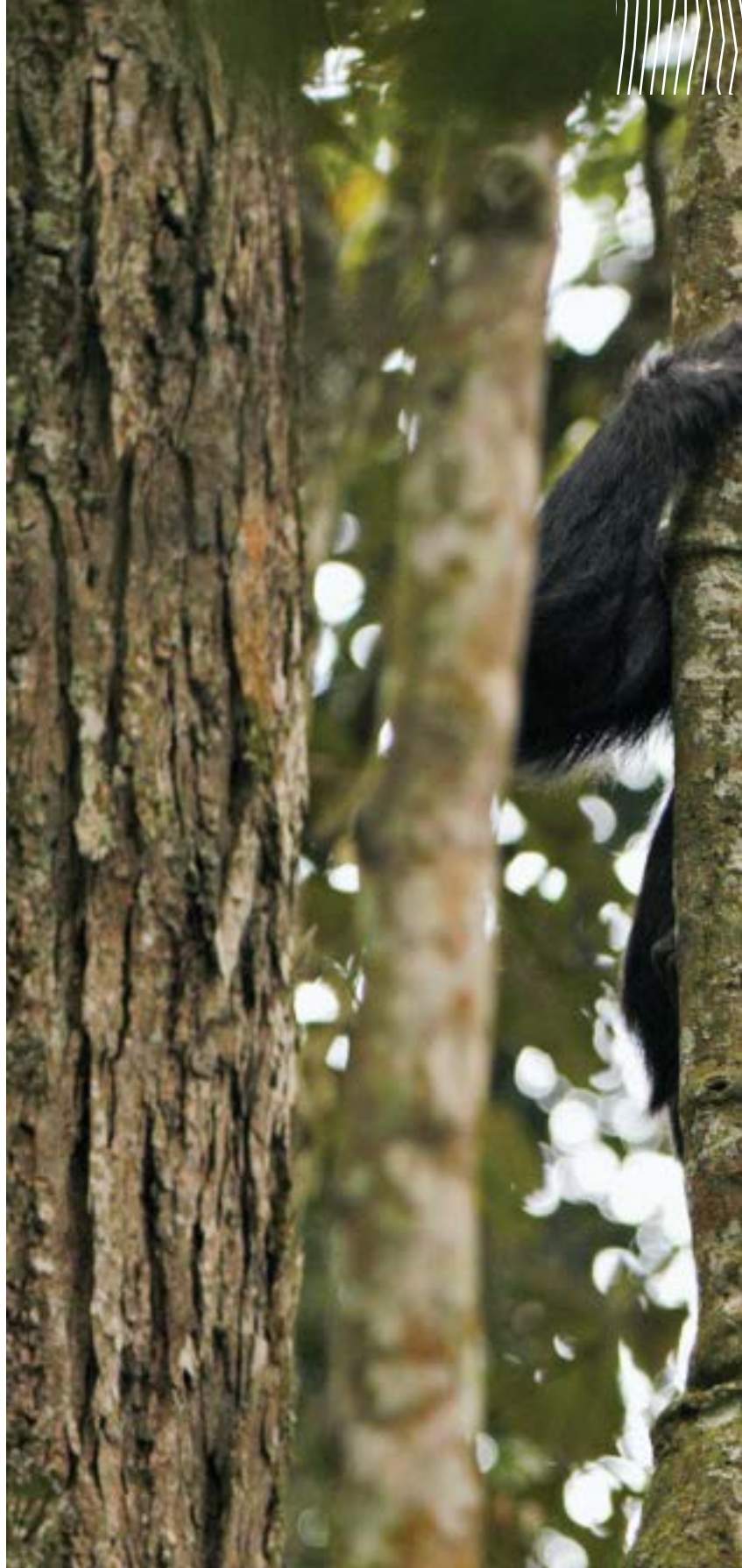
Kevin Langergraber, an associate professor at ASU's School of Human Evolution and Social Change, has been studying the Ngogo community of chimpanzees in Kibale National Park in Uganda for over two decades.

After witnessing and helping chimpanzees who were getting injured in snares, Langergraber and his team decided to implement a snare removal program in 2011. Their report, published in the journal *Primates*, is the first to statistically show how snare removal helps conservation efforts.

— NICOLE POMERANTZ



To learn more about this group of chimpanzees, watch “Chimp Empire” on Netflix.





Chimpanzees caught in snares lose and injure their fingers, toes, hands and feet.
 Lita, an adult female chimpanzee, lost her foot.

“Only one chimpanzee was snared after we began removing snares, compared with 12 individuals caught during the period before.”

— KEVIN LANGERGRABER, A PROFESSOR WHO HAS STUDIED THIS GROUP OF CHIMPANZEES FOR TWO DECADES



Christine, an adult female chimpanzee of the Central Ngogo chimpanzee community.

SOLUTIONS

Helping reduce plastic pollution in Ethiopia

Nine Ira A. Fulton Schools of Engineering students traveled to Ethiopia this summer alongside India Schneider-Crease, an assistant professor in the School of Human Evolution and Social Change, and Tyler Eglen, a project manager at ASU's Circular Living Lab, to help mitigate a plastic problem plaguing Simien Mountains National Park.

The littering of plastic bottles in the park has endangered animals like the rare gelada monkeys and negatively impacted tourism, says Schneider-Crease.

After two years of prototyping machines in the U.S., students used locally sourced materials in Ethiopia to build a machine that shreds the plastic bottles and an injection molder made to take shards of plastic, heat them into liquid and transform the bottles into products that the Ethiopian community can sell.

ASU students partnered with Ethiopia's Addis Ababa Institute of Technology in designing and building the custom machines.

Learn more at zelaki.asu.edu.



Plastic pollution in Ethiopia's Simien Mountains National Park is harming the lives of rare gelada monkeys.



“The littering of plastic bottles in the national park has endangered animals like the rare gelada monkeys and negatively impacted the tourism industry.”

— INDIA SCHNEIDER-CREASE, WHO TOOK ENGINEERING STUDENTS TO ETHIOPIA TO WORK ON THE CHALLENGE



Students from ASU and the Addis Ababa Institute of Technology build a machine to shred waste plastic and another machine to heat the plastic into a moldable liquid to transform the plastic waste into marketable products for tourists.

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ASU BRACELETS



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SUNBURST
BANGLE

ARIZONA STATE
ORGANIC PETITE
NECKLACE

ARIZONA STATE
GARNET BAR

FORGING STRENGTH

Sculpture workshop helps vets heal

After Bruce Ward, '23 BFA in sculpture, left the Marines in 2006, his PTSD from two tours in Iraq resulted in self-destructive behavior.

"I started thinking, 'Maybe I'd better try and become the best version of myself I can be,'" Ward says.

Recently, he helped launch and teach a three-week art-therapy workshop called "Devils in the Metal: Veterans Iron Casting Workshop," introducing veterans to metal-pour foundry techniques while facilitating dialogue about their strength and motivation. With the help of Ward and sculptors John Tuomisto-Bell, '91 BFA, '17 MFA, and Chris Luper, the vets made sculptures and collaborated on a cast-iron mold of the Pat Tillman Honor Shield. The Pat Tillman Foundation and Swire Coca-Cola sponsored the event.

Learn more by visiting veterans.asu.edu.



Visual artist John Tuomisto-Bell demonstrates the art of applying colored patina and heat.

SERVICE



True to

Tillman

Twenty years after his death, the people who loved Pat Tillman work to keep his memory alive — and real

Story by SARA CLEMENCE



The 2017 Sun Devil Football team at the Pat Tillman statue unveiling.

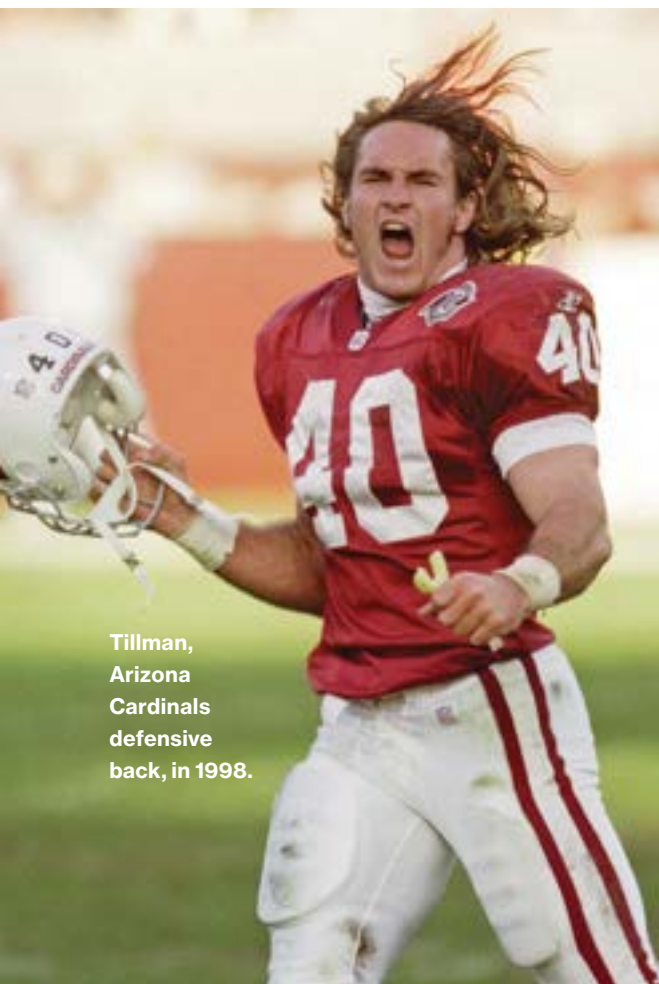


Pat Tillman left the NFL to join the Army.

In the spring of 2002, Alex Garwood went on a run with his brother-in-law and friend, Pat Tillman. The two had trained for marathons together, but on that day, words were far more important than the workout. A week earlier – eight months after Sept. 11 – Tillman had announced that he was going to walk away from a multi-million-dollar NFL contract to join the Army with his brother, Kevin.

“My intent was to talk him out of it on the run,” Garwood recalls.

On the way up an oak-shaded hill in Almaden, the neighborhood in San Jose, California, where their wives’ parents lived, Garwood peppered Tillman with questions. Why join as an enlisted soldier rather than an officer?



Tillman, Arizona Cardinals defensive back, in 1998.



Pat Tillman was inducted into the College Football Hall of Fame in 2010.



Pat and Kevin Tillman after arriving in Afghanistan.



Tillman playing for ASU.

“To his credit, he listened,” Garwood says. “And we got to the top and he looked at me and was like, ‘Is that it?’ Then we turned around and headed back down, and he answered every one of my questions.”

Tillman was a scholar-athlete who led the Sun Devils to the 1997 Rose Bowl, graduated summa cum laude from the W. P. Carey School of Business, then was drafted by the Arizona Cardinals. On the field, he was known for his intensity as a linebacker and safety.

Off it, he relished physical challenges. He was well-read, curious, irreverent and stubborn.

On April 22, 2004, Tillman was killed in Afghanistan. The news shocked his loved ones and the country as a whole and galvanized his friends to create a run that’s growing stronger 20 years later and supports the charitable foundation in his name, the Pat Tillman Foundation.

Celebrating 20 years of Pat’s Run

A few months after Tillman’s funeral, a small group of Tillman’s friends – including Garwood, Perry Edinger, Doug Tammaro, Mark Zimmer and Christina Hundley, ‘98 BA in journalism – gathered to figure out a way to honor Tillman.

“This event would not happen without ASU and the city of Tempe.”

— CHRISTINA HUNDLEY, COLLEGE FRIEND OF PAT TILLMAN

The group set themselves a daunting task: Create an event to honor their boundary-pushing, full-of-life friend who had also become an American hero.

They settled on a run – with some twists.

The length would be 4.2 miles, in tribute to Tillman's ASU jersey number. Their vision? That the run would not finish on a road or in a parking lot, but at the 42-yard line in the stadium on the ASU Tempe campus.

“This event would not happen without ASU and the city of Tempe,” Hundley says. “I mean, a race is a race, right? But the fact that we had that buy-in ... it's on ASU turf, and the locale is part of the fabric of the event.”

Pat's Run launched in 2005 with 5,000 participants. Today, more than 30,000 people across all walks of life participate, in Arizona as well as in Tillman Honor Runs around the world.

Everyone who helped create Pat's Run has a favorite stage of the race.

For Hundley, it's the start, which takes her back to the grief and celebration of the very first run. “I still get goosebumps and tears at the starting line,” she says.

Tammaro, who got to know Tillman as assistant sports information director at ASU, loves seeing runners and walkers of all shapes, sizes and ages at the finish line.



Memorial after Tillman's death (top photo).



Tillman is honored during a 2004 Arizona Cardinals ceremony.



“Pat started it. ... If you’re inspired by him, ... great. But ... I want you to be who you believe you should be.”

— PAT TILLMAN’S FRIEND,
ALEX GARWOOD

“When I see the person run across in 20 minutes and win the race, that’s awesome,” he says. “But when I see somebody cross the finish line after 90 minutes, and maybe they’re not in the best shape, but you can tell this was an event that they were proud to do, I think that would mean as much to Pat as anything else.”

Creating a legacy

On April 23, the day after Tillman died, Garwood says, money started arriving.

“People just started writing checks. ‘Here’s a check for \$5.62,’” he says. “My son broke open his piggy bank and sent you all the money he had.”

It quickly became apparent that there needed to be a structure for managing donations. And it had to be well run, it had to be classy – because, as Garwood says, that was Tillman.

In that first year, the family considered what Pat had been passionate about. Life, they thought – but how do you create a foundation about life? They partnered with ASU to endow a program, Leadership Through Action, that helps students identify and channel their passions.

The foundation’s focus became funding scholarships and leadership development for active service members, veterans and military spouses. In 2009, they launched the national Tillman Military Scholars program, distinct from the original ASU Tillman Scholars and known today as Tillman Scholars.

Over the past two decades, the Pat Tillman Foundation has invested over \$34 million in scholarships and leadership development in support of 850 Tillman Scholars. Each year the foundation receives thousands of applications, narrowing them

The first Pat's Run in 2005.



Start line at the 2024 Pat's Run, the 20th anniversary year.

to 60 individuals. They look for applicants who are academically driven, give back, demonstrate a desire to make an impact and model humble leadership.

Tillman Scholars come from all branches of service, enlisted and officers, and a range of backgrounds, Garwood says. One grew up on a reservation in Arizona, got into trouble in high school, and was given a choice between the Marine Corps or jail. He found his calling, becoming the first member of his family to graduate from college.

"Then there's the Navy SEAL who went to medical school and is now at NASA," he says. "And everyone and everything in between."

Katherine Steele, a 2014 Tillman Scholar, has participated in eight of the last 10 runs – Pat's Run is a substantial source of

funding for the organization – and this year became CEO of the Pat Tillman Foundation. She and the foundation are finalizing the next class of Tillman Scholars.

"My favorite job is being able to read these applications," she says. "It gives you this renewed faith in humanity."

Inspiring others

It can be strange for people who knew and loved Tillman to see the icon he has become. Hundley says that Tillman Scholars fall hushed when they learn she was his friend. They want to hear stories about him. It can be awesome, and it can also feel disconnected from the person she became friends with and used to hang out between classes and practices.

"I swear, I still feel like I'm walking across campus at 22 years old living that life," Hundley says.

When Pat's Run started, many participants knew him. That's not true today; some weren't even born in 2004. But the event is a chance to share his memory and to carry his legacy into the future.

"Pat started it," Garwood says, "just by the way he lived his life. If you're inspired by him because he was a great football player or swore a lot or had long hair or read, great. But I don't want you to be like that other than I want you to be who you believe you should be, to think it through, to act like he did." ■

Get involved

Plan ahead for the 2025 Pat's Run at veterans.asu.edu/patsrun. To learn more about the Pat Tillman Foundation, visit donate.ptf.org.

LIVING LEGACIES

Magic Johnson delivers speech honoring MLK Jr.

In June 1964, Martin Luther King Jr. gave his “Religious Witness for Human Dignity” speech at ASU, in which he called for the U.S. Senate to pass the Civil Rights Act. On the 60th anniversary, NBA legend Earvin “Magic” Johnson spoke on campus to commemorate King.

Johnson recalled numerous stories when he persevered despite facing adversity and credited MLK for inspiring him to work hard and give back.

“The only thing that minorities wanted was an opportunity. King wanted everybody to treat them as individuals and not hate them for their race. And I benefited from that message.”



Martin Luther King Jr. with community leaders and then-ASU President G. Homer Durham, on the right, in 1964.



Earvin “Magic” Johnson provided scholarships to three students. From left, Assistant VP for Cultural Relations Kenja Hassan, business major Tajilynn Karim, Magic Johnson, journalism major Serenity Reynolds and pre-med psychology major Nia Heckler.



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Sports

2024 PARIS OLYMPICS

Marchand's 4 gold medals

ASU Sun Devil-turned-pro Léon Marchand claimed a gold medal in the 400-meter individual medley in the 2024 Paris Olympics, breaking Michael Phelps' record. Next, he won the 200-meter butterfly and the 200-meter breaststroke, becoming the first to win both events in the same Olympics. Then he racked up his fourth gold medal in the 200 IM.

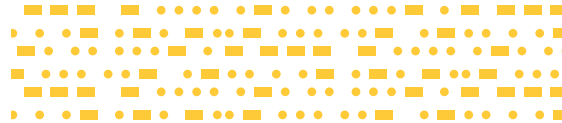
The five-time World Aquatics champion, 10-time NCAA individual champion and 17-time Pac-12 champion helped the Sun Devils win the 2024 NCAA men's swimming and diving championship and set three NCAA records and nine school records.

He joins four other Sun Devils who won multiple gold medals: Justin Huish (two in archery in 1996), Troy Dalbey (two in men's swimming in 1988), Melissa Belote Ripley (three in women's swimming in 1972) and Henry Carr (two in men's track in 1964).

Learn more at sundevels.com.

Olympics stories updated as of Aug. 2.

Léon Marchand won gold medals for his home country of France.



Sun Devils in the 2024 Summer Olympics

Men's swimming

Tiago Behar, ASU senior, Switzerland
 Ilya Kharun, ASU sophomore, Canada
 Léon Marchand, France
 Max McCusker, '24 MSLB, Ireland
 Tolu Young, ASU incoming freshman, Fiji

Women's golf

Carlota Ciganda, Spain
 Alessandra Fanali, '22 BA, Italy
 Alexandra Försterling, '22 BA, Germany
 Linn Grant, Sweden
 Azahara Muñoz, '09 BA, Spain

Men's golf

David Puig, '23 BS, Spain
 Jon Rahm, '16 BA, Spain
 Kevin Yu, '21 BA, Chinese Taipei

Women's soccer

Gabi Rennie, '23 BA, New Zealand

Women's water polo

Blaire McDowell, '22 BSE, Canada
 Bente Rogge, '21 BS, Netherlands
 Lieke Rogge, Netherlands
 Mia Rycraw, '18 BA, France

Women's tennis

Desirae Krawczyk, '16 BS, USA

Men's basketball

Lu Dort, Canada

Women's basketball

Promise Amukamara, '15 BS, Nigeria

Track and field

Jorinde van Klinken, '22 MGM,
 Netherlands
 Beatrice Nedberge Llano, '21 BA,
 '22 MS, Norway
 Dubem Nwachukwu, '23 BS, Nigeria

Women's wrestling

Kennedy Blades, ASU undergraduate, USA



Ilya Kharun won a bronze medal at the 2024 Olympics.

From the high wire to the Olympic podium

Incoming sophomore and Sun Devil and now Olympian Ilya Kharun comes from the famous family of Valeriy and Oksama Kharun, who were longtime acrobats in Cirque du Soleil. His sister, Dasha, performs in Cirque's "Joya" show in Cancun. Now Ilya might become the most famous of them all at the 2024 Summer Olympics.

Kharun, who was born in Montreal and lived there for only a few months before his parents moved to Las Vegas, represented Canada in the 100-meter butterfly and the 200-meter butterfly, an event in which he's ranked sixth in the world.

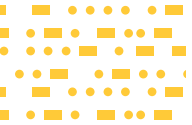
"I definitely plan to podium (win a medal) in the 200 fly," Kharun said ahead of the Games.

True to his word, on July 31, he won the bronze medal in the 200m butterfly behind first-place winner Sun Devil Léon Marchand.

Kharun fell in love with swimming after watching Michael Phelps and Ryan Lochte win multiple gold medals, so when Phelps' coach, Bob Bowman, recruited Kharun to come to ASU, he was sold. And he remained when Herbie Behm became the head coach.

"I wanted to trust Herbie rather than move," Kharun says. "I had made all my friends here, too. This is home."

Learn more at news.asu.edu/sports.



Volleyball team and coach win accolades

Sun Devils Volleyball made history last season by making it to the NCAA Tournament for the first time since 2015. The Sun Devils had a 28-7 record, the best record this century at ASU and the second-highest win total in program history.

In addition, JJ Van Niel's fellow head coaches voted him Sun Devil Coach of the Year, and he won Pac-12 Coach of the Year.

Check out the team as they compete for the first time in the Big 12, with the season's first home game at Desert Financial Arena on Sept. 19.

Learn more at sundevils.com/sports/womens/volleyball.



Sun Devil Mary Shroll, a business major who is on the honor roll, digs the ball.



ASU now in the Big 12

ASU moved to the Big 12 Conference ahead of the 2024 fall sports seasons.

"We are excited for this new chapter, a move that is necessary to remain competitive in top-tier Division 1 athletics," according to ASU President Michael M. Crow.

The University of Arizona, Utah and Colorado also joined. That helps create a strong Arizona-Utah-Texas-Colorado portion of the conference that will extend current rivalries and create new ones.

"Now we're able to grow the ASU brand on a national scale. But we're also going to maintain relevancy in California," says ASU Athletics Director Graham Rossini. "I'm also excited for our fans to experience the spirit, pride and tradition of college athletics in new ways."

Keep up with sports headlines

by subscribing to the e-newsletter at sundevils.com.

"That's one thing I talk about a lot with people who ask me about ASU. I tell them that we were provided every single resource to excel, on the ice, off the ice, in the classroom."

— JOEY DACCORD, '19 BA IN BUSINESS



Hockey alumnus carries Sun Devil spirit to NHL

Former Sun Devil Hockey goaltender Joey Daccord, '20 BA in business, went pro with the Ottawa Senators in 2019, becoming the first-ever Sun Devil to sign an NHL contract. Daccord, who now goaltends for the Seattle Kraken, became a household name during the 2024 Discover NHL Winter Classic after making 35 saves during the game, helping his team defeat the Vegas Golden Knights 3-0.

Even after entering the professional league, Daccord's ASU pride has never wavered. The goalie has an image of Sparky the Sun Devil painted on each of his helmets.

"That's one thing I talk about a lot with people who ask me about ASU. I tell them that we were provided every single resource to excel, on the ice, off the ice, in the classroom," Daccord says.

Daccord is excited about the future of ASU hockey. The Sun Devils 2024-25 hockey season begins on Oct. 5.

Learn more at sundevils.com/sports/mens/ice-hockey.



ASU Gammage circa 1964

60-YEAR ANNIVERSARY

Frank Lloyd Wright of his design for ASU Gammage: 'Welcome to ASU'

During a tour of the campus, Frank Lloyd Wright took a liking to an athletic field and said, "I believe this is the site. The structure should be circular in design and yes, with outstretched arms, saying 'Welcome to ASU!'" Wright worked on the sketches for ASU Gammage during the last two years of his life.

Construction of the \$2.46 million building took 25 months and it opened 60 years ago. ASU Gammage is the only public building in Arizona designed by Wright.

Since 1991, hundreds of well-known celebrities, musicians and performers have come through the theater including Mary J. Blige, Tony Bennett and Melissa Etheridge. Past artists include dance icons Bill T. Jones and the Bolshoi Ballet and pillars of classical music, Philip Glass, Yo-Yo Ma and others.

Learn more at asugammage.com.



ASU Gammage now





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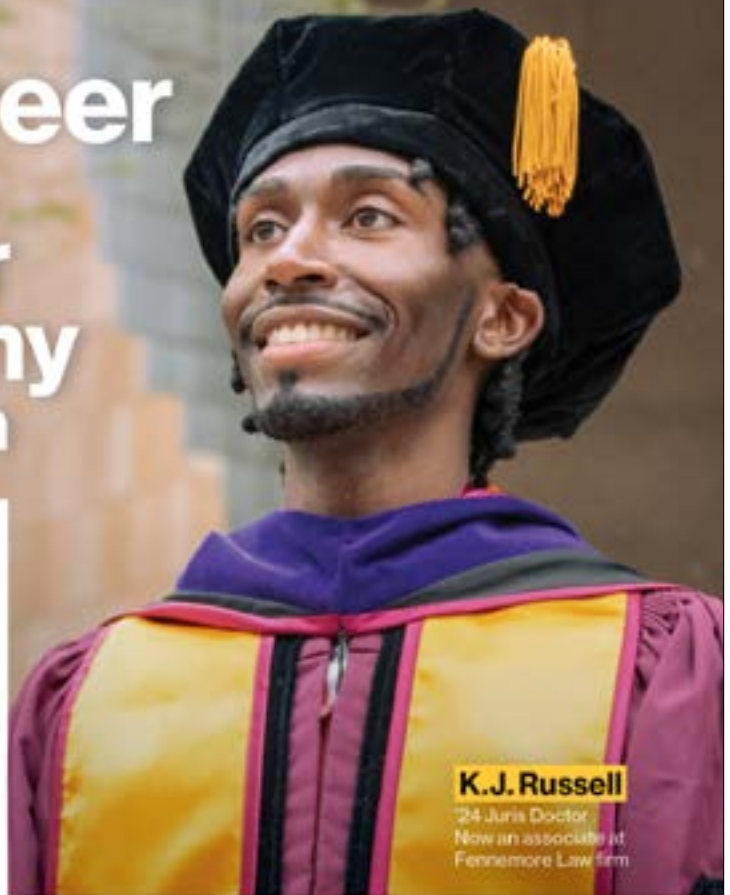
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