Ira A. Fulton Schools of Engineering
Arizona State University

A transformative enterprise

Building our future together

Impacting our community, region and world

Scale: More than **140,000 master learners** across five campuses at the nation's largest public research university.

Top 1% of world's most prestigious universities
–Times Higher Education, 2019

#6 among U.S. universities for tech company hires
– SHL, 2020

#7 in the U.S. for research expenditures
ASU ahead of Princeton and Caltech
– National Science Foundation, 2018

Top 10 in the nation for patents
among universities granted U.S. patents
U.S. National Academy of Inventors and the Intellectual Property Owners Association

JULY 19, 2021
ASU's Novus Innovation Corridor Has Created $1.86B in Economic Impact

MAY 20, 2021
Novus Innovation Corridor Receives LEED-ND Gold Certification

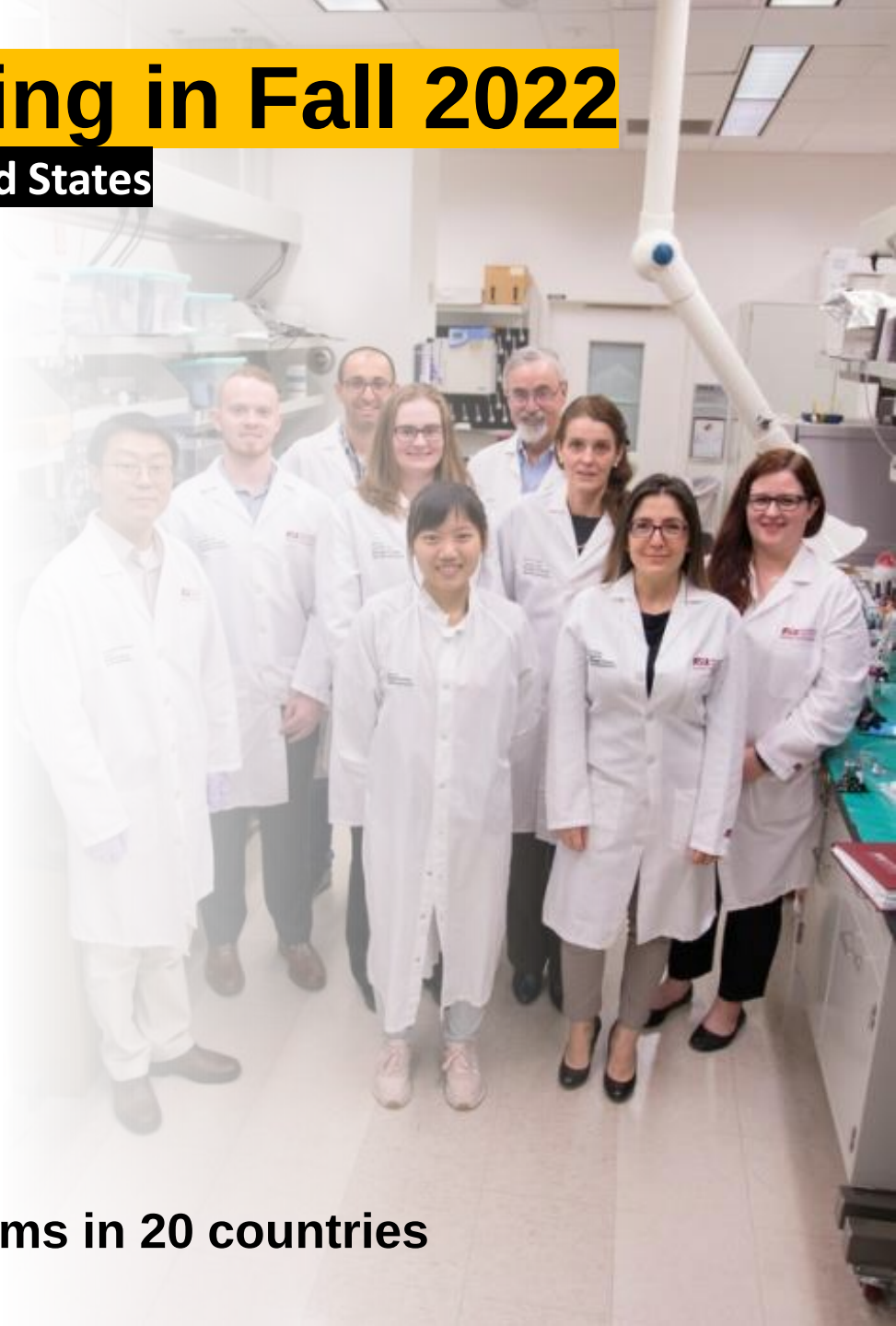
MAY 19, 2021
Best of NAIOP 2020 – Winning Projects

ASU Charter

ASU is a comprehensive public research university, measured not by whom it excludes, but by whom it includes and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves.

Ira A. Fulton Schools of Engineering in Fall 2022

The largest and most comprehensive engineering college in the United States



Interdisciplinary structures

- **7 schools**; 2 campuses + online
- Cross-campus partnerships

Academic programs, enrollments and graduates

- 25 undergraduate degree programs; 50+ graduate programs
- **~33,000 students** (~12,000 online, ~21,000 on-campus)
- ~5,100 graduates across all degree programs in AY2020-2021

Faculty

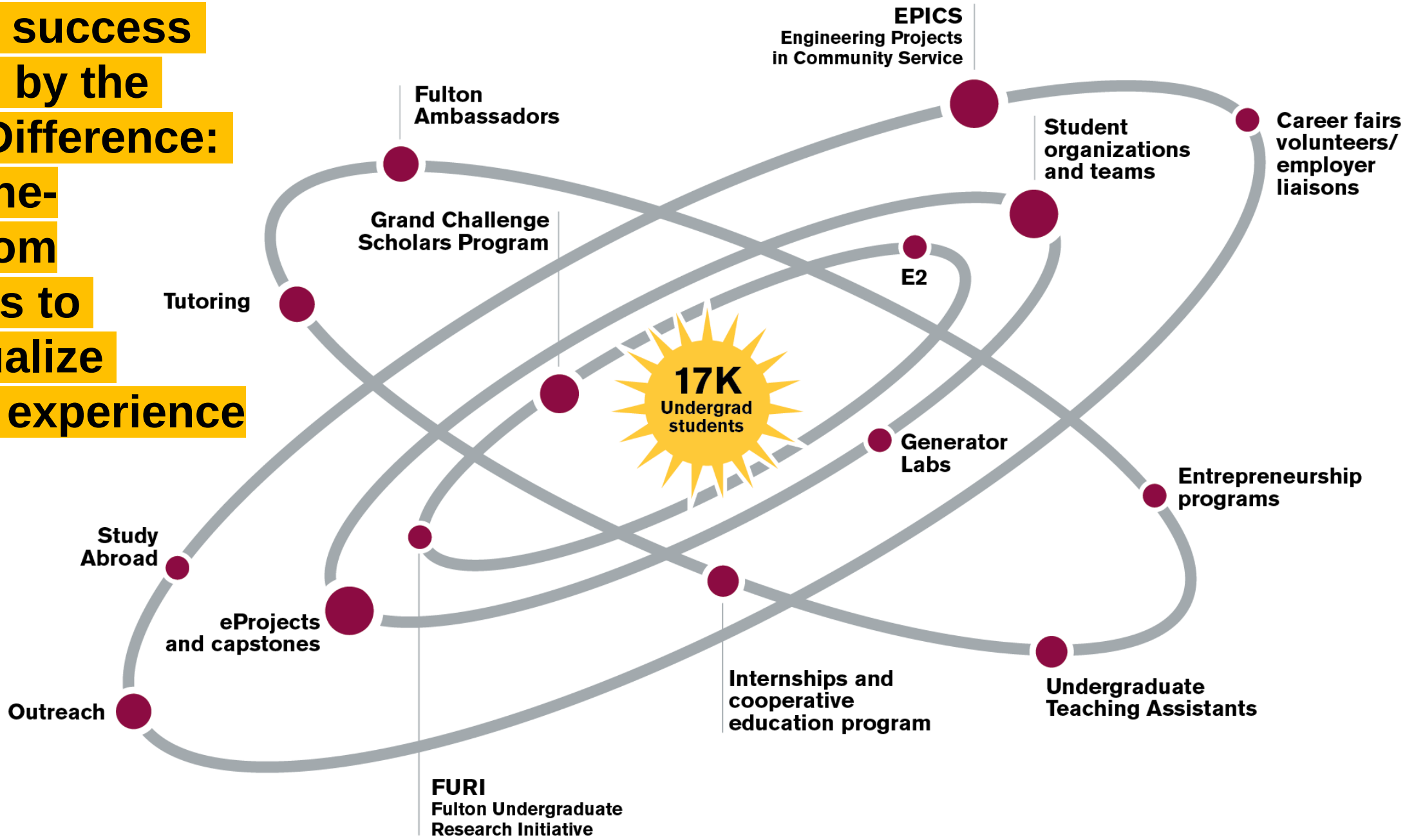
- ~370 tenured/tenure-track faculty; ~100 lecturers and professors of practice
- **31 NSF CAREER awards** over the past three years

Research and innovation: $141M in awards

- Lead two NSF ERC's (partner on one other ERC)
- Lead DHS Center for Accelerating Operational Efficiency
- Lead USDOT University Transportation Center
- Entrepreneurial outputs (national ranking per $10M of research expenditures)
  - #7 for licenses & options; #6 IP disclosures; **#5 for startups**

Global connectivity: PLuS Alliance; capacity-building programs in 20 countries

Student success enabled by the Fulton Difference: out-of-the-classroom activities to individualize student experience



Advancing the Student Experience

Building engineers, inspiring innovators

25+ undergraduate programs
50+ graduate programs
2 campuses+online

Kyle Squires, Dean and Vice Provost

Our transdisciplinary partners at ASU

College of Integrative Sciences and Arts

Global Security Initiative

Julie Ann Wrigley Global Futures Laboratory™

School for the Future of Innovation in Society

School of Arts, Media and Engineering
Herberger Institute for Design and the Arts

School of Earth and Space Exploration
The College of Liberal Arts and Sciences

The Biodesign Institute

W. P. Carey School of Business

Advancing engineering design on a global scale

The Global School

ASU Arizona State University · KING'S College LONDON · UNSW SYDNEY

The Engineering and Design Institute: London (TEDI)
Produce new kinds of graduates and attract new kinds of learners

Ira A. Fulton Schools of Engineering, Arizona State University

School of Biological and Health Systems Engineering

Marco Santello, Director

Biomedical engineering
Robotics and autonomous systems

School of Computing and Augmented Intelligence

Sandeep Gupta, Director

Computer engineering
Computer science
Computer systems engineering
Data science, analytics and engineering
Engineering management
Industrial engineering
Informatics
Robotics and autonomous system
Software engineering

School of Sustainable Engineering and the Built Environment

Ram Pendyala, Director

Civil engineering
Construction engineering
Construction management and technology
Environmental engineering
Sustainable engineering

School for Engineering of Matter, Transport and Energy

Lenore Dai, Director

Aerospace engineering
Biological design
Chemical engineering
Materials science and engineering
Mechanical engineering
Modern energy production and sustainable use
Robotics and autonomous systems
Solar energy engineering and commercialization

School of Electrical, Computer and Energy Engineering

Steve Phillips, Director

Computer engineering
Electrical engineering
Robotics and autonomous systems

School of Manufacturing Systems and Networks

Ann McKenna, Interim Director

Manufacturing engineering
Systems engineering

The Polytechnic School

Ann McKenna, Interim Director

Aeronautical management technology
Engineering
Engineering education systems and design
Environmental and resource management
Graphic information technology
Human systems engineering
Information technology
Robotics and autonomous systems
Technological entrepreneurship and management
User experience

school of sustainable engineering and the built environment

- del e. webb school of construction
- civil, environmental and sustainable engineering
- construction engineering
- environmental engineering

Online Graduate Degree Programs

School of Sustainable Engineering and the Built Environment

Arizona State University

Degree Programs | Students | Research and Outreach | Industry | Giving | DEWSC | About

Sustainable Engineering Online MSE

Online Master of Science in Construction Management and Technology

The Master of Science in construction management and technology degree is designed to meet the growing need for professionals with advanced technical, management and applied research skills in the construction industry. This online construction management degree features two areas of study: facility management and construction management and technology.

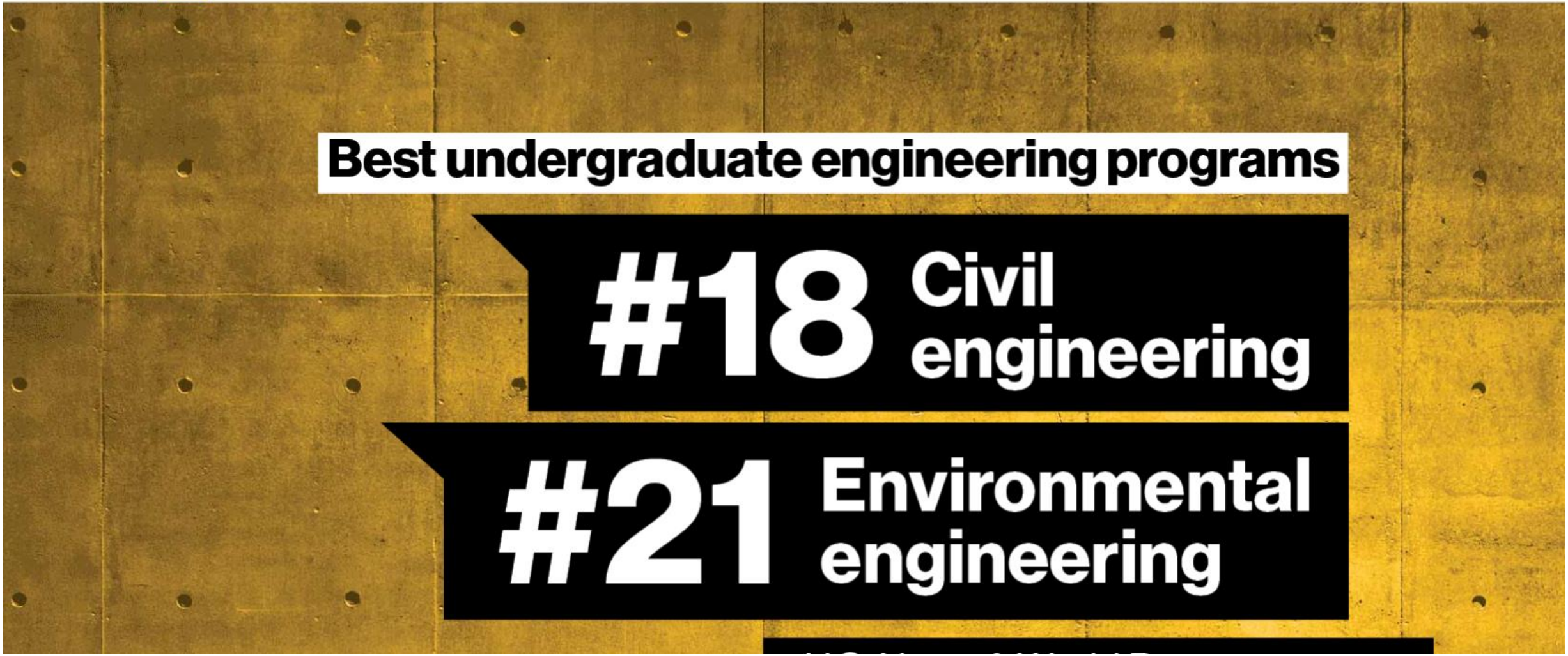
Quick facts

- Next start date: **01/09/2023**
- Total classes: **10**
- Weeks per class: **7.5-15**
- Total credit hours: **30**

Arizona State University

Ira A. Fulton Schools of Engineering

School of Sustainable Engineering and the Built Environment



2022-2023 Graduate Rankings

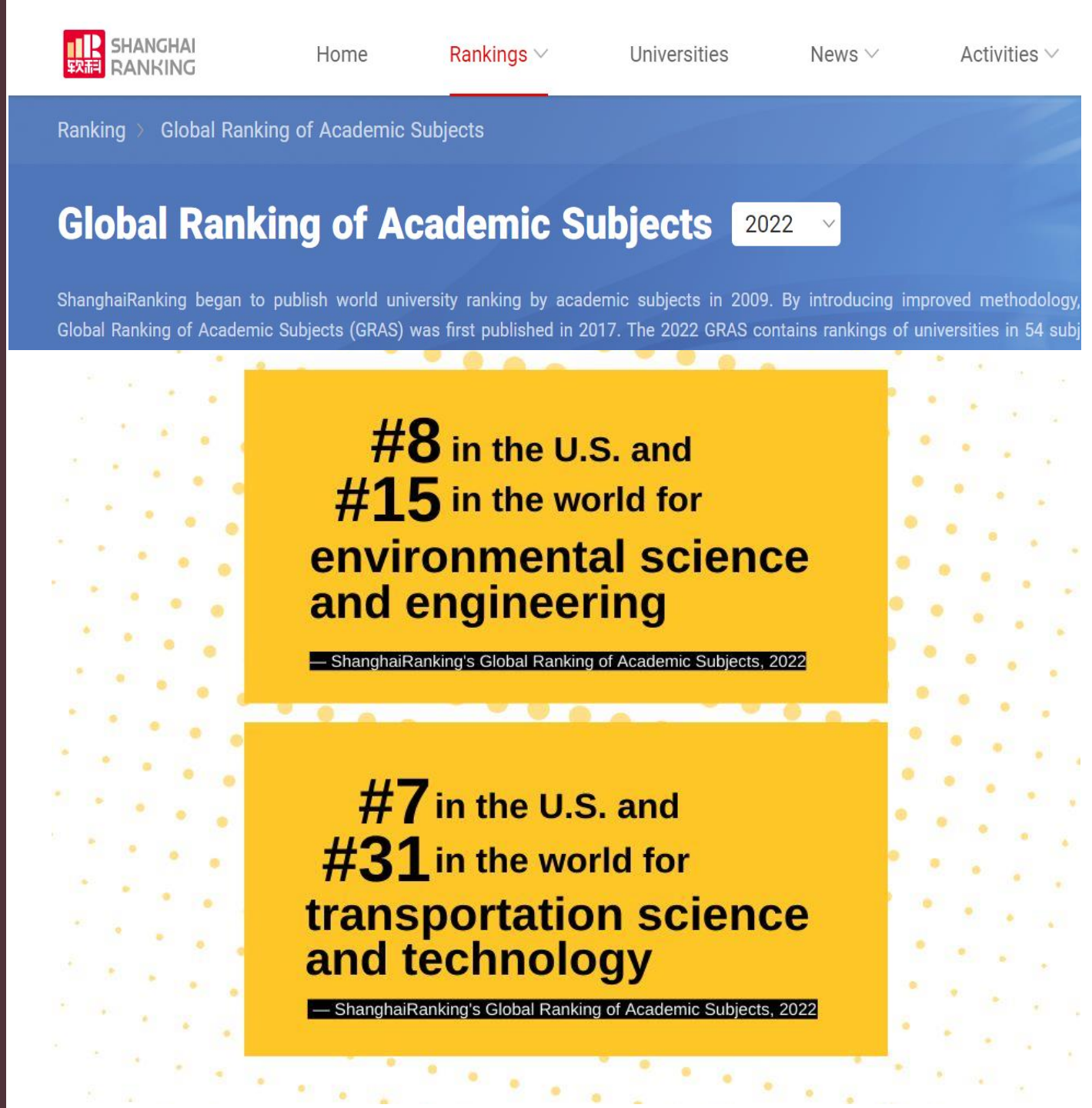
2023 Graduate Rankings Among Public Universities

- Environmental Engineering = 9
- Civil Engineering = 19

Program	2018	2019	2020	2021	2022	2023
Aerospace	31	27	27	22	25	27
Bioengineering	48	45	51	58	53	54
Chemical	49	47	50	47	52	48
Civil	33	30	32	33	26	30
Computer	32	29	34	30	33	27
Electrical	33	32	31	27	31	34
Environmental	22	13	13	15	20	16
Industrial	24	17	18	18	18	18
Materials	39	37	41	36	40	35
Mechanical	52	48	43	40	41	41

Source: US News and World Report

2022-2023 Shanghai Global Ranking of Programs



SSEBE by the Numbers

Enrollment in Fall 2022

Undergraduate (1462)

Civil Engineering: 612
Environmental Engineering: 195
Construction Engineering: 88
Construction Mgt & Tech: 567

Graduate (MS + PhD) (808)

Civil Engineering: 179
Environmental Engineering: 7
Construction Engineering: 8
Construction Mgt & Tech: 614

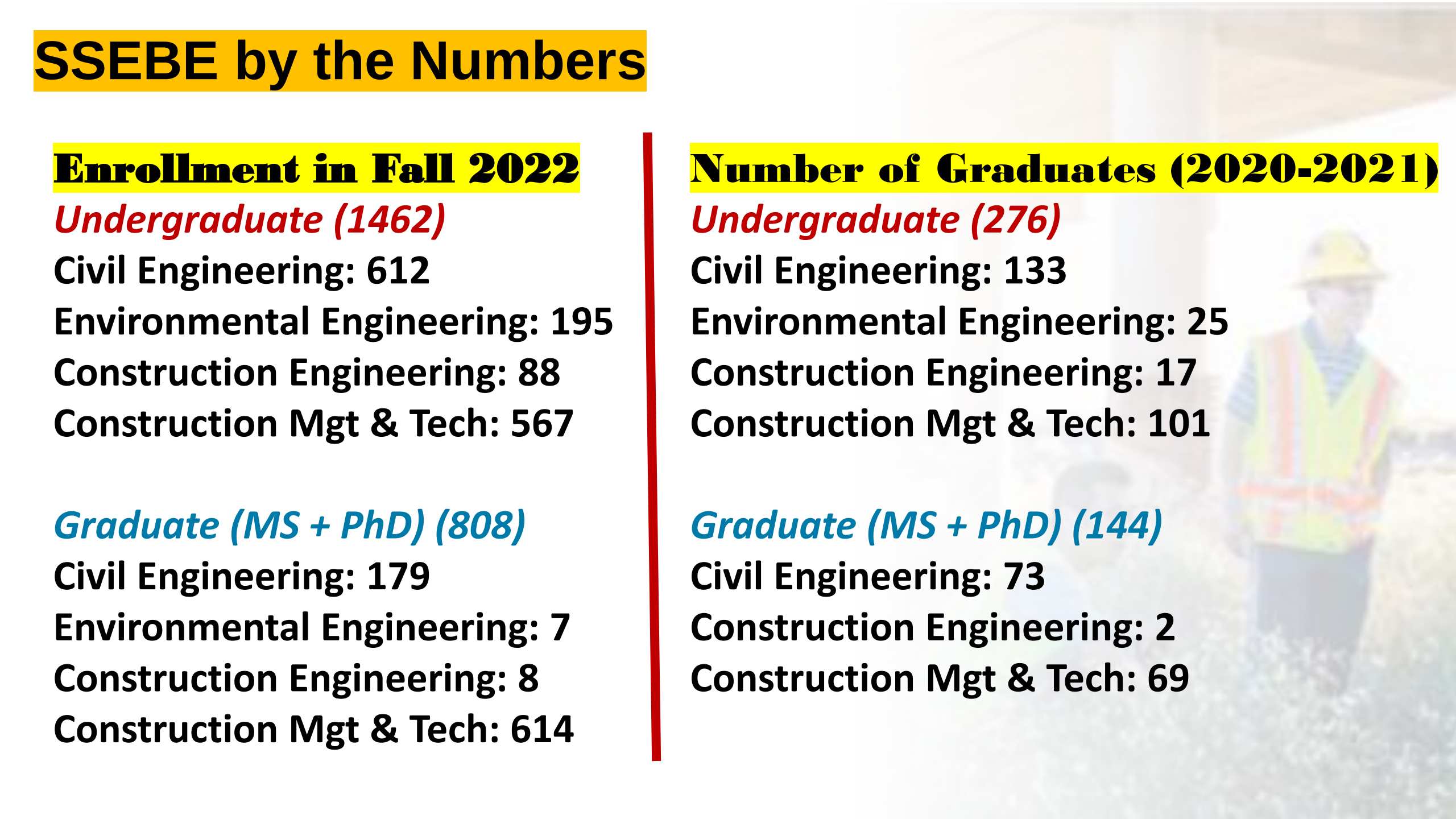
Number of Graduates (2020-2021)

Undergraduate (276)

Civil Engineering: 133
Environmental Engineering: 25
Construction Engineering: 17
Construction Mgt & Tech: 101

Graduate (MS + PhD) (144)

Civil Engineering: 73
Construction Engineering: 2
Construction Mgt & Tech: 69



Award Winning Faculty

ASU's Ariaratnam becomes Distinguished Member of ASCE

Nation's oldest engineering society recognizes professionals who have made significant contributions to the civil engineering field

by Monica Williams | Oct 7, 2022 | Faculty, Features

Samuel Ariaratnam is the Beavers-Ames Chair in Heavy Construction for the Del E. Webb School of Construction at Arizona State University. Photographer: Monica Williams/ASU

Kamil Kaloush Named FORTA Professor of Pavement Engineering

Kamil Kaloush, a professor in the Ira A. Fulton Schools of Engineering at ASU, will be able to broaden his academic and research endeavors with support that comes with his new position as the FORTA Professor of Pavement Engineering. Kaloush is pictured speaking at an IRF event.

Award Winning Faculty

Hasan Ozer announced as 2022 winner of the Wilber S. Smith Award

3/17/2022 | 2 MIN READ

The Transportation and Development Institute (T&DI) of ASCE is pleased to announce Hasan Ozer, Ph.D., A.M. ASCE, of Arizona State University, as the 2022 winner of the Wilbur S. Smith Award. The award was established to honor contributions to the enhancement of the role of the civil engineer in highway engineering.

Dr. Ozer is an Associate Professor at Arizona State University's School of Sustainable Engineering and the Built Environment. He is also the Director of the National Center of Excellence on Smart Innovations and Founding Director of the Southwest Pavement Technology Program at ASU.

ASCE T&DI
@ASCE_TDI

Another shout out to Dr. Hasan Ozer of @ASUEngineering at @ASU for winning the 2022 Wilbur S. Smith Award! #ICTD22 @ASCETweets

Southwest Pavement Technology Program

Who Are We?

The Southwest Pavement Technology Program is a collaborative platform founded at Arizona State University on June, 2021 with the support from founding industrial and local government agency members.

The initiative is organized to assist stakeholders' pavement operation through developing and adapting cost-effective and sustainable pavement technologies as well as providing a talented and well-trained workforce.

Southwest Pavement is aiming to build strategic alliances between university, government and industry partners through unbiased and trusted research institutions.

Membership Categories

- Core Member (Platinum, Gold, Silver)
- Industry Member
- Affiliate Member
- Agency Affiliate

Our Vision

Our vision is to be the hub for advancing and facilitating pavement research and training activities in the region. The three pillars of our organization are research, workforce training, and communication hub.

Research Facilities

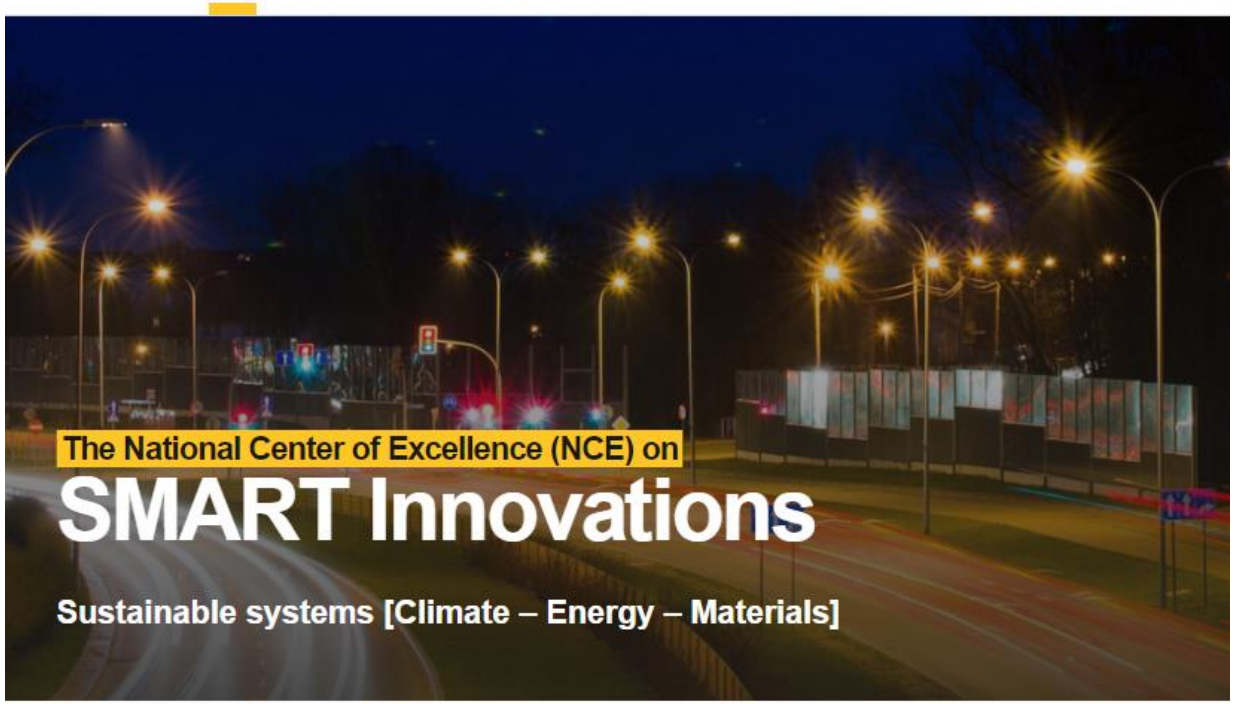
ASU's AASHTO accredited advanced pavement laboratories have gone through a major $500,000 upgrade with support from ASU and generous gifts from our members.

ASU's pavement laboratory upgraded to serve for the needs of our region

Visit our lab at the open house

- Superpave and balanced mix design
- Cracking, rutting, and many other HMA and cold recycled mix tests
- Modified and unmodified binder rheology
- Provide workforce training and education
- AASHTO accredited re:source (formerly AMRL)

Search for ASU pavement lab on Youtube



The National Center of Excellence (NCE) on SMART Innovations provides climate and energy system solutions based on sound science and engineering to governments and industries around the globe.

Our research seeks to quantify complex climate-energy system interactions resulting from all phases of a product or technology's life cycle and to develop cost effective solutions to reduce any negative impacts.

Smart solutions for industry and government

Unlike traditional research programs, the NCE at ASU is a transdisciplinary cluster of researchers and scholars who work together on solutions that encompass technical, social, economic and regulatory factors. The NCE includes participants from the School of Sustainability and Ira A. Fulton Schools of Engineering.

Structural Mechanics & Infrastructure Materials Lab

The Structural Mechanics Laboratory (SML) is a facility for small scale and full-scale structural testing, model testing, stress analysis, and material property determination of various materials, systems, composites, and structures. A range of large to small scale experiments on tension, flexural, compression, and fracture tests are conducted using closed-loop uniaxial and biaxial test systems. Analytical simulations, modeling, and experimental verifications are also conducted. These test machines which are rated from 5 to 4 MN (1-90 kips) in axial force capacity are operated using digital controller technology. Instrumentation for displacement and strain measurement with non-contact and Digital Image Correlation (DIC) in addition to multichannel data acquisition and data processing software is available. A strong floor is available for full-scale structural testing. The laboratory is also equipped with environmental chambers for testing specimens from 15°F to 300°F. Experiments such as fracture, creep, fatigue, and cyclic loading are being conducted on various materials and structures.

Neithalath awarded $2 million to recast concrete construction

Posted by Gary Werner | Oct 15, 2020 | Faculty, Features

ASU Engineering Professor Narayanan Neithalath and four colleagues have been granted $2 million from the National Science Foundation to foster collaboration around 3D concrete printing research across more than a dozen countries. 3D concrete printing generated these examples shown with Sooraj Nair, a doctoral student in Neithalath's lab group, and the technique offers the potential to change the nature of construction.

Photo courtesy of Narayanan Neithalath

ASU News

Arizona State University

Explore | Expert Q&A | Video series | Podcasts | Magazine | Books and essays

Speeding up construction

Tempe campus

October 18, 2019

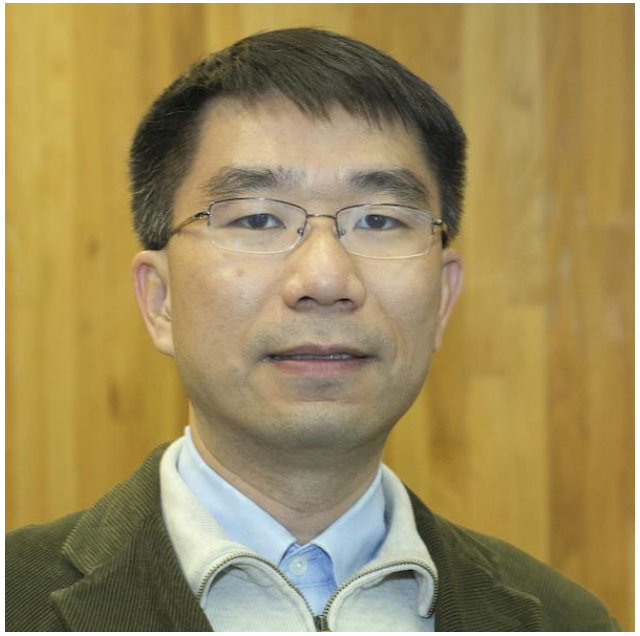
ASU engineer has solution to long, expensive projects: Fiber-reinforced concrete

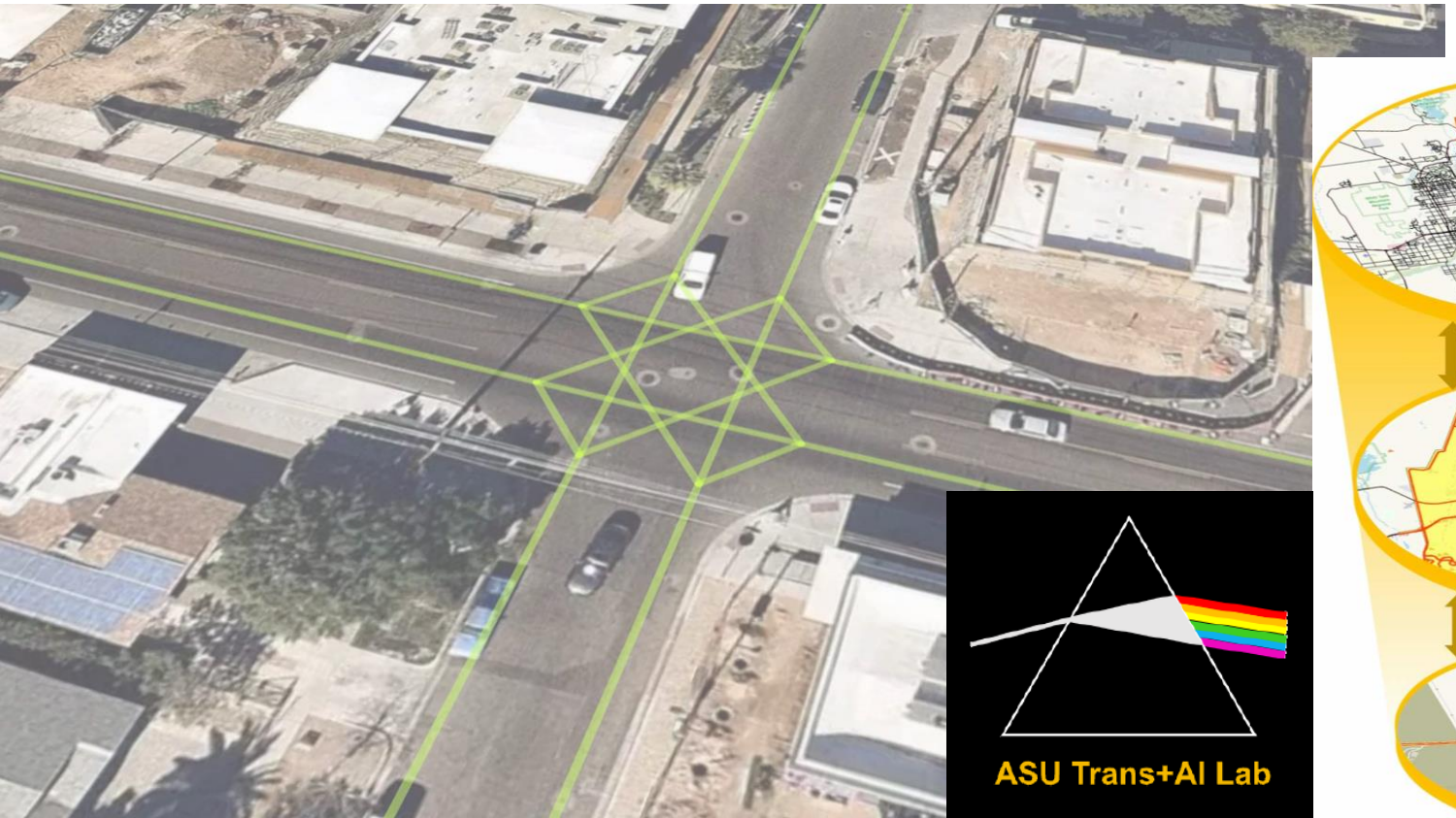
Barzin Mobasher, professor in SSEBE of the Ira A. Fulton Schools of Engineering, is researching fiber-enforced concrete with the goal of saving time and money on construction projects. Photo by Charlie Leight/ASU Now

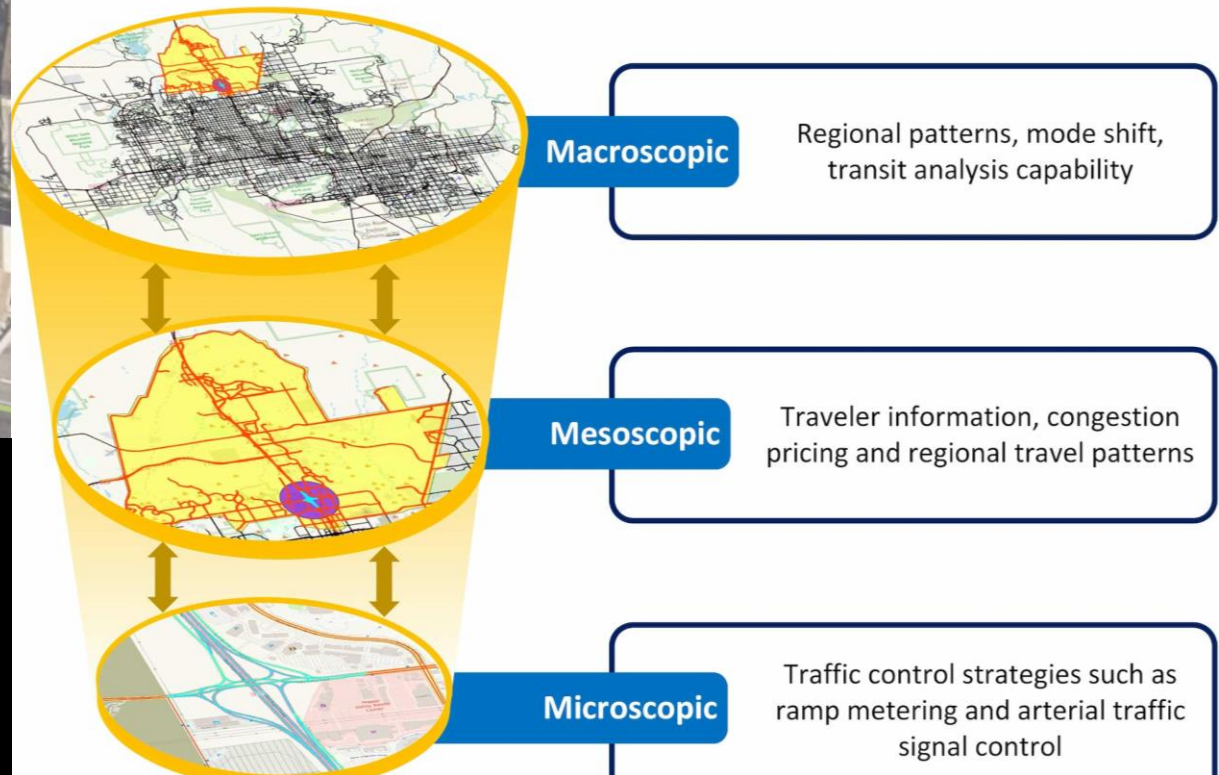
ASU Trans+AI Lab

ASU researcher Xuesong "Simon" Zhou creates an open-source mapping system to streamline transportation modeling research

He was recently elected to join the executive board of Zephyr, an organization dedicated to advancing the science of transportation modeling in an open and collaborative ecosystem.

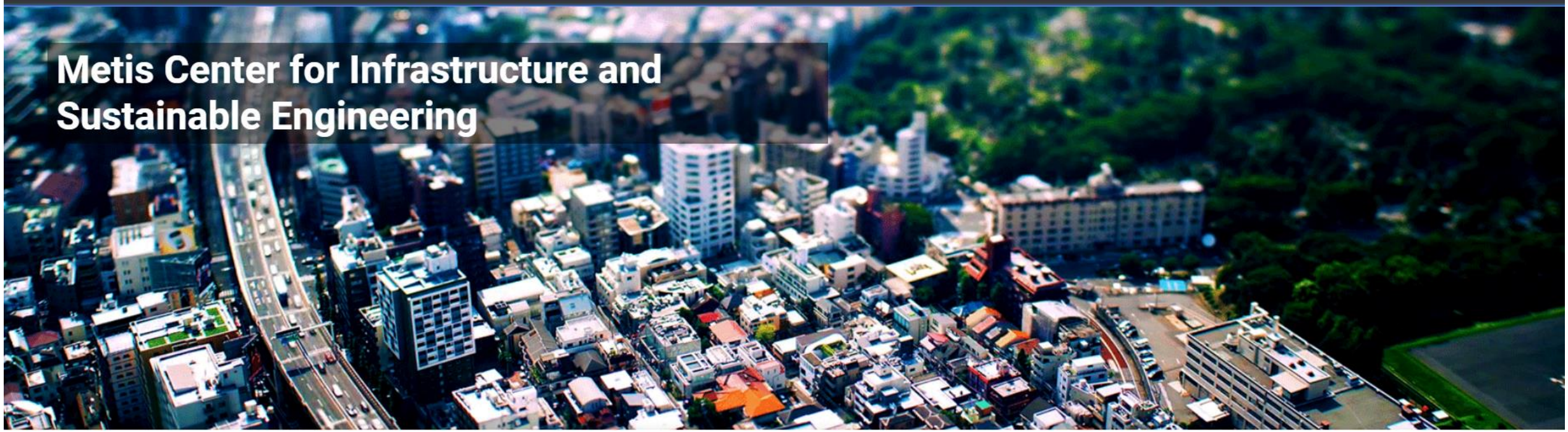






Washington Post

Why climate change is about to make your bad commute worse



Metis Center for Infrastructure and Sustainable Engineering

The Metis Center for Infrastructure and Sustainable Engineering seeks to provide the basis for understanding, designing and managing the complex integrated built/human/natural systems that increasingly characterize our planet in the Anthropocene – the Age of Humans. To this end, we combine research, teaching, outreach and public service in an effort to learn how engineered and built systems are integrated with natural and human systems.

The mission of Metis is to reshape how we design and build infrastructure and prepare engineers in the Anthropocene. The Anthropocene will be defined by rapid technological, environmental and social change, which will raise challenges for current infrastructure and engineering to meet changing needs. To build more resilient and sustainable systems that are capable of adapting to change in the 21st century and beyond, we will need to fundamentally rethink how and why we deploy and use infrastructure and train engineers. The Metis center seeks to establish an array of competencies to be able to respond to rapidly changing environments, technologies and services, for a future marked by complexity and uncertainty.

Arizona State University

Georgia Tech

UNIVERSITY of WASHINGTON

USF UNIVERSITY OF SOUTH FLORIDA

TOMNET

Teaching Old Models New Tricks

US Department of Transportation

Tier 1 University Transportation Center

Advanced Data Analytics for Sustainable Transportation

http://tomnet-utc.engineering.asu.edu

New Projects

Mobility Analysis Workflow (MAW): An Accessible, Interoperable, and Reproducible Container System for Processing Raw Mobile Data
University of Washington

An Empirical Assessment of the Role of Attitudes and Identification in Safety Research
University of South Florida

The Stability of Transport-Related Attitudes Over Time: A Case Study During COVID-19
Arizona State University

What Is the New Normal? An Analysis of Post-COVID-19 Commute and Work Patterns
Georgia Institute of Technology

The Influence of Mode Use on Level of Satisfaction with Daily Travel Routine: A Focus on Automobile Driving in the United States
Arizona State University

Latest Publications

Commuting in America in 2020 and Beyond: Observations, Planning Challenges, and Implications for the American Community Survey Transportation Questions
Policy Brief

The Stability of Transport-Related Attitudes Over Time: A Case Study During COVID-19
Project Report

An Exploratory Analysis to Estimate the Value of Free Charging Bundle in Electric Vehicle Purchases
Project Report

Attitudes Towards Emerging Mobility Options and Technologies – Phase 3: Survey Data Compilation and Analysis for Phoenix, AZ
Project Report

Ira A. Fulton Schools of Engineering

Center for Efficient Vehicles and Sustainable Transportation Systems

EVSTS research center wins 5-year funding from National Science Foundation for phase two- read the press release here.

Member login

Global Institute of Sustainability and Innovation

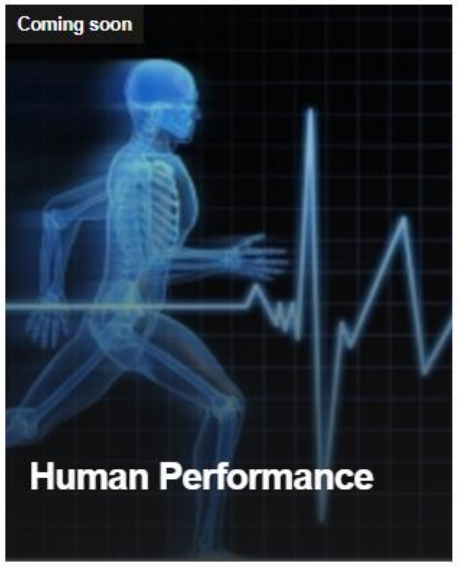
Arizona State University

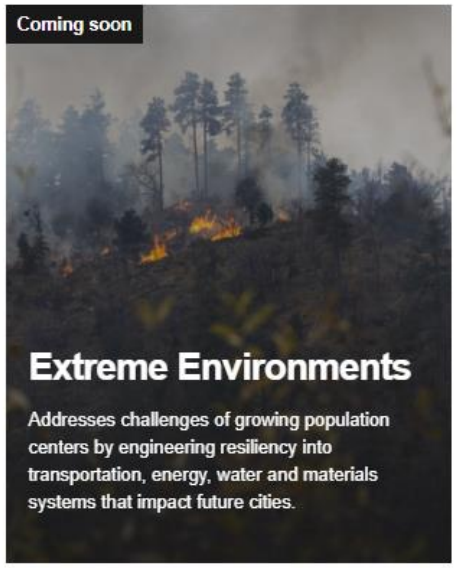
Healthy Urban Environments

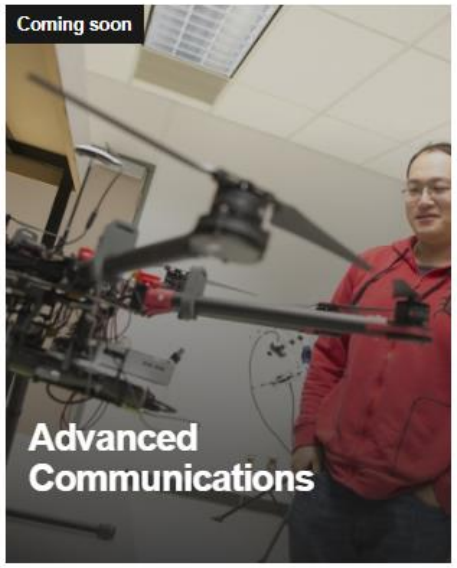
Healthy Urban Environments is a collaborative initiative which combines the power of Arizona State University's entrepreneurship, research and innovation infrastructure with partnership, support and collaboration from Maricopa County and its communities.

ASU Arizona State University **New Economy Initiative**

Science and Technology Centers | Workforce Development | Education | Partners | News | Get Involved







Proposal Submission Deadline: Friday, December 16, 2022

ASU Arizona State University
Research Development

2022 Fall New Economy Initiative Science and Technology Center Funding Opportunities

Fulton Schools of Engineering
November 09, 2022

We are excited to present the Fall 2022 Funding Opportunity Announcement (FOA) for the New Economy Initiative Science and Technology Centers (STC).

These FOAs are soliciting proposals for research and development projects that are collaborations between ASU researchers, industry partners and government stakeholders.

ASU Transportation

Developing Partnerships and Solutions for A Better Transportation Future

Arizona State University

ASU Home ▾ My ASU

School of Sustainability | Real World Learning

About ▾ Bringing in the World ▾ Visiting the World ▾ Simulating the World ▾ Engagi

ASU research helps guide transportation policy

View Source | January 29, 2014

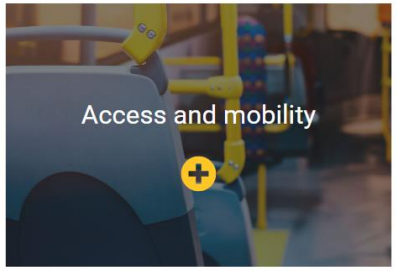
Arizona State University's robust and expanding range of transportation research and studies was reflected recently in the contributions of faculty members and students to one of the major international gatherings of transportation experts.

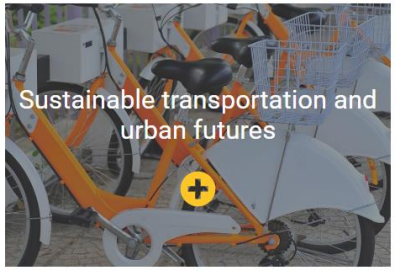
Photo by: Shutterstock.com

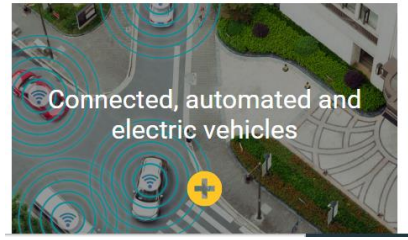
An ASU contingent of more than 30 faculty members and students presented their research in more than 40 workshops and sessions at the Transportation Research Board (TRB) 93rd

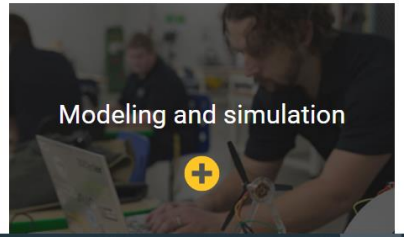
Transportation Research at Arizona State University

ASU is a transdisciplinary hub for innovative and integrative transportation research and education. Our work contributes to the development of smart, sustainable, and socially equitable transportation systems. These systems leverage technology to foster resilient communities and high quality of life, locally and globally. We invite you to explore our many research initiatives, degree programs, expert faculty, and exciting new projects.









Major Research Sponsors

- Arizona Department of Transportation
- Maricopa Association of Governments
- Maricopa County Department of Transportation
- Valley Metro
- National Cooperative Highway Research Program
- Transit Cooperative Research Program (TCRP)
- Airport Cooperative Research Program (ACRP)
- National Science Foundation
- USDOT, Federal Highway Administration/Federal Transit Administration
- USDOT, Research and Innovative Technology Administration
- USDOT, Intelligent Transportation Systems Joint Program Office
- National Science Foundation (NSF)
- US Department of Homeland Security (DHS)
- US Department of Energy (DOE)
- Southern California Association of Governments
- New York Metropolitan Transportation Council

The Transportation Education Enterprise

Transportation courses and educational offerings housed in multiple units

Courses in a multitude of domains

- Traffic engineering, operations, and control
- Transportation systems modeling and simulation
- Highway design, pavement design, and smart materials
- Transportation safety
- Transportation network optimization and modeling
- Public transportation planning and design
- Energy and environmental aspects of transportation
- Transportation planning and policy analysis
- Vehicular technologies, sensors, and autonomous systems

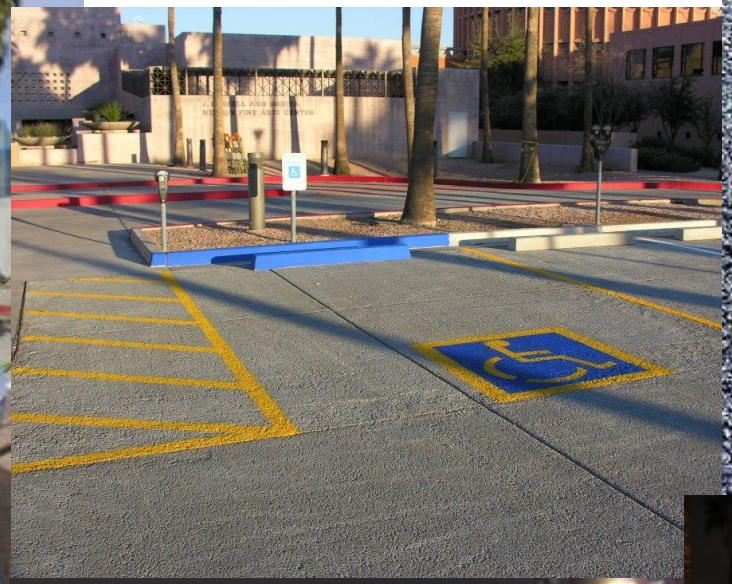
Strive to provide students multi-disciplinary educational experience

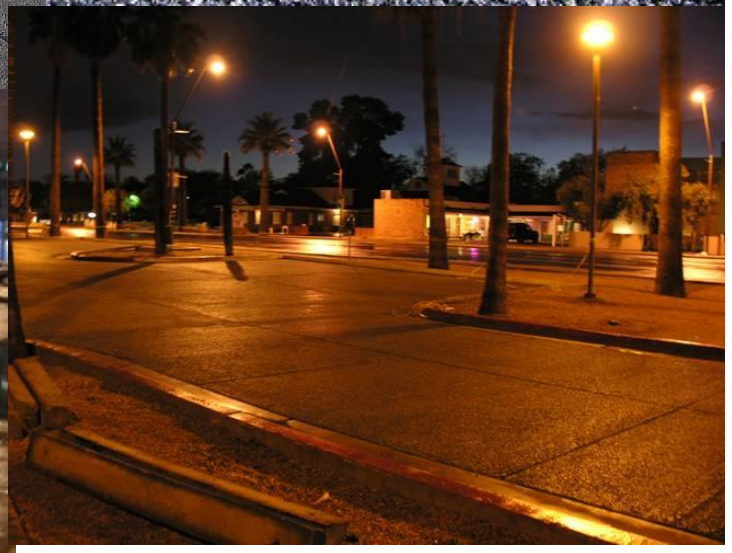
The Transportation Systems Certificate

- Graduate Certificate in Transportation Systems
- Students complete 15 credits of coursework across three different programs/schools and complete a capstone project
- Developing flexible **Online Master's Degree in Transportation**

Students Learn in the Real-World

Pervious / Porous Parking Lots





Creating a diverse engineering environment at ASU

Arizona State University is "…measured not by whom we exclude, but rather by whom we include and how they succeed." This statement not only is part of our identity, it is part of the commitment of the Ira A. Fulton Schools of Engineering toward creating an environment that is inclusive and advances a diverse engineering workforce of the future.

At ASU and the Fulton Schools, women can expect to thrive and succeed in graduate school with amazing mentoring, opportunities to excel and be recognized as scholars, and unique engagement in transdisciplinary research.

We Welcome Your Engagement

Ira A. Fulton Schools of Engineering
School of Sustainable Engineering and the Built Environment

Degree Programs | Students | Research and Outreach | Industry | Giving | DEWSC | About

Join FOCE²

Please accept our invitation to join the **Friends of Civil and Environmental Engineering (FOCE²)** at Arizona State University in our mission to support educational programs of the civil, environmental and sustainable engineering (CESE) program.

Your membership donation and participation in FOCE² will enable the civil engineering program to retain and motivate talented young students to achieve success and further our profession.

FOCE² support helps students start and continue with their dream by offsetting expenses and providing career development experiences.

FOCE² supports a variety of activities that encourage our engineers, including:

- FE Exam Fee reimbursement program
- Travel to professional meetings
- Mixers to help students make industry connections
- Student organizations' projects, competitions and outreach in the community
- Commencement luncheon honoring new graduates

Registration options

Learn More

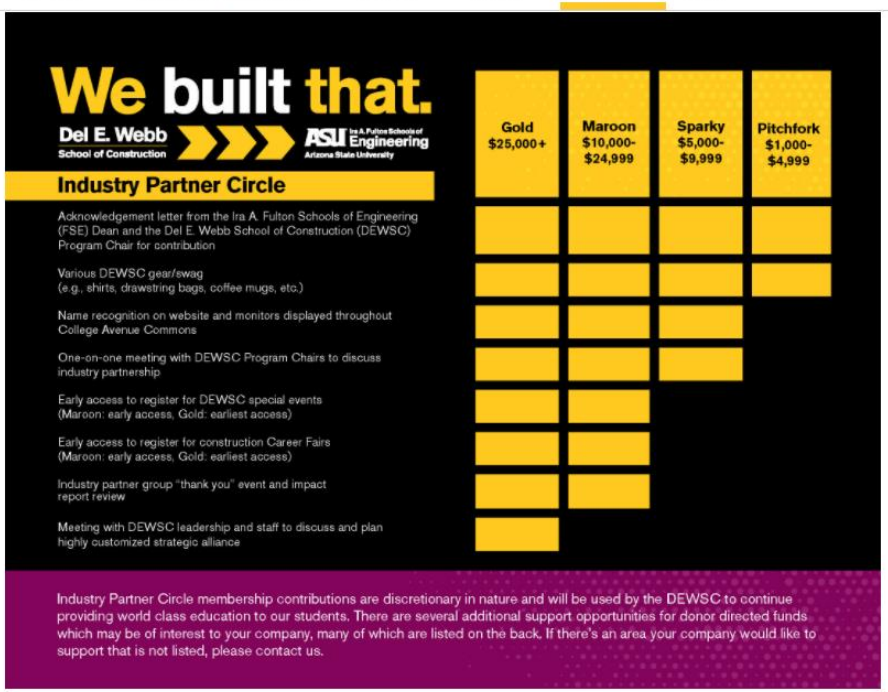
For more information about FOCE² contact Judy Reedy at 480-965-1713 or

Download the brochure

Ira A. Fulton Schools of Engineering
School of Sustainable Engineering and the Built Environment

Degree Programs | Students | Research and Outreach | Industry | Giving | DEWSC | About

- DEWSC home
- Construction programs
- Faculty
- Custom learning environment
- Golf tournament
- Safety Week
- Construction in Indian Country
- OSHA Education Center at ASU
- Give to DEWSC
- Industry Partner Circle
- Alumni Connection
- 2021 Alumni Yearbook

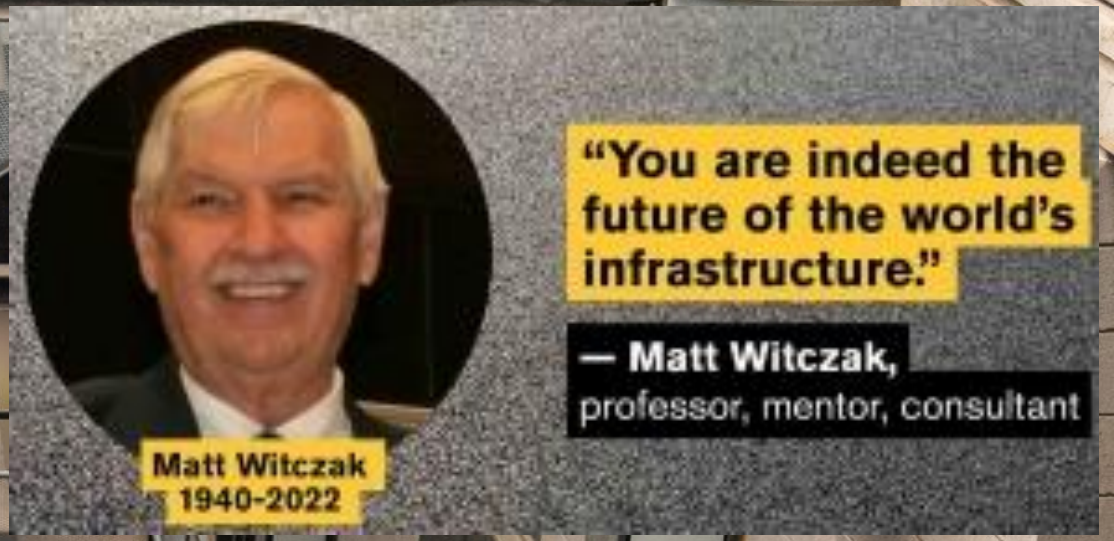


Join the Del E. Webb Industry Partner Circle!

Join with a credit card **Complete a form and send payment**

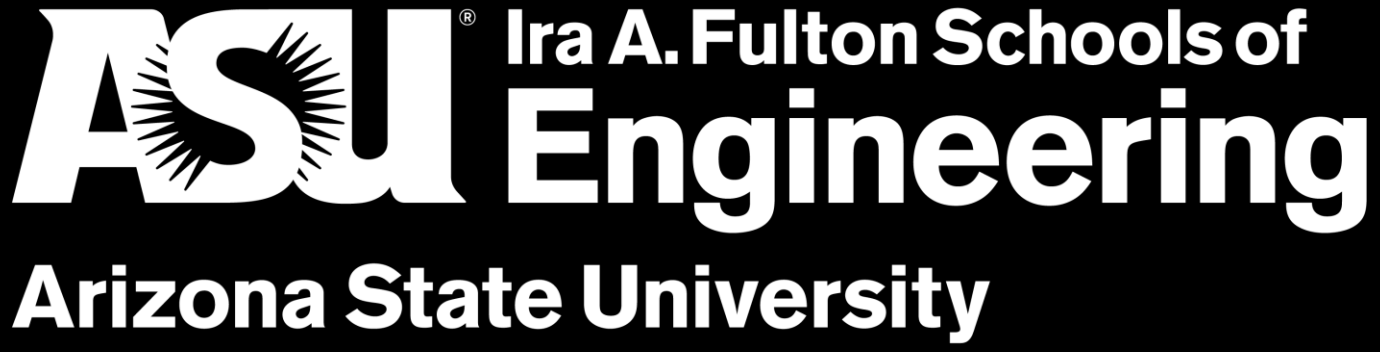
Thank you!

ram.pendyala@asu.edu



Arizona State University


school of
sustainable engineering
and the built environment
GRADUATE
AHEAD
http://ssebe.engineering.asu.edu



engineering.asu.edu