ASU Thrive®

ARIZONA STATE UNIVERSITY
Volume 27 Number 1

Year in review 2023

Highlights from another year of breakthroughs

'OUR SECRET WEAPON'
How ASU bolstered Phoenix's rise as a chipmaker

K–12 EDUCATION
What happens when a class has 5 teachers?

Fixing the plastic problem

Researchers tackle plastic pollution with multifaceted action plan

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Regents Professor of management and entrepreneurship and Horace Steele Arizona Heritage Chair at ASU's W. P. Carey School of Business, his work has appeared in the Harvard Business Review.

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Moving Arizona forward — together

Contrary to claims of a growing ideological divide in our state, Arizonans agree more than they disagree about the future they want. Through the Center for the Future of Arizona's Gallup Arizona Project, we now have valuable insight on the shared values and priorities of our citizenry. From this survey, it is clear that Arizonans care deeply about core topics: better jobs, improved health care, high-quality educational opportunities and a more sustainable future, among others. With this knowledge as a guide, and as a public institution, it is up to us to respond and act.

At ASU, we are fostering change by working with partners to forge a strong 21st-century economy that creates new jobs, better technology and heightened national security. We are coordinating with community colleges and companies to connect skilled learners with high-paying careers. We are joining with organizations to support small businesses and startups with advanced training, access to high-tech equipment and vital funding opportunities.

In launching ASU Health, we are building a groundbreaking medical school that integrates clinical medicine, engineering and biomedical science to produce a new kind of technologically empowered physician. In collaboration with health care providers, we will advance new academic and research programs that improve patient treatment, create better health care outcomes and demonstrate our commitment to the well-being of the communities we serve.

And as a university that embraces its physical setting, we are pioneering solutions-based sustainability education, research and operations. Air, land or water, ASU is working diligently to protect Arizona's precious resources, the beauty of our home and the quality of life we enjoy.

As a perpetual optimist, our progress fuels my imagination for what we can achieve together. So rather than give in to divisiveness, let's concentrate on our common goals and marshal our collective strengths to manifest the state we want. ASU is ready.

Michael M. Crow
President, Arizona State University
michaelcrow michaelmcrow
asuprescrow presidentcrow

FIND

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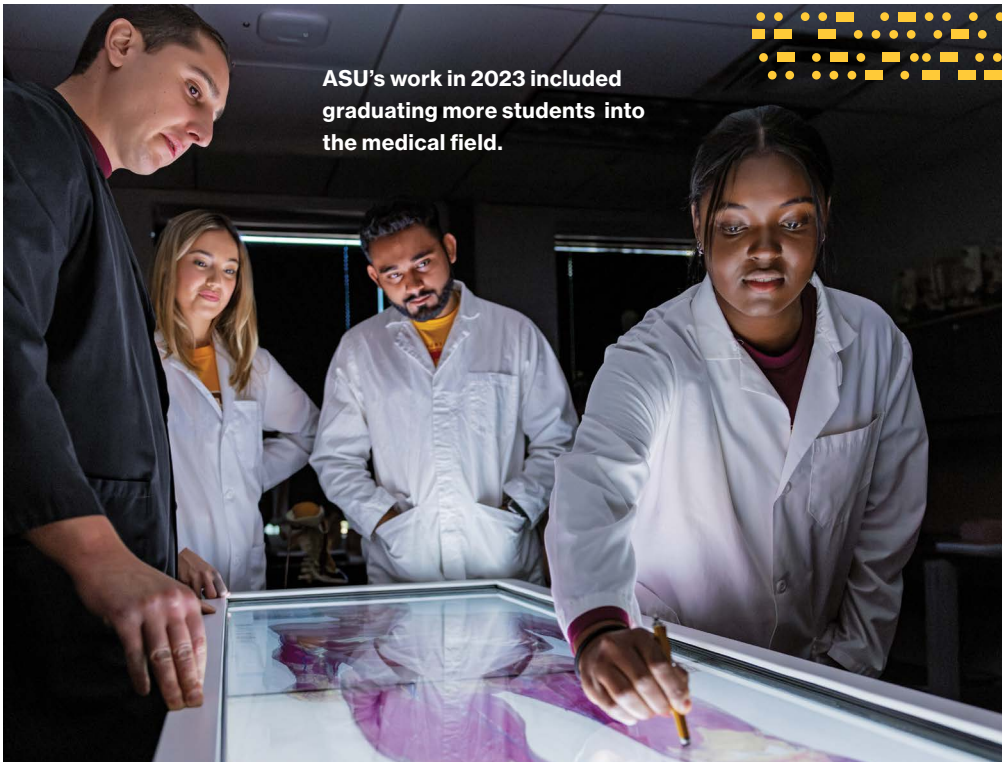

ASU's work in 2023 included graduating more students into the medical field.

The Financial Times sent a reporter to Phoenix to uncover ASU's role in high-tech jobs.

Review

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SAMANTHA CHOW/ASU

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JEFF NEWTON, SABIRA MADADY/ASU

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Jan.

An exhilarating adventure for lifelong learners

Whether you're an adventure seeker, lifelong learner, science guru or art enthusiast, Open Door 2024 has hundreds of interactive, hands-on activities created for adults and children of all ages in the local community. Explore ASU's laboratories, living collections, museums and classrooms on ASU's four campus locations. As a signature event of the Arizona SciTech Festival, ASU invites you and your family to discover all things science, technology, engineering, arts and math:

West Valley campus: Saturday, Jan. 27, 1–5 p.m.
Downtown Phoenix campus: Saturday, Feb. 3, 1–5 p.m.
Polytechnic campus: Saturday, Feb. 17, 1–5 p.m.
Tempe campus: Saturday, Feb. 24, 1–5 p.m.
opendoor.asu.edu

Free Family Lifelong learning

A riveting family memoir

Join the ASU Book Group for a discussion of "Survival Math: Notes on an All-American Family," which takes its name from the calculations Pulitzer Prize-winning author Mitchell Jackson made to survive the Portland, Oregon, of his youth. Jackson is the John O. Whiteman Dean's Distinguished Professor of English at ASU, where he teaches creative writing.

Thursday, Jan. 25, noon–1 p.m., Piper Writers House, 450 E. Tyler Mall, Tempe, in person and online. Register to attend online at asuevents.asu.edu.
piper.asu.edu

Family Ticketed Lifelong learning

You live, you learn, you remember

There are some shows you see. This show you feel. Joy, love, heartache, strength, wisdom, catharsis, life — it's all here in "Jagged Little Pill," the fearless new musical based on Alanis Morissette's megahit musical catalog. Directed by Tony Award winner Diane Paulus with a Tony-winning book by Diablo Cody and a Grammy-winning score, this production "stands alongside the original musicals that have sustained the best hopes of Broadway," according to The New York Times.

Tuesday, Jan. 30–Sunday, Feb. 4, ASU Gammage
asugammage.com

Ticketed

DEANNA DENT/ASU

Sparky's Sprint

Walk and run alongside Sparky through a 1-mile course on the ASU Tempe campus. This family-friendly event includes a race warmup, fun run, official race bib, gear and prizes.

Saturday, Feb. 10, 9–10 a.m., Sun Devil Fitness Complex, Tempe campus
alumni.asu.edu/sundevilgenerations

Family Ticketed

Feb.

Open Door

Mar.

Sun Devil Rewards has an updated look, new games and more rewards!

Found in the ASU Mobile App, play Sun Devil Sudoku, crosswords and other favorites for more of those shiny gold 'Forks.

sundevilrewards.asu.edu

Goat yoga

Goat yoga offers a lighthearted and uplifting way to reconnect with yourself, release stress and cultivate a sense of joy and well-being. Under the guidance of experienced yoga instructors, you'll engage in gentle yoga poses while surrounded by friendly goats.

Friday, March 1, 10 a.m.–noon, West Valley campus

asuevents.asu.edu

Free Family

Mahjong Festival

You've seen the game mahjong featured in "Crazy Rich Asians" and "The Joy Luck Club" — now it's your turn to play the classic game that has entertained players around the world for generations. Enjoy snacks and drinks and learn more about Phoenix's sister city: Taipei, Taiwan.

Saturday, March 16, 2–5 p.m., West Valley campus

asu.edu/west

Free Family

Devils donate

Sun Devil Giving Day is ASU's universitywide day of giving. When you make a tax-deductible donation, you empower students, advance research and improve lives now and for years to come.

Thursday, March 21, 12 a.m.–11:59 p.m.

asufoundation.org

Donation

'Mana Wahine'

"Mana Wahine" bursts upon the stage using imagery and dance in this powerful work from Ōkāreka Dance Company. The work incorporates bold projections, chant, original music, traditional implements and costuming that draws from cultural traditions and history of Māori, the Indigenous people of New Zealand.

Saturday, March 23, 7 p.m., ASU Gammage

asugammage.com

Family Ticketed

Natural treasures

Curated by Ibrahim Said, a native Egyptian and expert in Egyptian ceramics, "Contours: The Essential Form," explores humans' connection to nature for survival and nurturance. The collection is featured in ASU Art Museum's Encounter Series, which invites artists and scholars to recontextualize the museum's collections to address current social and cultural issues.

Wednesday–Sunday, now through March 31, 11 a.m.–5 p.m., ASU Art Museum, 51 E. 10th St., Tempe

asuartmuseum.org

Free Family

Ibrahim Said, Adobe Palms #1 and Adobe Palms #2, 2022

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

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BREAKTHROUGHS

Mayo Clinic, ASU collaborate on medical discoveries

The Mayo Clinic and ASU Alliance for Health Care Seed Grant Program is kicking off 16 new pilot studies — the largest number since the program's inception in 2016. The alliance's grant program empowers investigators from both institutions to kick-start joint research projects and build a foundation to attract additional funding. The program also provides researchers with the unique advantage of finding solutions for complex biomedical problems that might not have been solved otherwise.

Some of the studies will look at endometriosis diagnostics and treatment — a condition that affects up to 10% of women between the ages of 15 and 44 — various methods for earlier tumor detection, using AI for better Type 1 diabetes management and using a specific metabolic alteration on the immune system to speed bone repair. Other studies will investigate blood-based biomarkers for cardiac amyloidosis, a condition where proteins build up in the heart, often leading to organ failure, and a 3D-printed treatment for pelvic organ prolapse, which affects half of all U.S. women in their lifetimes.

These are just a handful of the medical solutions ASU researchers and Mayo Clinic doctors aim to explore through the seed grant program.

Learn more about the alliance at mayoclinicasualliance.org.

Research and news

"When you try to take the most complex problem and solve it, at the same time you end up solving a lot of simpler problems more effectively."

— NEAL WOODBURY, CHIEF SCIENCE AND TECHNOLOGY OFFICER AT ASU KNOWLEDGE ENTERPRISE

Graduate student Chayaank Ravishankar works with his advisor, Xiangfan Chen, assistant professor, ASU School of Manufacturing Systems and Networks; Chen, in collaboration with Jessica Lancaster from Mayo Clinic, is developing a 3D printing-enabled device for pelvic organ prolapse.

ERIKA GRONEK/ASU

Research project uses AI to advance Arctic science

New research by Wenwen Li, a professor in ASU's School of Geographical Sciences and Urban Planning, aims to support the development of an open-access resource that will use satellite data and artificial intelligence to track Arctic permafrost thaw in near real time.

"This is an exciting era of AI and geospatial sciences," Li says. "Leveraging them to understand the ever-changing Earth's environment and its climate — such as Arctic warming, excessive heat waves and increasingly occurring disasters — offers a real chance for society to better combat climate change, mitigate its impacts and plan for a more sustainable and resilient future."

Learn more at sgsup.asu.edu.

Work in the $2.5 million lab includes understanding insecticide resistance and new mosquito research.

Insectary tackles mosquito-borne diseases

Silvie Huijben and Krijn Paaijmans, both assistant professors in the School of Life Sciences, were recently awarded three grants. One will allow them to partner with the Maricopa County Vector Control Division to look at the efficacy of insecticidal fogging for mosquito control in the Valley. The researchers work in a $2.5 million state-of-the-art insectary that allows students and faculty to study viruses and their mosquito vectors to help prevent disease outbreaks.

Take a virtual tour at youtube.com/asu.

"We hope that our research will benefit the health and the well-being of our local communities," Paaijmans says. "Mosquitoes are the most dangerous animal on the planet," Huijben adds, noting that they transmit diseases such as malaria, West Nile, dengue and Zika, which are responsible for about 700,000 human deaths a year.

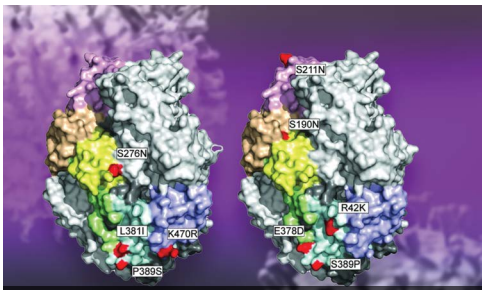
"This facility and the research ... is vital to our world and representative of the university's mission to help advance research and discovery of great public value."

— KENRO KUSUMI, DEAN OF NATURAL SCIENCES IN THE COLLEGE OF LIBERAL ARTS AND SCIENCES

MEGHAN FINNERTY

“We are taking a modernized approach to meet the needs of medical health care and public health.”

— EFREM LIM, RESEARCHER WITH THE BIODESIGN CENTER FOR FUNDAMENTAL AND APPLIED MICROBIOMICS AND AN ASSOCIATE PROFESSOR WITH THE SCHOOL OF LIFE SCIENCES AT ASU



Mutations in the respiratory syncytial virus

Research identifies mutations in a common respiratory virus

Between November 2022 and April 2023, three viral diseases surged in Arizona and across the U.S.: influenza, COVID-19 and respiratory syncytial virus. This simultaneous spread, described as a “tripledemic,” led to widespread sickness and challenged public health response efforts.

In a comprehensive, first-of-its-kind study, ASU’s Efrem Lim and his colleagues identified mutations in key areas of RSV, which the pathogen may have developed to evade vaccines.

Knowing how a pathogen has changed or moved can help researchers figure out where an outbreak started, how it’s spreading and what kinds of treatments might work best. Revised vaccine formulations may be necessary to cope with the virus’s evolution the same way that is done with the annual influenza vaccine, Lim says.

ASU researchers plan to help Arizona and national authorities mitigate RSV’s detrimental impacts.

Learn more at biodesign.asu.edu.

Connecting volunteers with research studies

From creating new cancer drugs to developing more effective teaching methods, research plays a key role in improving lives. But researchers can’t do this work alone; many studies depend on people signing up. Finding those volunteers, however, can be challenging.

The new online platform Research Plus Me addresses this challenge. Researchers can post trials that need participants, including healthy volunteers, making it easy for community members to connect with studies on topics they care about. All studies on the platform have been approved by the Institutional Review Board, and some offer financial compensation for time and travel.

Go to researchplusme.asu.edu.

Students invent air-filtration system to help Mongolian families

Wanting to keep her family warm in Mongolia, a mother burns raw coal. The polluted air harms the family, reducing children’s lung function in the capital city of Mongolia to 40% of their rural counterparts, according to UNICEF.

To find a scalable, electricity-independent solution, ASU students, under the direction of Bryan Yavari, a senior majoring in neuroscience, formed the nonprofit Project Koyash and designed a solar-powered air-filtration system that can dissipate smoke and clean the air quality inside homes in less than 30 minutes. The team’s nonprofit is working to raise $5,000 for the next round of purifiers for families.

Get involved at koyash.org.


A yurt in Mongolia that now has a solar air-filtration system.

“We have the data to prove the system works. We’re working to develop a local supply chain. But that’s for the longer-term future. Right now, people’s lives are at stake, so we have to get as many units there as we can.”

— BRYAN YAVARI, A SENIOR MAJORING IN NEUROSCIENCE

SMALL BUSINESS RESOURCES

One-of-a-kind incubator supports startups in Chandler

ASU's new Chandler Endeavor Venture Innovation Incubator is open to anyone, providing extensive step-by-step entrepreneurship training. Already, over 257 innovators with 50 ventures have signed up. Additionally, more than 85 pieces of equipment are available to local companies and entrepreneurs, including tools for laser cutting, 3D printing, textiles, vinyl cutting, electronics, wood shop, machining, metalworking and powder coating.

"It's an integration of community and ASU assets," says Tracey Dodenhoff, vice president of entrepreneurship and innovation at ASU. "No one will be turned away."

Learn more at entrepreneurship.asu.edu.

"Standard incubators serve 10 to 15 people a year. I stood in front of the city council and told them we would serve over a thousand."

— KRISTIN SLICE, PICTURED ABOVE, DIRECTOR OF COMMUNITY ENTREPRENEURSHIP FOR THE J. ORIN EDSON ENTREPRENEURSHIP + INNOVATION INSTITUTE

CHARLIE LEIGHT/ASU

“The citizens of Phoenix have been an important investor in higher education, science technology and medicine in downtown Phoenix. This is the right place to advance that work.”

— ASU PRESIDENT MICHAEL M. CROW

ASU medical school to be located in downtown Phoenix

The university’s headquarters for ASU Health, which includes a new medical school, will be built at a location to be determined in downtown Phoenix. ASU Health, which will address health-related outcomes for the citizens of Arizona, includes not only a School of Medicine built around engineering, but also a School of Public Health Technology.

“The ASU School of Medicine will produce a new kind of doctor who is technologically enhanced by every tool imaginable and able to work across entire communities, not just with individual patients,” says ASU President Michael M. Crow. “It also means Phoenix will leap to the leading edge of physician development, physician-oriented research and public health-oriented research.”

Learn more at asuhealth.asu.edu.

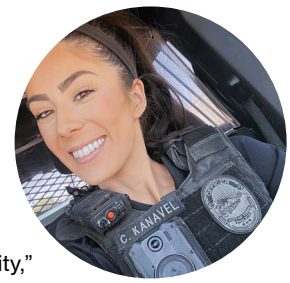
The Wall Street Journal ranks ASU among the top 20 public universities

ASU was named among the top 20 public universities in The Wall Street Journal’s Best Colleges in the U.S. for 2024, ahead of UCLA, the University of North Carolina at Chapel Hill and the University of Virginia.

Among the factors considered are student outcomes, comparing graduation rates and salary impact against similar colleges. ASU performed highest in these areas, demonstrating the university’s strong graduation rates and post-graduation success in securing jobs, benefiting the Arizona economy and making a difference in the world. **Learn more at** asu.edu/rankings.

Alumna is a police officer and Miss Arizona USA

Candace Kanavel, ’18 BS in criminology and criminal justice, a Tempe police officer, was crowned 2023 Miss Arizona USA.



Candace Kanavel

Since becoming Miss Arizona USA, Kanavel says she tries to do as much as she can for the community. “It can become a lot, but I love being out in the community,” she says. “It’s a great opportunity to be involved and showcase what you’re passionate about.”

Read more about Kanavel’s ASU journey, her career with the Tempe Police Department and time as Miss Arizona USA at news.asu.edu/missarizona.

CASTING CROWNS PRODUCTIONS/MICHAEL SOLBERG PHOTOGRAPHY

Career

Bestselling author, fashion icon and eight-time Grammy nominee Janelle Monáe spoke from the heart and took questions from the live and streaming audiences.

WORDS TO LIVE BY

‘Great leaders ask for help’

Actress, singer, writer and activist Janelle Monáe had important words of advice at ASU’s Fall Welcome for students.

1. Ask for help. “I often have new goals … and I have to admit that I don’t have all the answers. It’s a learning experience. Great leaders ask for help.”

2. Be present. “It’s a muscle – trying to stay present. Staying present is so important to me because you’ll miss life if you’re constantly thinking about the future.”

3. Avoid chasing perfection. “If we’re trying to grow, we’re not in a perfect state. It’s through our imperfections that we get to be bold and get to the more updated version of who we are.”

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Use your surroundings to shape your work life
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SAMANTHA CHOW/ASU

3 ways to make time for meaningful work

Get the work done that matters most with these tips

May Busch
is a former COO of Morgan Stanley Europe, who is now an executive coach, speaker, advisor, author and executive-in-residence in ASU's Office of the President.
maybusch.com/asuthrive

Do you find yourself wearing "busyness" as a badge of honor? Are you overwhelmed by tasks and to-dos?

Many of us are so busy spinning plates that we forget to focus on work most meaningful to us and our organization.

Start the day with your priorities

The easiest way to ensure you make time for priorities is by creating rules for yourself based on your values and goals.

For example, to get time to focus on critical work, your rule could be, "No email before 11 a.m." If physical health is important, you could say, "Stretch before drinking my coffee."

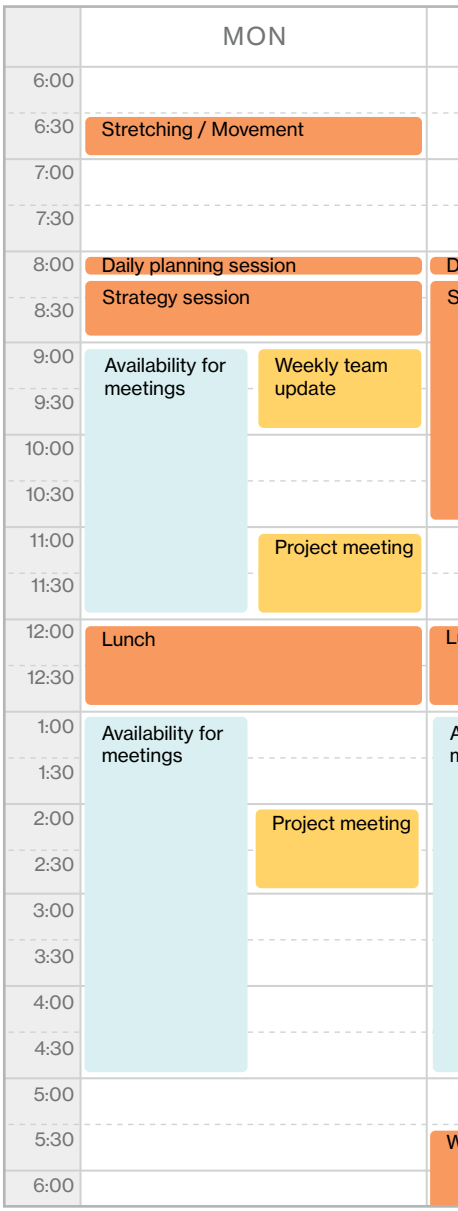
The key is to take back your morning so you can feel you've accomplished important tasks, even if the rest of the day gets away from you.

Block time in your calendar

To carve out time for key tasks that move forward strategic initiatives, block off time for those tasks. Then treat that time with the same respect you give key meetings like with your boss or manager's boss.

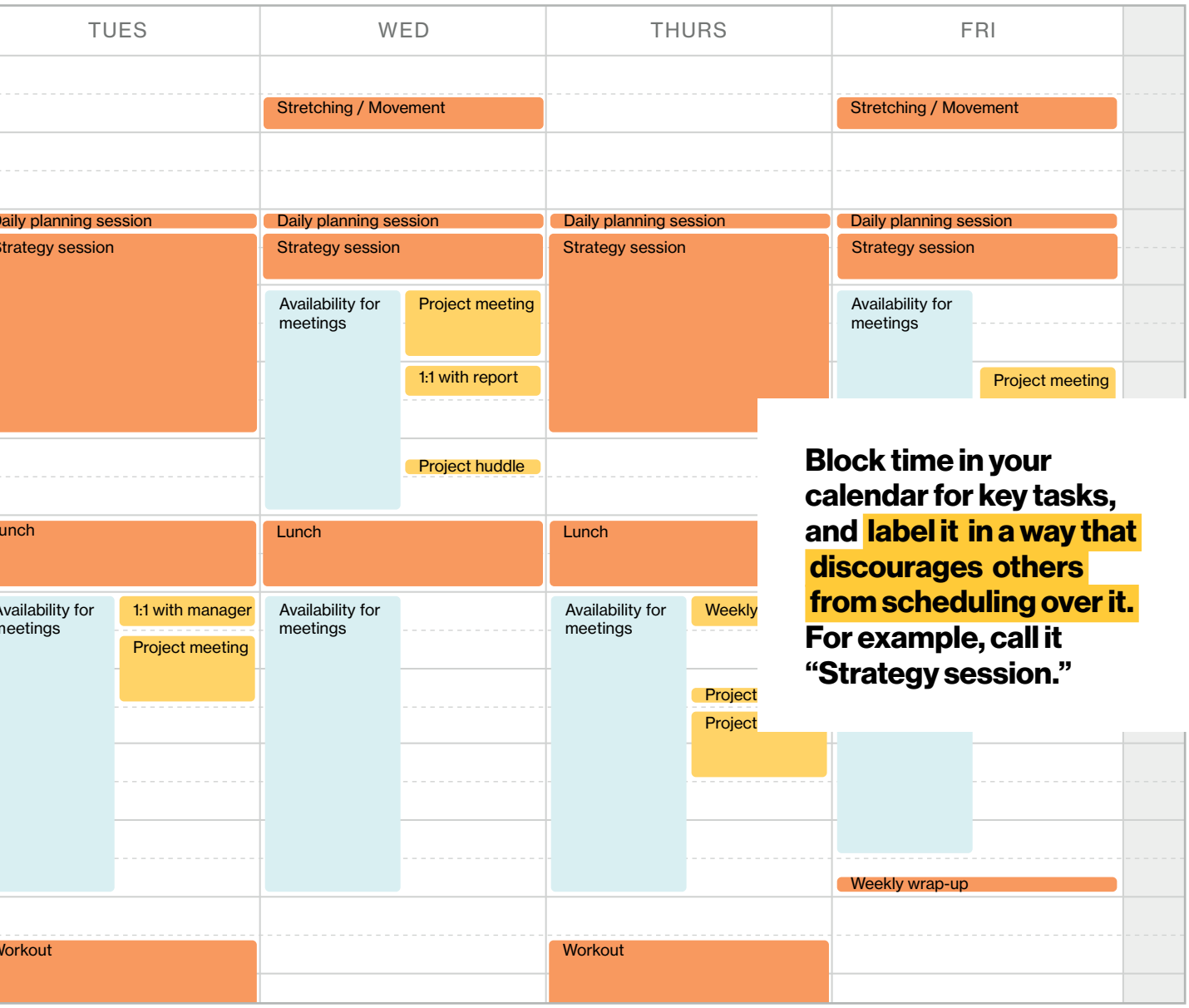
After you block time in your calendar for key tasks, label it in a way that discourages others from scheduling over it. It should be truthful and sound important. For example, you can call it "Strategy session." The truth is you are having a strategy session ... with yourself.

Treat this meeting time as a boundary that no one can cross. Remember, you are your most important client.



Delegate tasks you don't have to do

When you're overwhelmed with tasks, get in the habit of asking yourself this question before jumping in: "Who would enjoy doing this?"



Block time in your calendar for key tasks, and label it in a way that discourages others from scheduling over it. For example, call it "Strategy session."

You cannot be the answer for everything. There may be someone on your team who would see the task as a growth opportunity.

This will also make you more likely to be seen as promotable, because the more senior you get, the more you must delegate and the more you need to make time for yourself to think and be strategic.

Start carving out time for meaningful work now. It's up to you to create the space to do what's meaningful, both for you and your organization.

When you prioritize work that's truly valuable, you'll deliver better outcomes and be seen as strategic and promotable. And you'll feel calmer, more present and more fulfilled.

So what are you waiting for? Get started today.

Get a free guide

Take back your time with 21 strategies.

Go to maybusch.com/time.

4 research-driven ways to customize the physical landscape of your workspaces to help you become your best work self

Use your physical surroundings to shape your work life

Originally published in the Harvard Business Review

Story by BLAKE E. ASHFORTH, BRIANNA BARKER CAZA AND ALYSON MEISTER

All work occurs in a place, and today, workers are making more conscious choices about where to place themselves. This is for a good reason: Research shows that where you do your work makes a difference because places anchor your career and shape your sense of self.

In our workplace identification research, which integrates research on environmental psychology, organizational behavior and workplace design, we've discovered powerful ways you can adapt or create spaces to do your best work.

Research suggests that subtle environmental shifts, such as ceiling height or natural elements, often stimulate another kind of thinking and influence your well-being.

1 Personalize your workplace

By personalizing your workplace, you can make space for yourself in your organization.

For example, you might shape your workplace with inspirational identity markers like awards, diplomas or items that bring back warm feelings of nostalgia, such as a treasured photo of your team or a note from a colleague. These markers can help you to feel more integrated and seen at work and inspire you toward your best work self.

In addition, look for opportunities to build upon your identities. If part of your identity is "nature lover," you may feel most aligned where you can see or interact with greenery, even in pictures.

2 Alter your use of your space

If you're stuck on a problem or feeling uninspired, you may need to work in a different place for a few hours. Our research suggests that subtle environmental shifts, such as ceiling height or natural elements, often stimulate another kind of thinking and influence your well-being.

Sometimes, you need more than one place to address the needs of the multiple hats you wear at work. For example, you could move to a different part of the building to trigger another part of yourself.

Perhaps you prefer a place that allows solitude for tasks that require precise thinking and calculations, whereas a more energized, communal environment feels better for jobs that require creative thinking. You may find that expanding your sense of your workplace by routinely rotating spaces helps you complete different tasks more effectively.

3 Find connection through your workspace

Maybe working from home has left you feeling isolated. While you might enjoy the quiet, focused time, you can satisfy your need to feel a sense of belonging by spending one or more days each week at the office, working in a busy coffee shop for a few hours, or even enjoying lunch with a colleague.

You can also consider how you can craft the social landscape of your work by changing when and how you interact with others. Who do you engage with when you're taking your morning coffee? How do you connect with colleagues when you have a question, "big idea" or need advice on a tricky problem? Have you signaled your accessibility by leaving your office door open, if you have one, and periodically wandering around to visit others?

Blake Ashforth is the Regents Professor of management and entrepreneurship and Horace Steele Arizona Heritage Chair at ASU's W. P. Carey School of Business.

Brianna Barker Caza is an associate professor of management in the Bryan School of Business and Economics at the University of North Carolina at Greensboro.

Alyson Meister is a professor of leadership and organizational behavior at IMD Business School in Lausanne, Switzerland.

4 Architect your boundaries

In the 24/7 workplace, we sometimes feel pressured to always be "on." Our physical landscape and how we use it offers us the opportunity to create, reinforce and manage desired psychological boundaries between our roles – like being a parent, worker or member of a rock band.

Boundaries between places that house your various selves can help you recharge and be your best at work. For example, is there a place you can shape where you have no access to your work so that you can shed that work self and allow another valued part of yourself to flourish? This type of physical boundary setting can be vital for recovery from – and future engagement in – your work.

Putting it to work for you

More than ever, it's clear that our workplaces both shape and reflect important parts of ourselves, impacting our performance and well-being.

While there are limits to the places we have available for work – and our agency in making them "ours" – there are always at least some opportunities to engage in placemaking. Take time to consider whether your workplaces are working for you and how you might improve where and how you do your work.

Read the full article

Learn more and benefit from additional tips at **hbr.org**.

Audit your workplaces

Working with the following questions can set you down the path of more intentionally shaping your places of work.

- **What is your overall sense of this workplace?** For example, does it bring you a sense of calm? Does it energize you? Distract you? Focus you?
- **How does your workplace influence task completion?** Are you functioning efficiently and effectively? Are there physical or social barriers to your task completion? Does it facilitate how you change tasks as you move through your day?
- **How does your workplace impact relationships?** Do you feel connected and respected? Isolated?
- **Does your workplace reflect your professional journey?** Does it remind you of where you've been and the progress you've made? Does it allow you to picture your future goals?

Lifelong learning

What tools do you need to build your career as a creative innovator?

Training to help you earn promotions or shift your career

Gateway to the fashion industry

Step into the vibrant world of fashion manufacturing with comprehensive, interactive learning. The **"Transforming Fashion Manufacturing: Apparel Production Machinist"** certificate provides hands-on learning for fashion design skills, from machine operation to fabric handling. Learn essential skills and set yourself up for success in an industry that's undergoing a seismic shift toward in-house manufacturing. $499 with a digital badge.

careercatalyst.asu.edu

Online Self-paced

Enhance your skills as a creative professional

Artists, designers and creative innovators are building our future world. In "Assembly Required," a dynamic video series from the Herberger Institute for Design and the Arts, learn new strategies from creative field leaders for working in art and design today. Find out how you can make real-world impact with this set of actionable tools.

asuforyou.asu.edu

Free Online Self-paced

Strengthen supply chains

Learn to navigate and innovate in microelectronics supply chain management with the **"Designing Anti-fragile Microelectronics Supply Chains"** certificate. This new program empowers you with skills that set you apart in the industry and lead in a rapidly growing field. $399 with a digital badge.

careercatalyst.asu.edu

Online Self-paced

Transform your leadership skills

Each year, the ASU Alumni Association accepts a cohort of up-and-coming and current leaders for the ASU Leadership Institute, a nine-month leadership development program. Applications close on April 30.

alumni.asu.edu/leadership-institute

Free Networking

You can teach online

Want to master virtual instruction? Explore articles, tutorials and a podcast to help you learn online teaching skills.

asuforyou.asu.edu/educators

Free Networking Job search Online

Top 10 in the world for employer-student connection

ASU ahead of Princeton, MIT and Stanford – QS World University Rankings, 2022

BRANDON SULLIVAN, TIM TRUMBLE, ASU

Health and well-being

Helping improve the health of all Arizonans requires innovation in education. The Anatomage Table, a technologically advanced 3D anatomy visualization system, helps students master medical knowledge and skills more quickly.

SAMANTHA CHOW/ASU

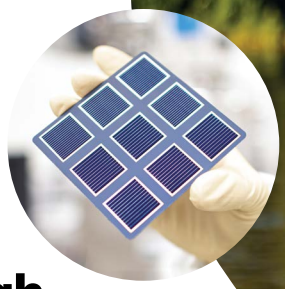
Year in review 2023

Arizonans across different backgrounds and groups agree on core areas of focus that will make everyone's lives better.

The Center for the Future of Arizona polled Arizonans for The Arizona We Want survey. Priorities emerged across eight themes, from jobs to natural resources to education. Here's how the university helped drive innovation, impact and scale in 2023 to benefit all Arizonans.

Important areas of focus that matter to Arizonans:

- **Jobs**
- **Natural resources**
- **Education**
- **Young talent**
- **Health and well-being**
- **Civic participation**
- **Infrastructure**
- **Connected communities**



Jobs

40K new high-wage jobs by 2041

ASU and Applied Materials Inc. announced an alliance, aided by the Arizona Commerce Authority, that brings more than $270 million to create a world-class shared research, development and prototyping facility in the university's MacroTechnology Works building at ASU Research Park. The total New Economy Initiative effort will add $6.9 billion to the economy by 2032 and jobs.

—

ASU West Valley campus, a centerpiece of the fast-growing West Valley, expanded to over 125 degree programs.

ASU West Valley offers over 125 degree programs, including high-tech options.

Training for new jobs

With industries bringing large-scale projects to Arizona, more skills are needed, like in project management, which is why the university launched the bachelor's degree. ASU offers over 75 microelectronics-related degrees or certificates to help prepare students for prosperous careers.

Natural resources

Preserving Arizona's water

Working with industrial, municipal, agricultural, tribal and international partners, the Arizona Water Innovation Initiative, launched in 2023, will deploy new approaches and technology for water conservation, desalination, infrastructure and reuse.

New $50M clean hydrogen facility

A Clean-Seas and ASU project moved forward. It will bring a clean hydrogen facility – the first of its kind – to Arizona, which will use plastic destined for the landfill to create the hydrogen.

—

The MacArthur Foundation named ASU's Amber Wutich, an anthropologist, a 2023 MacArthur "genius" Fellow because she has built a body of research to understand the impact of water scarcity on communities.

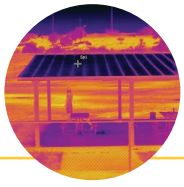
A new method for removing forever chemicals developed; PFAS contaminate the drinking water of more than 60% of the country's population.

—

$70M to help reduce industrial fossil fuels

The U.S. Department of Energy selected ASU to establish a new Clean Energy Manufacturing Innovation Institute devoted to reducing greenhouse gas emissions emitted during industrial processes.

A new solar-reflective ramada built by ASU in a collaboration with the city of Phoenix reflects heat to keep RJ Dog Park cooler.



SABIRA MADADY/ASU; CHRIS GOULET/ASU; CHLOE MERRIWEATHER/ASU ACADEMIC ENTERPRISE; COURTESY MACARTHUR FOUNDATION; DAVID SAILOR

Education

Partnerships with local schools to address teacher shortage

A team-teaching model addressing the biggest challenges in education ramped up to more schools across Arizona and the nation. Early data shows the new model results in higher reading levels and better algebra competency.

Regents Professor **Michelene "Micki" Chi** won the 2023 Yidan Prize for Education Research, an international honor for helping give teachers a stronger understanding of how students learn.

—

1 million transfer credits

In the beginning of the 2022–23 academic year, ASU hit a record of evaluating 1 million transfer credits from other institutions. Since then, the university forged more partnerships to create a seamless transfer experience to more than 400 degree programs. This helps pave the way to degrees; in fall 2023, 45% of all ASU undergraduate students enrolled at ASU entered the university as transfer students.

ASU selected for Association of American Universities

The association selected ASU into its membership, comprising 71 of the nation's top research universities, including Harvard, Stanford, MIT, Johns Hopkins and UCLA. During the past two decades, ASU has increased the scale and scope of its research activity nearly six times over.

AAU America's Leading Research Universities

Young talent

Quality K–12 education for everyone

Through online offerings, in-person work in rural towns and charter schools, ASU Prep further improved K–12 education. To date:

250K+ Enrollments across the network

41K+ Teachers trained around the globe

850+ National and international partners

Math solutions

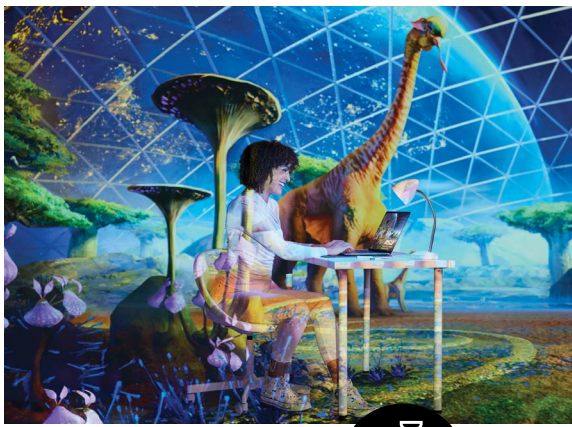
ASU created a new learn-by-doing math support model for students from middle school pre-algebra through college calculus to address math illiteracy.

—

Students assisted medical companies as part of an ongoing ASU, Mayo Clinic program.

—

Intel grants allow ASU professors to expand, diversify microelectronics workforce. TSMC sponsors undergraduate research and supports faculty research and innovation.



By spring 2023, all introductory biology courses offered through the School of Life Sciences included Dreamscape Learn labs.

ASU'S MARY LOU FULTON TEACHERS COLLEGE; DEANNA DENT/ASU; JEFF NEWTON; NORA SKRODENIS

Health and well-being

More nurses for Arizona

The Arizona Department of Health Services awarded the university with a $5.5M grant to support a 104-nurse cohort that started in 2023. This builds on the university's five pathways to nursing degrees with options for students to learn in their home communities such as Lake Havasu, where possible.

—

Largest grant in ASU history for X-ray laser

The National Science Foundation is awarding ASU $90.8 million in funding – the largest NSF research award in the university's history – to support a five-year project to build the world's first compact X-ray free electron laser, or CXFEL. It will allow scientists to observe biology's molecular processes in detail – important for understanding health and advancing renewable energy research, quantum technologies and semiconductor research.

New medical school

At the direction of the Arizona Board of Regents, the university launched ASU Health to help tackle Arizona's most pressing health challenges. It will include two first-in-the-nation schools: a new medical school in downtown Phoenix called the School of Medicine and Advanced Medical Engineering, and the School of Public Health Technology.

—

Researchers with the ASU REACH Institute found that involvement in the institute's 12-session program for youth who experienced the death of a parent led to a **50% reduction in the onset of major depression.**

Civic participation

The McCain Institute continues efforts for America's democracy, including announcing the building of the McCain National Library. To educate and spur discussions, the institute hosted 18 events and forums open to the public in 2023.

Morrison Institute turns 40

Arizona is a "laboratory for the future of democracy," and the Morrison Institute for Public Policy takes nonpartisan, fact-based research into complex issues to help preserve American democracy.

Supporting changemakers

The yearly WE Empower U.N. SDG Challenge awards changemakers with money to help make a difference. It's supported by the ASU Julie Ann Wrigley Global Futures Laboratory with Vital Voices and by numerous corporate and nonprofit partners.

PAULA SORIA/ASU; BOTTOM PHOTO COURTESY OF MCCAIN NATIONAL LIBRARY

Connected communities

VR to help others

Students in one of the university's four XR degree programs used the spectrum of extended realities to create apps for good to help people, including one making it easier for physically disabled people to navigate in virtual reality by creating an interface to help them use computers in ways that best suit their needs.

—

The new online platform Research Plus Me connects volunteers with research studies that pertain to them.

—

Small business support

ASU and Chandler partnered on a one-of-a-kind incubator model to provide entrepreneurship training and support to citizens.

—

Community effort: Mission to Psyche

The Psyche spacecraft launched Oct. 13, beginning a six-year journey to a metal-rich asteroid that could provide clues into the formation of planets. It's the first ASU-led deep-space NASA mission. In 2023, 527 students from around the country participated in the undergraduate student programs related to the mission; 573 lifelong learners enrolled in related online courses.

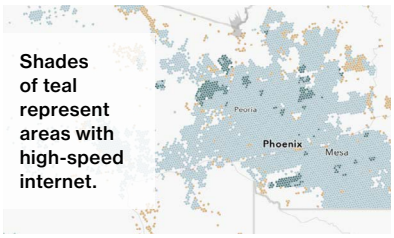
Infrastructure

A collaboration between ASU and other partners **extended the light rail by 1.5 miles using an ASU-created fiber-reinforced concrete design**, cutting construction time and costs.

—

Delivering reliable internet access

Sun Corridor Network, the Digital Equity Institute and ASU partnered to advance broadband access throughout Maricopa County. As part of the grant, ASU launched the broadband mapping project to visually represent broadband connectivity across Maricopa County to help inform city and community planning as they help connect the community to high-speed internet.



Shades of teal represent areas with high-speed internet.

Town Manager Alexis Rivera turned to ASU with his goals for Miami, Arizona – population 1,500 – to **increase tourism and residence retention as part of ASU Project Cities.** In 2023, the program worked on 21 projects with eight cities or community partners in Arizona.

The U.S. Department of Housing and Urban Development awarded a grant to create the Arizona Research Center for Housing Equity and Sustainability to **study housing security, climate and health in Arizona's Hispanic and other underserved communities.**

CHARLIE LEIGHT/ASU; AUBREY GEMIGNANI/NASA; COURTESY MARICOPA COUNTY

Year in review

2023 By the numbers

Repeatedly ranked #1

innovation

ASU ahead of MIT and Stanford

– U.S. NEWS & WORLD REPORT, 2016–24

sustainability

ASU ahead of Stanford and UC Berkeley

– SUSTAINABILITY TRACKING, ASSESSMENT & RATING SYSTEM, 2023

global impact

ASU ahead of MIT and Penn State

– TIMES HIGHER EDUCATION, 2020–23

Economic impact

$2+ billion of economic output

has been generated within Arizona from ASU-linked companies to date

– SKYSONG INNOVATIONS

Nearly

$1.3 billion

in external funding for 230+ ASU startup companies facilitated to date

– SKYSONG INNOVATIONS

Natural resources

ASU among 7 'Greenest College Campuses in the U.S.' along with Stanford, Cornell and University of Colorado Boulder

– NEWSWEEK, 2023

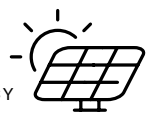
#1 in air and climate

ahead of Stanford, Cornell and UC Berkeley

– ASSOCIATION FOR THE ADVANCEMENT OF SUSTAINABILITY IN HIGHER EDUCATION, 2023

#3 in the U.S. for clean power

– ENVIRONMENTAL PROTECTION AGENCY



Research impact

ASU is one of the fastest-growing research enterprises in the U.S. with more than $879M total research expenditures in FY23

– ASU KNOWLEDGE ENTERPRISE

Top 10 among U.S. universities for patents

ASU along with Stanford, Harvard and Caltech

– U.S. NATIONAL ACADEMY OF INVENTORS, 2023

1,551 new U.S. patents* with 160 new patents in FY23

– U.S. PATENT AND TRADEMARK OFFICE

*From July 1, 2002 to Oct. 20, 2023

Education and young talent

37 programs in the top 10 in the U.S.

Along with 81 ASU degree programs in the top 25

– U.S. NEWS & WORLD REPORT, 2023–24

A top university in the U.S.

based on key indicators including academic reputation, sustainability, employment outcomes and international research network

Ahead of Dartmouth, Georgetown and Notre Dame

– QS WORLD UNIVERSITY RANKINGS, 2024

Top 10 nationally for best online bachelor's programs

– U.S. NEWS & WORLD REPORT, 2023

Top producer of elite scholars

For the past 10 years, ASU has been a top-producing university for elite scholars. For Fulbright awards, ASU ranks top 15 overall ahead of Johns Hopkins and Duke, and is the No. 2 public university ahead of University of Washington and UC Berkeley.

335 Gilman Scholars
169 Fulbright Scholars
49 DAAD-RISE recipients
41 Boren Scholars
28 Killiam Fellows
21 Goldwater Scholars
28 Critical Language Scholars
10 Udall Scholars
10 Pickering Scholars
6 Gates Cambridge Scholars
5 Marshall Scholars
3 Rhodes Scholars
3 Truman Scholars
2 Rangel Scholars

– LORRAINE W. FRANK OFFICE OF NATIONAL SCHOLARSHIPS ADVISEMENT, 2023

Philanthropy for education

$39.3 million
raised to support student scholarships in FY23

7,406 current students impacted by scholarships

$379.3 million

in new gifts and commitments

for students, faculty, research and community programs in FY23

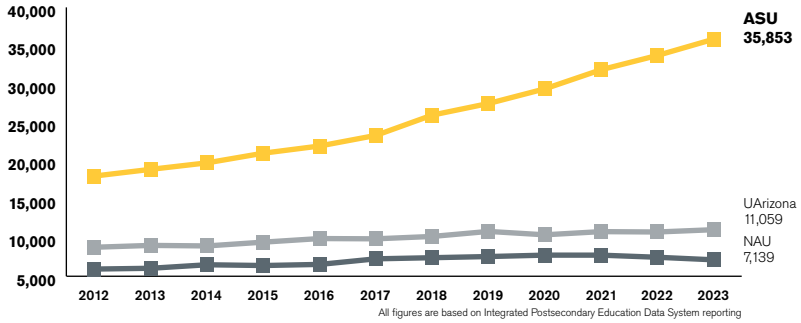
107,529

individual, corporate and foundation donors in FY23

A leader in undergraduate education

– THE PRINCETON REVIEW, 2023

Degrees awarded



All figures are based on Integrated Postsecondary Education Data System reporting

Top producer in the state

ASU annually graduates thousands of innovators who excel in engineering, business, education, the arts and other fields. In 2022–23, ASU awarded 23,579 undergraduate degrees and 12,274 graduate degrees.

– ASU OFFICE OF INSTITUTIONAL ANALYSIS, UARIZONA UNIVERSITY ANALYTICS AND INSTITUTIONAL RESEARCH, NAU INSTITUTIONAL RESEARCH AND ANALYSIS

Athletics and connected communities

Sun Devil Athletics scored the highest average multiyear Academic Progress Rate from 2018–22 in the Pac-12 for the second year in a row.

- Léon Marchand set NCAA record times, beat Michael Phelps' world record and led Men's Swimming to second-place NCAA title.
- Triathlon won its seventh straight national team championship title.
- Turner Washington won the discus to close his career, his fifth NCAA title.
- Women's Tennis posted its first undefeated home season.
- Sun Devils had a record number (11) of CSC Academic All-Americans.
- Men's Track and Field placed fifth at the NCAA Outdoor championships.

VIU by HUB

ASU

Your one-stop shop for personal insurance

As ASU's preferred broker, VIU by HUB is here to help the Sun Devil community find personalized auto, homeowners, renters, condo, life and pet insurance options. With expert advice and fast, free quotes that match your needs, insurance has never been this easy.

Get insurance quotes

Tech talent

CREATIONS

Teaching people how to build virtual worlds

Students in extended-reality degree programs are building immersive, interconnected three-dimensional worlds that solve real problems.

One project, "Mission to the Future: Arizona in 2045," is an exhibit at the Arizona Science Center that uses motion capture to create an animated AI character that talks to kids. Another project uses XR environments of U.S. National Parks to help patients reduce stress during cancer treatments.

ASU offers four master's XR degree programs in the Herberger Institute for Design and the Arts and the College of Global Futures that prepare students for entertainment, journalism, urban planning, health care or education.

Learn more at xrts.asu.edu.

"Students are embracing it. You just can't be scared. If you're courageous with technology, even if you don't know it now, you'll be fine."

— JAKE PINHOLSTER, FOUNDING DIRECTOR OF THE MIX CENTER AND EXECUTIVE DEAN FOR ENTERPRISE DESIGN IN THE HERBERGER INSTITUTE FOR DESIGN AND THE ARTS

Sian Proctor, mission pilot for SpaceX Inspiration4, the first all-civilian orbital mission, is an XRts Immersive Media Fellow.

'Our secret weapon' — ASU's role in Phoenix's rise as a U.S. chip capital 30

ALEXANDER KLINE

Arizona State's role in building a skilled labour force is part of a national trend as investors scramble for talent

ASU PHOTO

‘Our secret weapon’

How a university bolstered Phoenix’s rise as US chip capital

STORY BY MYLES MCCORMICK IN PHOENIX
PUBLISHED IN THE FINANCIAL TIMES, NOVEMBER 2023

At the turn of the millennium, Phoenix’s economy was dominated by the tourism and real estate industries that are the natural byproduct of year-round sun.

The region’s largest university reflected that influence. Arizona State had earned a reputation as a “party school” where students paid more attention to their tans and a highly-ranked football team than academics.

The sun-drenched campus in the Phoenix suburb of Tempe has not fully lost its image as a place for outdoor fun. But inside ASU’s modernist buildings, a transformation has taken place.

Today it is a microelectronics Petri dish — a hive of research and development for the semiconductor industry — while also establishing itself as America’s leading conveyor belt of engineers. All of this has laid the groundwork for the “Valley of the Sun” as the beating heart of the country’s

TSMC is building two multibillion dollar fabs in North Phoenix; the $40 billion is the largest direct foreign investment in U.S. history.

chipmaking boom.

"We were a 20th-century university and we needed to be a 21st-century university laying down the tracks for a 22nd-century economy," says Michael Crow, the president of ASU who is widely credited for the university's transformation.

"The world that we're building is not the world we are coming out of. Microchips are now going to be the rough equivalency of electricity – or water."

The university has become one of the most important engines for a city that some have described as the new US semiconductor capital. The shift has come amid a scramble in Washington to rebuild domestic capacity to manufacture semiconductors, offering billions of dollars of incentives for companies to build fabrication plants ("fabs").

> **"Our secret weapon in all of this has been Arizona State University. They have helped us attract foreign investment because they can provide the very top tier graduates to staff these companies."**
>
> – KATE GALLEGO, MAYOR OF PHOENIX

ASU's engineering school now boasts 24,000 on-campus students – more than any other standalone university in the country – and has plans to expand that number to 30,000 within the next three years. Another 8,000 study via the internet after it introduced America's first fully-accredited online degrees in electrical, software and mechanical engineering.

Even though the dry climate and isolation from natural disasters helped Phoenix become part of the semiconductor business decades ago – starting with Motorola in the immediate postwar period – government leaders give the university credit for helping launch a chip renaissance in the region.

"I would say our secret weapon in all of this has been Arizona State University," says Kate Gallego, Phoenix's mayor. "They

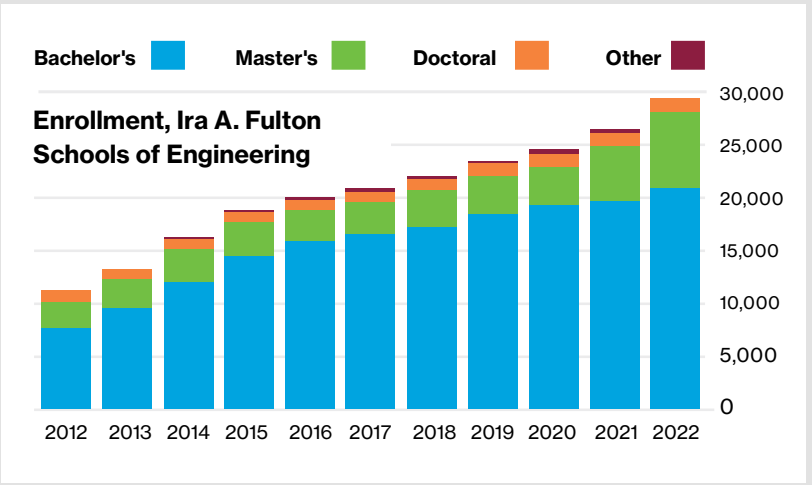
have helped us attract foreign investment because they can provide the very top tier graduates to staff these companies."

Capital has poured in. More than $60bn of investments have been announced in Maricopa County – in which Phoenix sits – since 2020, according to data from fDi Markets. Put another way: of the $242bn that has been invested in American chipmaking in the past two decades, more than a quarter of that has flowed into Maricopa County in just the past four years.

Three years ago, with the help of ASU and Crow, Phoenix bagged its biggest prize: TSMC, the world's largest maker of high-end semiconductors. The Taiwanese company announced a $12bn investment to build a fab to the city's north in 2020. Last December, the company increased

Jobs and economy

ASU has become America's biggest supplier of engineers



By the numbers

$40B
TSMC investment in Arizona
in 2021-ongoing

$20B
Intel investment in Arizona
in 2021-ongoing

$70B+
Chip investment in Maricopa County
in 2003-2023

$20B
Chip investment Onondaga County, New York
in 2003-2023

The investment in Maricopa County vastly outsizes other tech counties, including Onondaga County; Licking County, Ohio (Columbus); Williamson County and Travis County, Texas (Austin); Utah County, Utah (Provo).

Sources: ASU, TSMC, Intel, fDi Markets/Financial Times; investment numbers for counties use company investments that create new jobs or facilities

Learn more at engineering.asu.edu.

its commitment to $40bn.

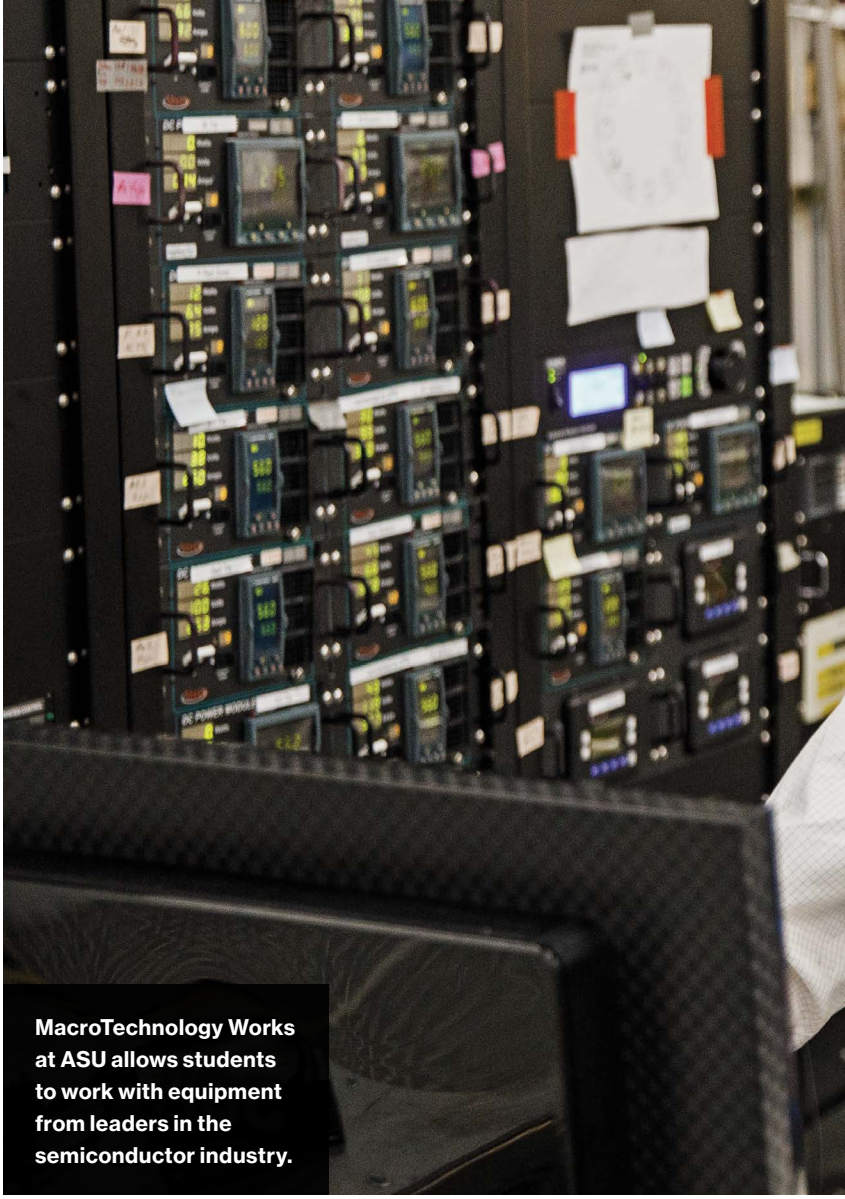
ASU's role in the revitalisation reflects a wider economic development trend nationwide. In the global battle for high-tech funding, research universities are now being deployed to the front lines, helping US cities attract the biggest capital investments with the promise of a skilled workforce that has become central to the ability of tech groups to expand.

"What we're starting to see now is a realisation that American research universities can play a much wider role across the country in spurring economic development at the local level," says Ross DeVol, president of think-tank Heartland Forward.

In Pittsburgh, Carnegie Mellon University has helped transform a city once known for its rusting steel industry into a robotics and AI hub. Cleveland has been reinvigorated, in part, by Case Western Reserve University.

In some ways, those municipalities are following the model established a half-century ago by Stanford University, where research and innovation were instrumental to the creation of Silicon Valley. But, unlike California in the 1970s, the most important role now played by ASU and similar engineering schools has been creating a skilled workforce amid one of the tightest job markets in generations.

Phoenix had the advantage of its legacy semiconductor manufacturers to help build on when Crow took the helm of ASU. Intel has had a presence in the region for more than four decades and is now expanding significantly — pumping $20bn into two new fabs in Chandler, in Phoenix's south-east.



MacroTechnology Works at ASU allows students to work with equipment from leaders in the semiconductor industry.

But the region's arrival as a chipmaking superpower has been cemented by TSMC. In the city's north-west, its burgeoning plants are rapidly growing out of a plot of land larger than New York City's Central Park.

Cranes loom over skeletal structures that will house some of the most advanced semiconductor operations anywhere in the world. Just months ago, the parcel was little more than scrubland.

The pace of this change — turbocharged by the $52bn of subsidy provided by the Chips and Science Act passed last year — and the demands it has placed on the city, have brought with it their own challenges.

TSMC has blamed labour shortages for a decision to delay the opening of its first plant from next year to 2025. It is parachuting in more than 500 workers from Taiwan to plug the gap — much to the dismay of local unions. Cultural clashes have also raised concerns locally.

"We are encountering certain

> **There's heavy, heavy, heavy pushing for advanced training, workforce development."**
>
> – MICHAEL M. CROW, ASU PRESIDENT

challenges as there is an insufficient amount of skilled workers with the specialised expertise required for equipment installation in a semiconductor-grade facility," TSMC chair Mark Liu told investors in July.

That has piled pressure on the city's leaders to accelerate a transformation of the local labour force.

"If you suddenly grow a lot of companies…the number one problem is the talent pool," says Satheesh Kuppurao, vice-president for business development and growth at Applied Materials, which supplies technology and equipment to chipmakers — and has already seen annual revenues nearly double in the past six years to $26bn.

"For the longest time people have thought: 'Hey, manufacturing always went out of the US. Why is this a good career for me?'" he adds. "We're fighting against those historical things. We need to turn the tide to attract enough students to the industry."

ASU is collaborating with chipmakers by adapting curriculums, developing new research initiatives and further expanding its engineering department.

"There's heavy, heavy, heavy pushing for advanced training, workforce development," says Crow. "It's all moving quickly, but I think TSMC would like it to move even quicker."

TSMC declined to be interviewed but said in a statement that it was "confident that the strength and diversity of the engineering talent pipeline from colleges and universities across the US will provide us with outstanding recruits".

On campus, the effort to grab graduate talent is evident. "The career fair is like a zoo," says Gabriel Adams, a 24-year-old electrical

ASU PHOTO

engineering student at ASU from nearby Gilbert. “Jobs in general are, I think, at the front of a lot of people’s minds.”

And it is not just engineers that Phoenix is producing en masse. In the city’s colleges, courses are being offered to help lower-skilled workers secure jobs as semiconductor technicians.

“I’m watching our society change — and people need educated workers faster than they can get educated,” says Tammy Robinson, president of Mesa Community College.

Along with two other local colleges, Mesa has introduced a two-week crash course for workers to retrain as semiconductor technicians.

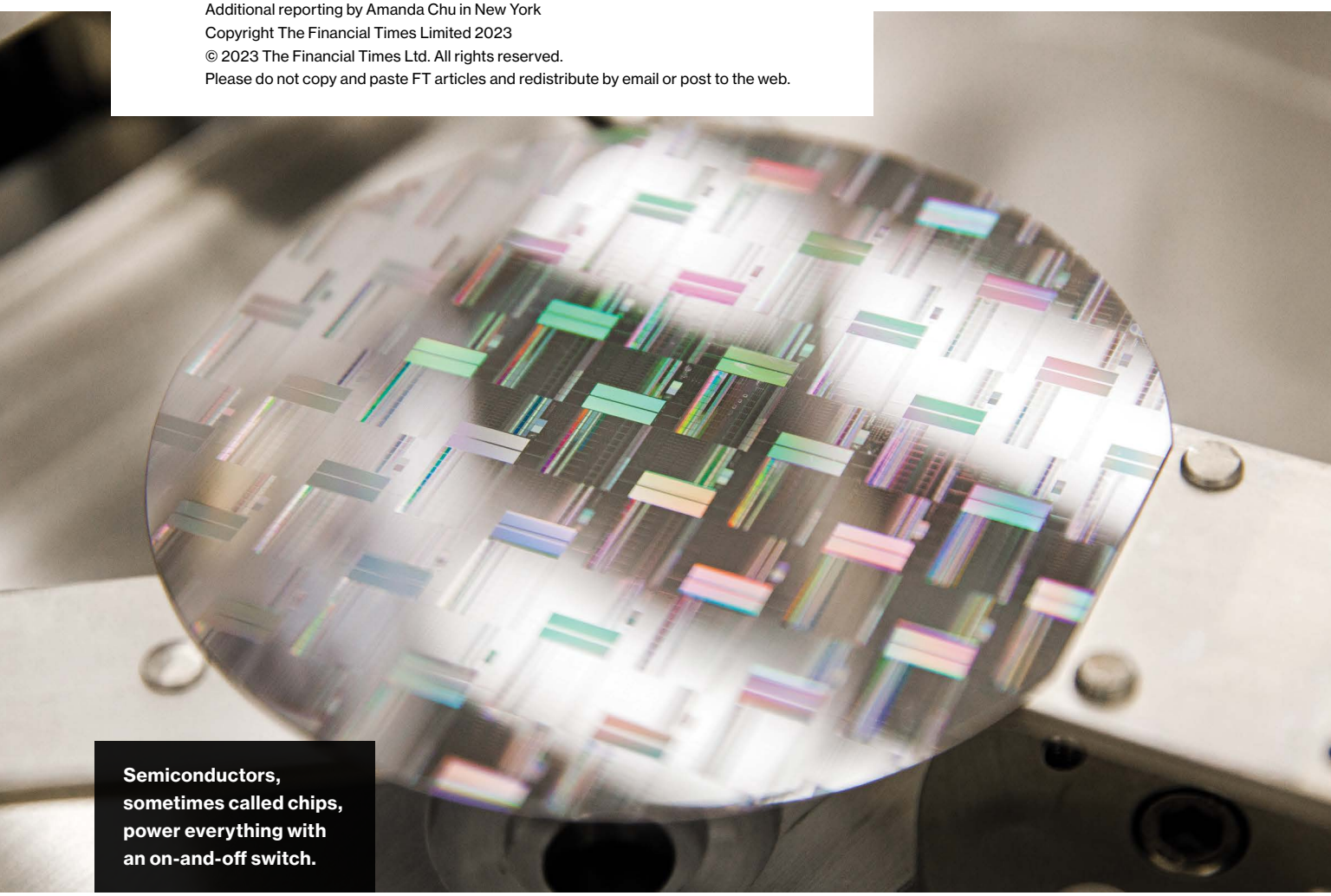
Dubbed Quick Start — and developed in conjunction with Intel — the programme aims to churn out industry-ready employees after working their way through a rapid-fire 10-day training course.

“This is a way to get them through the front door — and get them through quickly,” says Robinson. “None of us can afford to be passive anymore.”

Jobs in general are, I think, at the front of a lot of people’s minds.”

— GABRIEL ADAMS, A 24-YEAR-OLD ELECTRICAL ENGINEERING STUDENT AT ASU FROM GILBERT, ARIZONA

Additional reporting by Amanda Chu in New York



Semiconductors, sometimes called chips, power everything with an on-and-off switch.

IMPROVING MACHINE LEARNING

Students work on real-world semiconductor innovations in industry-sponsored research

Electrical engineering major Priyanka Ravindran is working on individual research projects in the FURI program that explore memristors, an electrical component of future microelectronics that has both memory and the ability to process data. Some FURI projects, mentored by Ivan Sanchez Esqueda, an assistant professor of electrical engineering, are sponsored by semiconductor foundry company TSMC. Ravindran seeks to improve machine learning through hardware in her FURI project by investigating the stacked layers of 2D materials present in neuromorphic computing devices. She hopes to further the effort of increasing computational efficiency in modern-day technology.

Learn more about the research at furi.engineering.asu.edu.

ERIKA GRONEK/ASU

COOLING

Taking the heat off Valley parking lots

An ASU professor and a team of students embarked upon a yearlong study of a cool pavement sealant product. Initial data at the parking lot at Desert Ridge Marketplace, a shopping center off Tatum Boulevard at the Loop 101, shows that the lighter asphalt coatings can create surfaces up to 20 degrees cooler than the standard current black sealcoat. This can translate into temperature reductions above the surface of up to 2 degrees Fahrenheit.

Learn more at the Southwest Urban Corridor Integrated Field Laboratory at sw-ifl.asu.edu.

"It could reduce energy costs in Phoenix by millions of dollars."

— DAVID SAILOR, PROFESSOR AND DIRECTOR OF THE SOUTHWEST URBAN CORRIDOR INTEGRATED FIELD LABORATORY

This part of the parking lot uses regular sealant, resulting in a temperature increase of up to 20 F more than the cool sealant.

Infrared image taken from above the Desert Ridge Marketplace in north Phoenix.

Sustainability solutions

DAVID SAILOR/ASU

PhD students and researchers across ASU are helping reduce reliance on single-use plastic.

Story by DANIEL OBERHAUS, ’15 BA
Photos by JEFF NEWTON

Fixing the plastic problem

Researchers tackle plastic pollution with multifaceted action plan

When Tyler Eglen, ’14 MFA in theatre (performance) and ’21 MS in global technology and development, surveys towns, stores and gas stations — almost everywhere he looks — he sees plastic.

While a student at ASU’s School for the Future of Innovation in Society, Eglen became obsessed with finding ways to turn waste plastic into useful products and received a $5,000 grant from ASU’s Zero Waste department to build an open-source plastic shredder. He now leads the Circular Living Lab’s Plastic Microfactory, which uses scaled-up versions of his shredder to recycle plastics.

“We make smaller-scale machines that a community can run and change the way plastics are collected,” says Eglen, who contrasted the microfactory with large multimillion dollar municipal recycling centers.

Eglen is part of a network of researchers and policy influencers at ASU working to reduce society’s reliance on plastic — an inexpensive, adaptable material, but one with serious consequences for the health of people and all living things. Most plastics are made from petroleum, a fossil fuel contributing to global heating. Another problem? Plastics decompose into

“There’s been a big transformation in how we tackle sustainability at ASU that comes from the realization that we need to cross boundaries like never before.”

— TIMOTHY LONG, DIRECTOR OF THE BIODESIGN CENTER FOR SUSTAINABLE MACROMOLECULAR MATERIALS AND MANUFACTURING

microscopic pieces that persist in the environment for decades, sometimes centuries. They contribute to health issues when they’re inside a living being.

Eglen’s approach to upcycling plastics to give them new life is part of the response but isn’t sufficient. Instead, Eglen says, solving the plastic problem requires holistic solutions that align plastic producers’ and consumers’ values and behaviors.

For example, he points to his team’s efforts in helping to eliminate single-use coffee cups in the Starbucks stores on Tempe campuses by fostering behavioral changes in customers. Disposable coffee cups are lined with a thin layer of plastic to help retain the hot liquid, but this plastic makes it virtually impossible to recycle the cups, he says.

As an alternative, ASU Starbucks locations offered reusable cups. Under the direction of the ASU-Starbucks Center for the Future of People and the Planet with Starbucks, the effort involved 50 people across 10 ASU teams. Eglen’s microfactory created recycling collection bins for reusable coffee cups made from plastic recycled at ASU. With this project, 50,000 beverages were served in reusable cups over the seven-month test, helping keep cups from ending up in landfills. It serves as a model that Starbucks can use to roll the project out to stores around the country.

Other campus projects to reduce plastic include a Zero Waste cup, sponsored by Coke and Sodexo, in Athletics venues. During the 2022–23 season, 5,922 Zero Waste cups were sold and were refilled 38,741 times. The university created a road map to reduce single-use plastics on all ASU campuses by 90% by 2026.

Educating for impact

Another way ASU leads is in how the university educates students, emphasizing sustainability, cross-disciplinary research and actionable solutions.

“This is especially important for students who enter into regulatory and policy roles,” says Taylor Weiss, an assistant professor in the ASU Polytechnic campus Environmental and Resource Management program. “They need to see the options available and better paths forward so when they enter into these positions of power, they have the requisite knowledge to understand what’s going on instead

PhD student Garvit Nayyar, ’20 BSE and ’23 MS in mechanical engineering, who works on making a less-harmful plastic, is covered in takeout containers, a source of single-use plastic.

of falling back on what was done previously."

This holistic approach means bridging the world of science and engineering with politics and economics and exposing students to real-world challenges.

"We keep creating wonderful technological innovations, but when that's displacing meaningful policy — when people don't want to do a hard thing — we just kick the can down the road," Weiss says.

"Sometimes the best way is to start moving forward and not keep searching for a silver bullet," Weiss says. "At ASU, we're trying to let students know when that is the wrong approach and when you need a broader vision where you don't need something new to start fixing this."

Innovation at ASU

Given how important plastics have become, it would be difficult to stop making them overnight — despite the urgency.

This has led researchers like Timothy Long, director of the Biodesign Center for Sustainable Macromolecular Materials and Manufacturing, to look for ways to keep the utility of plastic while minimizing its threat by making plastics from materials more environmentally benign and easier to recycle.

At the same time, he and his team are advancing what he calls "green chemistry," to look for new, nontoxic sources for plastic production. Urea, for instance, is a metabolic byproduct found in urine. It may be used to make bioplastics to replace plastics found in foam mattresses and similar products, Long says.

Cutting plastic out of foam mattresses makes a difference. The global demand for polyurethane plastics used in mattresses is about 25 million tons per year and is expected to grow by 20% before 2030. The foam used in mattresses accounts for nearly a third of the total polyurethane demand, so a reduction in plastic used in mattresses could translate into millions of tons of plastic reduction. But like Weiss, Long acknowledges that innovative new foam chemistries will only be successful if integrated into the real world; his team is working on that.

"I always tell people that I'm no longer training PhD students in chemistry — I'm training innovators, entrepreneurs and thinkers," Long says. "There's been a big transformation in how we tackle sustainability at ASU that comes from the realization that we need to cross boundaries like we've never done before. A research center that works only on the molecular level will never be successful because manufacturing processes, social practices, policy and economics must be part of a modern sustainability mission."

Weiss agrees; new bioplastics are a critical alternative to conventional plastics. We already know how to make dozens of bioplastic materials, he says. The question is how to produce them at scale.

"Industry demand for bioplastics is high," Weiss points out. "There isn't enough supply to meet

the demand at a reasonable price point."

The Arizona Center for Algae Technology and Innovation is working on the bioplastic supply problem. Algae is an aquatic plant that grows quickly and feeds on waste streams such as atmospheric CO2. As researchers at AzCATI have found, it's also possible to genetically engineer bacteria to work with the algae to produce a bioplastic that breaks down like wood or other natural material.

But if you're imagining a future of algae-grown utensils in fast-food restaurants, Weiss says that could be a long way off. Although this approach to bioplastic production is sustainable, it's also expensive and competing for more important uses – at least for now.

Instead, the commercial markets focus on "high-value" applications like bioplastic scaffolding for organ transplants that dissolve over time, where cost is less important than performance.

Reducing reliance on plastics

Upcycling conventional plastics or replacing them with bioplastics are musts, but most plastics researchers emphasize that stopping the production of so many plastics in the first place is critical.

"If your house is flooding, the first thing you do is turn off the water," says Rolf Halden, director of the Biodesign Center for Environmental Health Engineering. "That's what we need to do with plastics. We have to turn off this constant input so we can begin to sort out how to capture these materials from the environment."

Rose McDonough, grad research assistant in the Long Research Group.

Clarissa Westover, grad research assistant.

How to make a difference

Advocate for change

You can help pressure politicians and regulators to create policies to reduce plastic production, says Rolf Halden, director of the Biodesign Center for Environmental Health Engineering.

Do a plastic audit for a week or two

Note the items you most often purchase that use plastic; work on cutting those out first, says Beth Polidoro, the program lead for marine sciences and conservation in the Center for Biodiversity Outcomes at ASU.

Use durable water bottles instead of single-use plastics

Over 600 billion single-use water bottles are produced yearly, so carry a reusable water bottle to avoid these plastics, says Timothy Long, director of the Biodesign Center for Sustainable Macromolecular Materials and Manufacturing.

Jose Sintas, grad research assistant.

Buy laundry or dish detergent as powders

Choose alternatives that don't come in plastic packaging, such as bulk powders or detergent sheets, says Leah Gerber, founding director of the CBO.

Garvit Nayyar, graduate research assistant.

Learn where your recycling goes

Putting the wrong items in the recycling bin makes it hard for waste facilities to sort plastics. Use public resources to learn what plastics can be recycled, Long says.

Halden doesn't expect the $600 billion global plastic industry to shut down overnight. Still, he believes it's possible to steer it toward more sustainable solutions with thoughtful local, federal and global policies. If a sufficiently high tax were placed on petroleum destined to be turned into plastic, for instance, it would strongly incentivize manufacturers to adopt alternative solutions. He is pushing for this approach. And students he has educated, like Charlie Rolsky, now the director of science for the nonprofit policy organization Plastic Oceans International, are too.

Leah Gerber, the founding director of the Center for Biodiversity Outcomes and a professor of conservation science, agrees that policy changes can help reduce plastic production. She also notes that in addition to changing the way we produce and recycle plastics, we also need to improve the cleanup of plastics in the environment.

"Globally, we need to better manage plastic waste by 90% and ramp up cleanup by 40%," Gerber says.

Gerber's research collaborator, Beth Polidoro, thinks about this waste management problem a lot. For the past few years, Polidoro, a senior global futures scientist in the Julie Ann Wrigley Global Futures Laboratory and the program lead for Marine Sciences and Conservation at the CBO, has traveled to American Samoa to work on solutions for helping the residents of these small Pacific island nations manage their waste. Without much land to bury

"I'm excited to collaborate across the university toward a better future."

— TIMOTHY CHASE, UNDERGRADUATE STUDENT IN CHEMICAL ENGINEERING; HIS GROUP MAKES BIOPLASTICS OUT OF MATERIALS THAT DECOMPOSE.

the plastic, much of it ends up in the ocean.

Although economic incentives including recycling subsidies and other policy moves like classifying plastic as a toxic waste can help places like American Samoa address their plastic problem, consumers play a crucial role, too, Polidoro says.

"There are so many moving parts and different players that it's easy to blame some other entity that's not you," she says. But, it's critical to take responsibility for plastic consumption and explore ways to reduce usage.

In American Samoa, for example, Polidoro has spent the past few years working with local business owners to do pilot tests on containers made from sustainable bioplastics or other alternatives. The goal? To evaluate how food containers — a major source of plastic waste on the island — can be replaced with alternatives.

Hard, but not impossible

The complexity and magnitude of the plastic problem can make any effort to solve it feel overwhelming. Only a small fraction of this plastic, less than 10%, is recycled globally, and bioplastics still represent less than 1% of the plastic produced.

Gerber says the outlook for the future isn't all doom and gloom. "I work on a lot of different conservation issues, and I always think plastic is definitely one that we could solve," she says. "There's momentum around addressing the plastic issue, both in terms of regulatory action, the companies that produce it taking responsibility for the whole lifecycle of plastic, a growing movement in the corporate sector, and innovation in terms of alternative materials."

Gerber acknowledges that in addition to incentivizing a reduction in the production of plastic, there will be a lot of complex cleanup to do, given the billions of tons of plastic already produced. But as policymakers, researchers and the general public become increasingly aware of the scale and urgency of the problem, Gerber feels hopeful that it will put the world on the path to change.

"Awareness has skyrocketed over the past 10 years, and there's just tremendous growing momentum around interest in tackling this problem. I feel optimistic that we'll get there," she says. ■

TEAMING UP

Coming together for the Amazon rainforest

An Indigenous community and ASU researchers teamed up to protect biodiversity in the Amazon rainforest in Brazil. The group, Team Waponi, created a solution that involves using a drone to drop a device into the tree canopy to measure sound, record images, and take insect and plant samples from 1 square kilometer of rainforest. The goal? To measure biodiversity to protect the ecosystem.

The project combines artificial intelligence data analysis with the knowledge of the region's Indigenous people, who are sharing their insights into the plants, animals and insects of their environment.

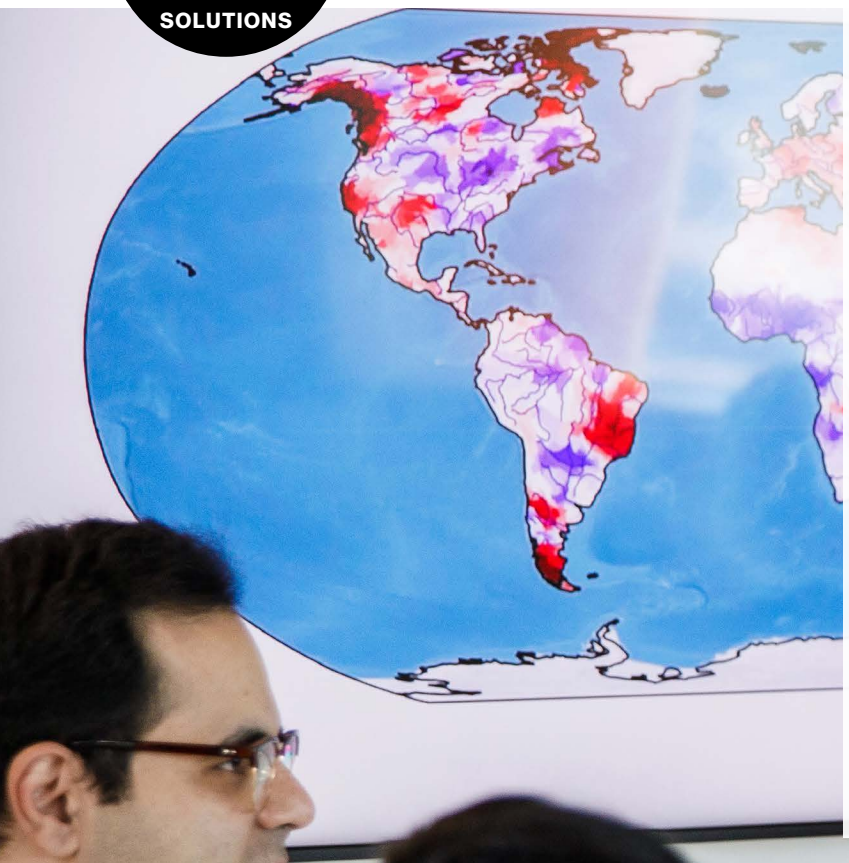
The team is one of six finalists for the $10 million XPRIZE Rainforest competition. The finals will be held in the Brazilian Amazon rainforest in mid-2024.

Go to teamwaponi.org to learn more.

"We're not just thinking of this just as a final product for the XPRIZE. We're creating a replicable model that communities can use as a road map."

— NICHOLAS PILARSKI, ASSOCIATE PROFESSOR IN THE SCHOOL OF ARTS, MEDIA AND ENGINEERING AND THE SIDNEY POITIER NEW AMERICAN FILM SCHOOL, AND A GLOBAL FUTURES SCIENTIST

PHOTO COURTESY TEAM WAPONI



NATURAL RESOURCES

Preserving water for future generations

An ASU professor is helping measure groundwater storage so Arizona can maintain it. Jay Famiglietti and his team work with a satellite system that tracks groundwater supply changes from space via the NASA GRACE mission. Famiglietti, a Global Futures Professor in the School of Sustainability and part of the Arizona Water Innovation Initiative, says these satellites can help Arizona identify vital groundwater.

Arizona gets about 40% of its water supply from groundwater, he says; much of that is used for irrigated agriculture.

"It may surprise people to know that, by area, less than 25% of the state of Arizona is subject to groundwater management," he says. "This is problematic."

Properly measuring current supply and changes will help Arizona's government water agencies protect the groundwater supply, Famiglietti says.

Go to azwaterinnovation.org to learn more.

“One of the most important things that we can do in Arizona is to understand how much water we have, how much we use and how these are changing over time.”

– JAY FAMIGLIETTI, A GLOBAL FUTURES PROFESSOR IN THE SCHOOL OF SUSTAINABILITY

ANDY DELISLE/ASU

Education

DREAMING BIG

Future astronauts

Students across Arizona were invited to participate in a spirit week to celebrate the ASU-led NASA Psyche mission. The October launch kicked off the spacecraft's journey to an asteroid orbiting the sun between Mars and Jupiter thought to be made entirely of metal.

The intent of the spirit week? To inspire young minds to dream big and explore possibilities for their future careers, including those related to space.

The efforts come from Access ASU, a K–12 enrichment division dedicated to increasing access to higher education for Arizonans. ASU will continue to help teachers in Arizona and beyond follow the mission through teacher guides and other resources.

Learn more about the NASA Psyche mission and download teaching materials at psyche.asu.edu.

Eighth grader Benjamin Graves, 13, shows off a NASA astronaut costume at ASU Prep in downtown Phoenix.

CHARLIE LEIGHT/ASU

Teaming up for K–12 students 52

Teaching science through storytelling 58

At Westwood High School, teachers work in teams. Pictured: student Stockton Seaman, teacher Kelly Owen, teacher Arianna Roemke, ’21 BAE secondary education (English), and high schooler Michael Picaso.

What happens when a class has 5 teachers?

ASU's Mary Lou Fulton Teachers College is helping school systems rethink the traditional classroom model

Story by SHELLEY FLANNERY, '04 BA
Photos by SABIRA MADADY

Westwood High School student Avery Mecham thought it was luck when she received her 2021–22 class schedule. All four of her core classes took place in a row.

It hadn't been luck, though. It was part of a team-teaching model at Westwood High School in Mesa.

With the model, Avery spent four class periods per day — math, science, language arts and career exploration — with a mix of the same 150 students. And it meant that she and her fellow students took on more interdisciplinary projects, received more

Shaun Reedy says that teaching as a team allows each teacher to lead their subjects, as well as help and support one another.

personalized help from their team of teachers and ultimately retained more of their learning.

Those benefits to students are one reason Westwood is moving to a team-teaching model.

"We recognize this is what we must do for our kids and community to improve learning outcomes," says Westwood Principal Chris Gilmore.

A new approach

Like Avery and her mom April, Michael Picaso and his mother Cecilia, had never heard of the concept before. At first, Michael had reservations because his academy schedule didn't allow him to enroll in orchestra as his elective.

"They put him in band instead of orchestra," Cecilia says. "But once we figured out the timing of the classes and how they all fit together, then I understood."

Stockton Seaman and his dad Jared, felt familiar with the concept; Stockton's cousins had been part of that model.

"My cousins hadn't said anything bad about it, so I just thought it was going to be fun and different – a new thing to try," Stockton says.

How the team-teaching model came about

Mary Lou Fulton Teachers College Dean Carole Basile and a team of faculty and staff developed the model in collaboration with Arizona school districts, like Mesa Public Schools, to solve some of K–12's most pressing problems, including teacher shortages, low high school graduation rates and poor learning outcomes.

Through its Next Education Workforce initiative, the college works with schools to implement classroom models in which two or more licensed educators teach a shared roster of students. It contrasts with the traditional model of one teacher per classroom where the lone teacher attempts to work with as many as 30 or more students simultaneously.

The team-teaching framework is customizable, with each school molding the practice to fit the needs of its students. The work is part of – and leading – a national movement in strategic school staffing solutions referenced as a success by Education First, a national mission-oriented policy organization, and other education leaders.

Team teaching: A Principled Innovation

The Next Education Workforce is an example of ASU's ninth design aspiration, Principled Innovation — creating change guided by values and ethical understanding. It means always considering, "We can innovate, but should we?" "Who will benefit?" and "Who needs to be included?"

That's what Executive Director Brent Maddin and the rest of the Next Education Workforce team do when supporting schools across the country. **In 2022–23, educators at 45 schools across 10 school systems in Arizona and California built more than 120 Next Education Workforce teams that supported nearly 10,000 students.** This year, dozens of new schools are piloting the model in more than a half-dozen additional states, as well as in the city of Yuma. The work has expanded to rural areas in Colorado and Arizona, too, including Winslow.

"We're at a unique moment in time to redesign how we staff schools," Maddin says. "We're encouraged by the thoughtful innovation we're seeing and what we're able to accomplish together. Our team's role is to partner with school systems, help them create the space to dream and innovate, providing technical assistance and offering the support that all of us need anytime we start something new."

Learn more at workforce.education.asu.edu.

"We all have our roles that align with our strengths."

— SHAUN REEDY, CAREER EXPLORATION LEAD, WESTWOOD HIGH SCHOOL, MESA

The Westwood approach

Westwood High School administrators and the teachers college developed their team-teaching model to address two major challenges: retain educators and keep students engaged and graduating.

At Westwood, the administration divides first-year students into "academies" of 150 students. All of those students have the same teachers for their four core classes — language arts, math, science and career education. Students then go separate ways for electives.

The educators within an academy — four core teachers, all certified, experienced teachers and experts within their fields, plus one special educator — share the 150 students across four class periods and get two periods at the end of each day to take care of administrative tasks, which they divide among themselves.

"We all have our roles that align with our strengths," says Shaun Reedy, career exploration lead at Westwood. "On my team, I am the one to go to administrative meetings and handle administrative tasks. We have a financial officer who helps look for grants to fund our projects and a data analyst who builds the class rosters based on which students might need more instruction in one area or another. Then we have two teachers that handle daily operations like scheduling."

The educators use their prep time to plan lessons, spending half on their subject matter and the other half working as a group to plan cross-disciplinary assignments.

In some cases, the crossover means a shared theme, such as ancestry, in which the biology teacher might teach a unit on genetics and heredity while the language arts teacher assigns a paper analyzing family history. In other cases, educators work together to design projects that intertwine curriculum, such as creating a newspaper on Greek mythology; students use math to ensure their paper is profitable, language arts to write the articles and biology to explore DNA characteristics of the Grecian superheroes. And sometimes they all teach together, each explaining the part of the project most aligned to their subject area while the others help manage the classroom.

"It makes a difference outside of just test scores and credits. You find out what they're dealing with at home and their learning barriers. And then, as a team, we can wrap around them and build them up."

— TYLER HETTICK, WESTWOOD MATHEMATICS TEACHER

A school within a school

The Westwood Academy teachers divvy up each day's four learning hours to best help students achieve their learning outcomes.

"So, if we see students are having trouble grasping a math concept or biology needs 90 minutes to do a lab experiment, we have the ability to do that," Reedy says.

That flexibility also allows for more in-depth, experiential learning in which students get real-world context for the concepts they've learned. For example, Michael's academy completed a project last year centered on a made-up murder mystery. The students had to analyze DNA evidence for a biology class, calculate the killer's height from the size of the footprints for algebra and write an argumentative essay for language arts.

"It was fun," Michael says. "Much more fun than doing a final paper or test. And I think I retained the information better, too."

Cecilia says Michael seemed more engaged in school than in previous years. "I enjoyed the fact that he would come home and tell me about it in such detail," Cecilia says of the murder mystery project. "And then I kind of got involved with it because he would tell me, 'Well, this person could have done it because of these reasons, and this person could have done it for these reasons.' So I was there with him, trying to figure out who had done it."

Same concept, various models

At a Tempe elementary school just 14 miles from Westwood, team teaching takes a different look and feel. Kyrene de las Manitas Innovation Academy renovated its classrooms into four "learning studios" accommodating up to 120 students spanning two or three grade levels per team.

Each studio is divided into four spaces using room dividers with a glass-walled room in the center, cutting some of the noise while still allowing clear sightlines from one

Four teachers at work with students. From left: Arianna Roemke, Shaun Reedy, student Stockton Seaman, teacher Mikaela Thomes, '22 BAE secondary education (biological sciences), in the striped sweater, student Avery Mecham, Rebecca Holub in the green shirt and student Michael Picaso.

Rebecca Holub teaches math as her other team teachers (not pictured) plan lessons and offer support.

space to the others. The flexible space allows for fluidity — the teachers can easily move students around based on learning styles and competencies or seating configurations for group work versus individual tasks.

Kyrene's teaching teams consist of one lead teacher, two additional certified teachers, and two or three teacher candidates. Candidates and early career educators benefit from teaching in the same space as more-experienced educators. And that helps the students too.

Better together

Whatever the approach, it improves education, including that educators get to know their students better.

"You get a view of students you can't get as a siloed teacher," says Westwood mathematics teacher Tyler Hettick. "It makes a difference outside of just test scores and credits. You find out what they're dealing with at home and their learning barriers. And then, as a team, we can wrap around them and build them up."

Team teaching also means the educators can take time off without affecting lesson plans and feel more supported. It also makes the job more enjoyable, Reedy says.

"It's a lot more fun this way," Reedy says. "If someone told me I had to go back to 'one teacher, one classroom,' that'd be it for me. I would leave education."

Students Avery, Michael and Stockton and their parents say they're pleased with their experiences with team teaching at Westwood.

"With Avery, there had been a lot of trepidation about going to Westwood since most of her friends from middle school were going to a different high school," April says. "But it was within the second or third week of school that she came home every day telling me how much she loved her teachers, how much she loved the program and how she was getting to know people better. All I ever heard from her about it was positive. She did great." ■

Promising results

The Next Education Workforce initiative from ASU has rolled out to more than 50 schools. Only in its fifth year, early data shows it's improving learning outcomes.

Ahead in reading with team teaching

Third grade students showed more reading growth on average than their peers.

Better algebra outcomes with team teaching

Four percent more Westwood High School students passed Algebra 1, compared to a demographically similar high school. Female students passed Algebra 1 at 7 percentage points higher grades than female peers, and Hispanic-identified students passed at 5 percentage points higher grades than peers.

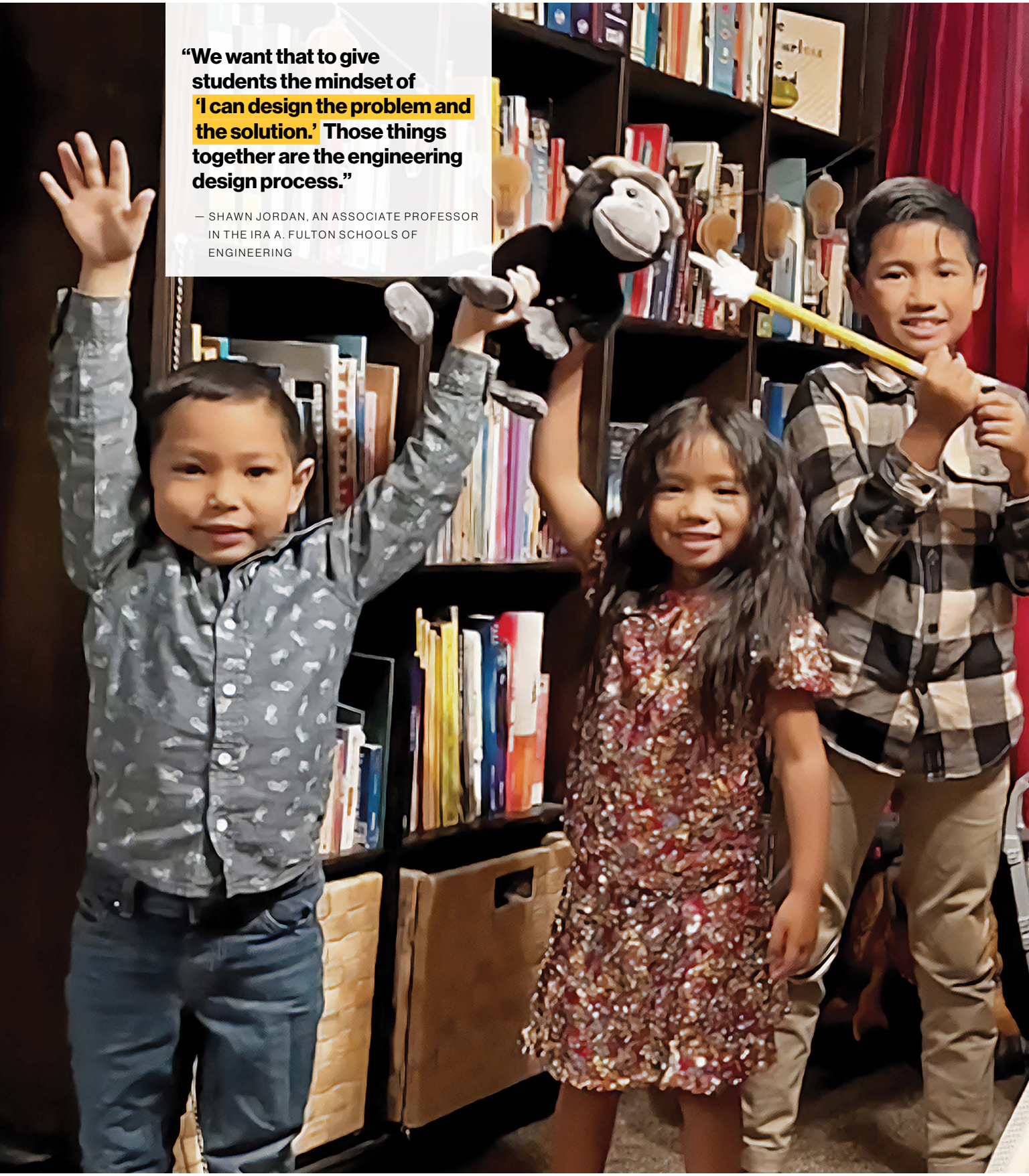
Higher teacher satisfaction with team teaching

75% of teachers involved with the team-teaching model reported satisfaction with their job, compared with 66% of teachers in the same district.

SOURCES: ASU'S MARY LOU FULTON TEACHERS COLLEGE MESA PUBLIC SCHOOLS RESEARCH LEARNING SUMMARY REPORT AND JOHNS HOPKINS "YEAR ONE SURVEY OF NEXT EDUCATION WORKFORCE (NEW) TEACHERS"

"Within the second or third week of school [my daughter] came home every day telling me how much she loved her teachers, how much she loved the program and how she was getting to know people better."

— APRIL MECHAM, PARENT OF WESTWOOD HIGH SCHOOL STUDENT



"We want that to give students the mindset of 'I can design the problem and the solution.' Those things together are the engineering design process."

— SHAWN JORDAN, AN ASSOCIATE PROFESSOR IN THE IRA A. FULTON SCHOOLS OF ENGINEERING

From left: Evan Orona, Leilani Zazueta, Landon Zazueta, Ethan Orona, Liam Zazueta (top), Cameron Cruz.

INVENTORS

Uniting storytelling and engineering in K–12 schools

Storytelling and engineering have parallels. Both begin with a problem that protagonists — or engineers — must overcome.

Shawn Jordan and Liz Warren use that connection to invite students into science, technology, engineering, art and math, referred to as STEAM. Jordan is an associate professor in the Ira A. Fulton Schools of Engineering at ASU. Warren, ’76 BS and ’81 MS in anthropology, directs the Storytelling Institute at South Mountain Community College.

They, along with other faculty members, coach K–12 students across the Valley and in Nogales and Tucson in designing a chain-reaction machine while crafting a story to explain its origin.

In the recent competition, “The Monkey Adventure” by the Cruz, Orona and Zazueta families of ASU Preparatory Polytechnic STEM Academy won first place. Their entry depicted a harrowing rescue of a kidnapped monkey that spanned several rooms and stairs.

Learn more at fullcircle.asu.edu.

PHOTO COURTESY OF #BREAKACODE CHAIN REACTION CONTRAPTION COMPETITION

No days off.

The average university stadium is massive and expensive but only sees use a few times a year. **Arizona State University is flipping that fact on its head.**

ASU 365 Community Union transforms Sun Devil Stadium into a public space for programming as vibrant as the community it serves. With comedy shows, watch parties, yoga sessions and more, **there's something for you and your family.**

For information about upcoming events or venue rental, visit **asu365communityunion.com**.

ASU 365 Community Union
Arizona State University

Sports

MULTIPLE TALENTS

Singing tennis player

Chelsea Fontenel swings hard and sings big — dual passions she discovered growing up in Switzerland, competing in the European Junior Tennis Championships and soloing in "The Voice Kids" competition in Germany. She's continuing both pursuits while working on a degree in popular music at ASU. Six mornings a week, Fontenel walks on the court at the Whiteman Tennis Center for practice at 8, followed by a vocal workout in a sound studio.

ASU Tennis Coach Sheila McInerney says Fontenel "... does everything with passion. She really loves making music and pretty much the same on the tennis court." After all, she went 15–5 in singles last season.

McInerney says that when she heard Fontenel sing at an athletic department banquet last spring, "I was blown away. It was amazing."

You can find some of Fontenel's vocal releases on YouTube and Apple Music.

— KEION CAGE, SPORTS WRITER FOR CRONKITE NEWS, '23 MA IN SPORTS JOURNALISM

Women's Triathlon claims 7th national title
62

Volleyball breaks records
63

THOMAS FERNANDEZ/ASU

Sun Devil Women's Triathlon claims 7th national title

Sun Devil Triathlon seized its seventh consecutive national championship last fall. Sophomore Naomi Ruff and senior Amber Schlebusch podiumed at Tempe Town Lake North Park in second and third. Sophomore Heidi Jurankova finished fifth, with bike and run times qualifying her for All-American honors.

In addition to winning the national title every year Triathlon has been an NCAA sport, Head Coach Cliff English won NCAA Division I Coach of the Year. Consecutive championships bring pressure, says English.

"That's what is amazing about the women on this team," he says. "They don't just sit back and say, 'We are winning this.' It's always about, 'What can I do to be better and to make this team better?'"

Learn more at thesundevils.com/sports/triathlon.

Naomi Ruff placed second overall in the triathlon national championships.

2024 NCAA Final Four at ASU

ASU will host the 2024 NCAA Division I men's basketball Final Four on April 6 and 8 at State Farm Stadium in Glendale, the finale of nearly a month of madness that begins on March 19. This won't be the first time – the university hosted in 2017. And J.D. Loudabarger, ASU's associate athletic director of athletic operations and facilities, and Mike Chismar, senior associate AD for operations and facilities, were at NRG Stadium in Houston last April for the 2023 championship, getting an update of what's involved in hosting the big show, which involves numerous people and logistics.

"It's hard to even say (how many). But it's a lot," Loudabarger says. He estimates 25 to 30 people from Sun Devil Athletics will be directly involved in the event. ASU will provide practice sites for the Final Four teams – Desert Financial Arena and the Weatherup Center in Tempe. The university will take care of "running the floor," Loudabarger says, providing operators for the scoreboard, shot clock and game clock.

Sun Devil Athletics is recruiting volunteers for dozens of support roles, including media runners, player escorts and credential checkers.

Watch thesundevils.com for opportunities. But if you miss out, you can join the rest of America watching the tournament on TBS.

SUN DEVIL ATHLETICS PHOTOS

How caring professor helped struggling student

"When you're in education, you're asked to share who made the difference. He's always the person I go to," says Krista Cox, '09 BA secondary education. She's referring to ASU Professor James Blasingame, who taught Cox in his literature class years ago.

Back then, Cox was a single mom. She skipped a couple of Blasingame's classes, and he wanted to know why. Cox told him about her struggles, and she mentioned that she wrestled in high school. Blasingame too shared a wrestling passion; the professor made it into the National Wrestling Hall of Fame with his 1974–75 University of Northern Iowa team. The two bonded.

Blasingame offered to pay for daycare or for Cox to bring her son to class. "Just showing he cared was enough for me to figure out a way," Cox says.

Cox went on to earn her master's and doctorate. She became a teacher and a principal at Campo Verde High School in Gilbert and is now the director of secondary curriculum, instruction and assessment for Gilbert Public Schools District.

Krista Cox, '09 BA, felt supported by Professor James Blasingame.

ASU PHOTO, RAYMOND CARLIN III

Volleyball breaks records

In its 50th year, the Sun Devil Volleyball team set records, including the most wins all-time at 24-4. The team also had the most sweeps in a regular season with 17 and the most conference wins in program history with 12.

Senior Marta Levinska won AVCA/GameChanger Division I Player of the Week in October and won Pac-12 Players of the Week multiple times. In postseason conference honors, she was named to the All-Pac-12 Team, and Coach JJ Van Niel was named the Pac-12 Coach of the Year.

The team went on to compete in the Sweet 16 NCAA Tournament in December.

Learn more at thesundevils.com/sports/volleyball.

Sun Devils assist D-backs' historic World Series season

Several Sun Devils helped lift the Arizona Diamondbacks to their storybook appearance in the 2023 World Series — the team's first since 2001. D-backs president, CEO and general partner Derrick Hall, '91 BA in broadcasting, led the turnaround from a string of losing seasons. Former Sun Devil hurler Merrill Kelly pitched a winning game 2. Outfielder and ASU Online student Corbin Carroll hit 25 home runs in his first season, an MLB record that helped him earn a unanimous vote as National League Rookie of the Year. And former Sun Devil outfielder Cory Hahn, '14 BA business (communication), continues looking for the next best prospects as assistant director of player personnel.

Follow thesundevils.com/sports/baseball to see where former university stars are today.

INSPIRE

Deepen connections with others

Loneliness is a nationwide epidemic, according to the country's top doctor, who urged a crowd of students to create a culture of connectedness.

"If you spend just 10 minutes talking to somebody and put everything else away," said U.S. Surgeon General Vivek Murthy, "and give the benefit of your full attention and look into their eyes and listen and respond to what they're saying, it can feel extraordinarily powerful."

Texting a friend to check in also can make a difference, he said. That's why during the event, Murthy and participants texted someone they care about, then turned on their cellphone flashlights, as pictured from above the stage in Memorial Hall.

"With these small but powerful actions, you're telling them, 'I see you. You have value. You're not invisible.'"

— VIVEK MURTHY, U.S. SURGEON GENERAL

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Bonus Eligibility: New checking must meet the following requirements within the first 60 calendar days of membership – Establish and receive a minimum direct deposit of at least $500 in a single deposit, must register for Online Banking and enroll in eStatements and have a minimum of 10 transactions (not including fees assessed by DFCU) posted to the new checking account. New accounts must be open and cannot be delinquent by more than 30 days at time of bonus payment. Bonus will be deposited into the qualifying checking account no later than 10 business days in the month following the end of the first 60 calendar day period if qualifications are met.

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