

ENGINEERED FOR  
**WHAT'S NEXT.**



Cullen College of Engineering  
UNIVERSITY OF HOUSTON



# UH ENGINEERING

**BY THE NUMBERS**

# UH ENGINEERING BY THE NUMBERS



**NAMED BEST ENGINEERING  
SCHOOL FOR 2022 (#66)**

*\*(Source: U.S. News & World Report)*

**100%  
ABET ACCREDITED**

Cullen College  
of Engineering

579

# UH ENGINEERING BY THE NUMBERS



**1,323** graduate students + **2,899** undergraduate students

.....

## INCOMING STUDENTS

are automatically accepted into their intended engineering major

# UH ENGINEERING BY THE NUMBERS

# 144

total faculty

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# 16



National Academy of Engineering Faculty Members

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# 29

research centers,  
institutes and industry  
consortiums

# \$40M+

in research  
expenditures

# 120+

active laboratories

# UH ENGINEERING BY THE NUMBERS

## STUDENT DEMOGRAPHICS



● 5% | AFRICAN AMERICAN

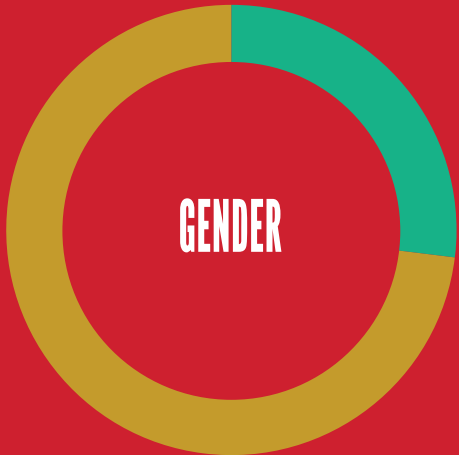
● 19.7% | ASIAN AMERICAN

● 28% | HISPANIC

● 23.8% | INTERNATIONAL

● 4.5% | OTHER

● 19.1% | WHITE



● 27.2% | FEMALE

● 72.8% | MALE



# UH ENGINEERING BY THE NUMBERS



70 %

## GRADUATION RATE

First year retention rates are very high,  
coming in at 89%



# UH ENGINEERING BY THE NUMBERS

**LOCATED IN THE ENERGY CAPITAL OF THE WORLD,  
UH ENGINEERING IS JUST A 10-MINUTE DRIVE FROM:**



The **TEXAS MEDICAL CENTER**,  
the largest medical complex in the world



The **HOUSTON MUSEUM DISTRICT**,  
one of the nation's largest museum districts



The **HOUSTON THEATER DISTRICT**,  
a 17-block area in downtown Houston filled  
with magnificent performing arts theaters,  
including the Houston Grand Opera,  
the Houston Symphony Orchestra, the  
Houston Ballet and the Alley Theatre



**MANY FORTUNE 500 COMPANIES HEADQUARTERED IN THE BAYOU CITY**



# ABOUT

## UH ENGINEERING



# ABOUT UH ENGINEERING

7

DEPARTMENTS

**Biomedical // Chemical & Biomolecular // Civil & Environmental  
Electrical & Computer // Industrial // Mechanical // Petroleum**

**ABOUT UH ENGINEERING**

# EXPANDING PROGRAMS

**SUBSEA**

.....

**GEOSENSING SYSTEMS ENGINEERING AND SCIENCES**

.....

**SPACE ARCHITECTURE**

.....

**DATA SCIENCE**

# ABOUT UH ENGINEERING



## CORE RESEARCH THRUST AREAS

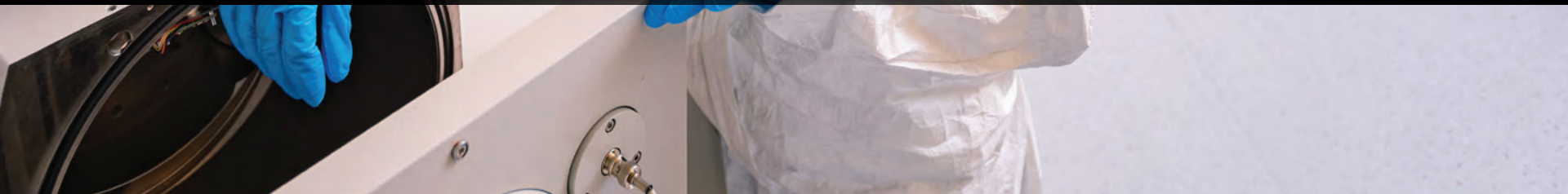
ENERGY

BIOMEDICAL ENGINEERING

MATERIALS

SUSTAINABILITY

COMPLEX SYSTEMS



# ABOUT UH ENGINEERING

## TOP-RANKED GRADUATE PROGRAMS



Graduate programs in civil, mechanical, computer, electrical and chemical earned the status of Best Engineering Programs of 2022 by U.S. NEWS & WORLD REPORT

**#9 Best Petroleum Engineering Program**



**#33 Best Chemical Engineering Program**



**#54 Best Industrial Engineering Program**



**#65 Best Civil Engineering Program**



**#65 Best Environmental Engineering Program**



**#70 Best Biomedical Engineering Program**



**#77 Best Electrical Engineering Program**



**#83 Best Materials Engineering Program**



**#83 Best Mechanical Engineering Program**

# ABOUT UH ENGINEERING



## RAPIDLY EXPANDING ONLINE GRADUATE PROGRAMS

Students who elect to pursue a fully-online degree are eligible for significantly reduced tuition fees through UH Extend.

Ask us to learn more!

Hy-flex, asynchronous and synchronous online learning are also available.



[Onlinelearning.egr.uh.edu](https://onlinelearning.egr.uh.edu)



# ABOUT UH ENGINEERING

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NSF CAREER  
AWARDS

## **MEGAN ROBERTSON (ChBE)**

Developing plastics from plants.

## **JIMING BAO (ECE)**

Examining the optical properties of graphene, one-atom-thick sheets of carbon.

## **JACINTA CONRAD (ChBE)**

Developing surfaces that limit bacteria motility.

## **JEFFREY RIMER (ChBE)**

Improving zeolites, a class of catalysts used in the petroleum and chemical industries.

## **DEBORA RODRIGUES (CEE)**

Studying the environmental impact of nano-scale materials that utilize graphene.

## **LARS GRABOW (ChBE)**

Designing a novel chemical looping process for methane coupling using hydrogen storage materials.

## **WEI-CHUAN SHIH (ECE)**

Developing a new method to rapidly identify and profile bacteria.

## **GILA STEIN (ChBE)**

Characterizing and improve polymer-based solar cells.

## **HALEH ARDEBILI (ME)**

Developing more effective stretchable, flexible batteries.

## **ROSE FAGHIH (ECE)**

Developing a MINDWATCH proposal for adapting smartwatches to improve distance learning and health.

## **ZHU HAN (ECE)**

Creating "cognitive radio networks" to identify quiet frequencies and utilize them for data transmission.

## **STANKO BRANKOVIC (ECE)**

Investigating how the size of a material effects its behavior.

## **BORA GENCTURK (CEE)**

Increasing resiliency and sustainability of reinforced concrete against aging and seismic hazards through novel materials.

## **CUNJIANG YU (ME)**

Increasing resiliency and sustainability Developing 3D electronics manufacturing process.

## **AARON BECKER (ECE)**

Manipulating large swarms of micro-robots to perform specific tasks.

## **ZHENG CHEN (ME)**

Creating artificial muscle and tendons for dexterous, compliant and affordable prostheses that more closely mimic human muscles.

## **JEREMY PALMER (ChBE)**

Controlling crystal nucleation in liquids to transform applications in pharmaceutical processing and materials design.

## **SHEEREEN MAJD (BME)**

Tailoring nanoparticle drug carriers to improve drug delivery.

## **DAVID MAYERICH (ECE)**

Developing a software platform to produce searchable atlases of high-resolution of 3D images.

## **MEHMET ORMAN (ChBE)**

Studying Persister Cells - those that go dormant and then become tolerant to extraordinary levels of antibiotics.

## **KYUNG JAE LEE (PE)**

Contributing to the enhancement and diversification of the domestic supply of lithium.

## **SHAILENDRA JOSHI (ME)**

Studying mechanics of recyclable thermoset polymers.

## **DEVIN SHAFFER (CEE)**

Developing better filtration methods via new porous materials.

## **JINSOOK ROH (BME)**

Developing a rehabilitation model to study the cause of neural impairment in stroke survivors.

# ABOUT UH ENGINEERING

# HURRI

Hurricane Resilience Research Institute

The new Hurricane Resilience Research Institute (HuRRI), a multi-institution research center led by UH Cullen College engineer Hanadi Rifai will focus on helping the Gulf coast do better at preparing for and mitigating the damage and loss of lives from hurricanes and other severe storms.





# ABOUT UH ENGINEERING



The Building Reliable Advances and Innovation in Neurotechnology (BRAIN) Center is an Industry/University Collaborative Research Center at Arizona State University (ASU) and the University of Houston (UH). The BRAIN Center will develop safe, effective and affordable personalized neurotechnologies for diagnostics, restoration, enhancement, and rehabilitation of sensory, motor, affective and cognitive functions.

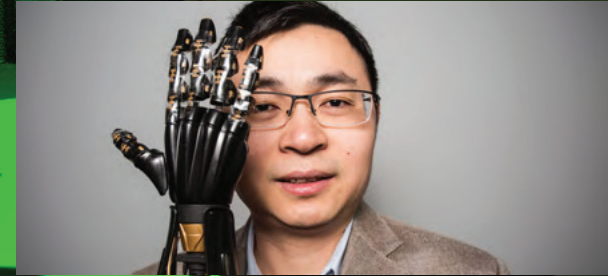
# ABOUT UH ENGINEERING



## THE NATIONAL CENTER FOR AIRBORNE LASER MAPPING (NCALM)

The National Center for Airborne Laser Mapping (NCALM) provides research-quality airborne light detection and ranging (lidar) observations to the scientific community, and trains and educates graduate students with knowledge of airborne mapping to meet the needs of academic institutions, government agencies, and private industry. NCALM is based at the University of Houston and is operated in partnership with the University of California, Berkeley. The center is associated with the multi-disciplinary Geosensing Systems Engineering & Sciences graduate program at the University of Houston.

# ABOUT UH ENGINEERING



## ADVANCED MANUFACTURING INSTITUTE (AMI)

The Advanced Manufacturing Institute (AMI) supports the transition of lab-scale technology to fully-fledged manufactured products for the market. AMI focuses on scaling up technologies in the areas of superconductor wire manufacturing, flexible electronics, chemical processes, polymers and automation, and bio manufacturing. AMI has been awarded more than \$25 million for its research programs, including \$3 million from industry sponsors, \$3.5 million from the State of Texas Emerging Technology Fund and \$5.6 million from the Advanced Manufacturing Office of the U.S. Department of Energy.

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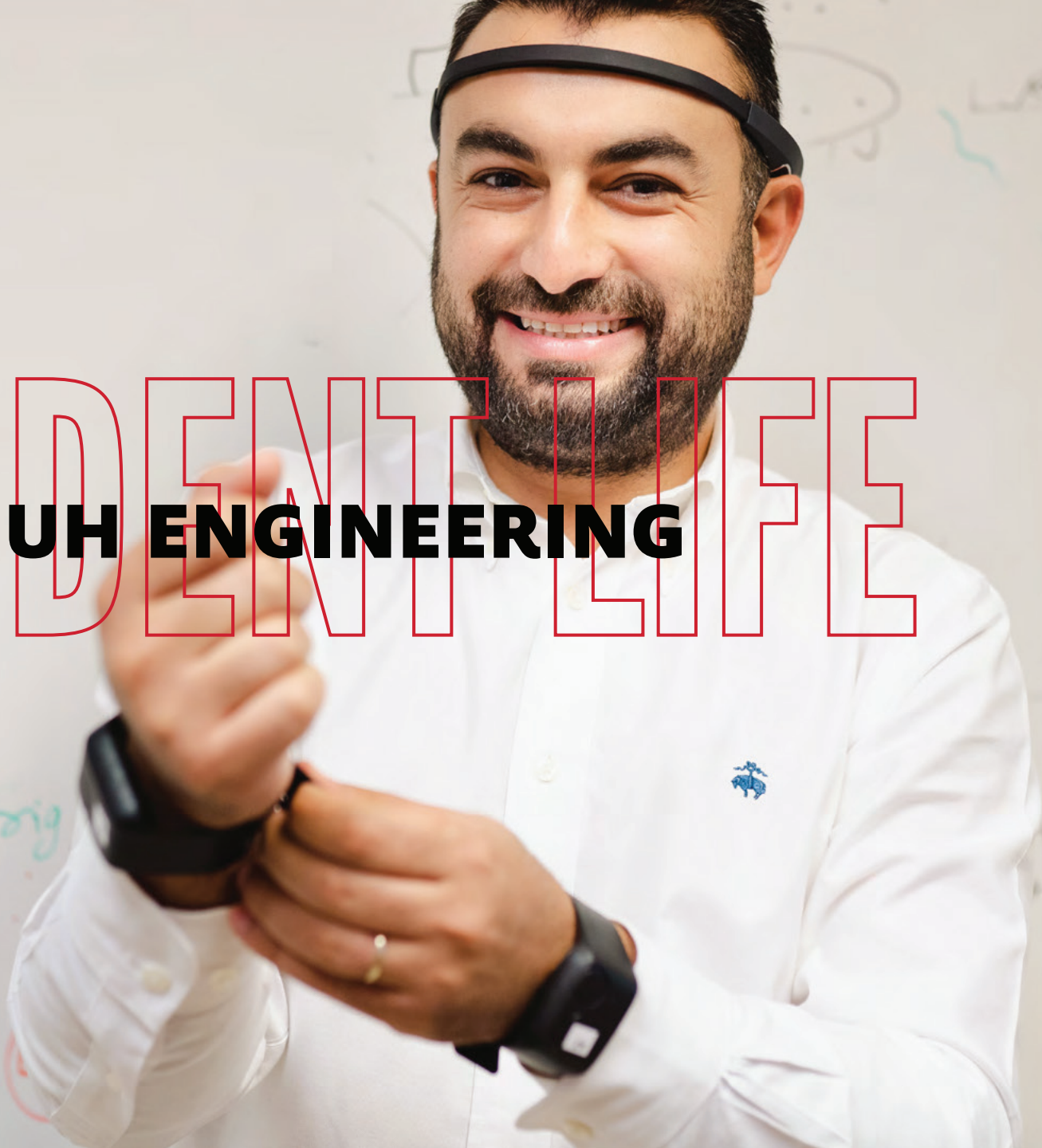
32  
36  
Face  
m

CHOICES...  
dependent  
integrated  
prime  
5x10  
each trial  
20 trials

Trig

# STUDENT LIFE

**AT UH ENGINEERING**



# 30 ENGINEERING STUDENT ORGANIZATIONS

.....  
**Society of Hispanic Professional Engineers (SHEP) at UH and National Society of Black Engineers (NSBE) at UH were both recently named Number One in U.S.A for their respective chapter divisions.**



## OUR “PROMES” TO YOU

The Program for Mastery in Engineering Studies, or **PROMES** (pronounced “promise”), is a student success program dedicated to providing the help and support needed to succeed in engineering.

**PROMES** provides engineering students with academic advising, workshops, scholarships, and professional and personal development opportunities. **PROMES** helps students keep up with classes, study for exams, discover where they best fit in the college community, and find balance between their personal and academic lives.

**PROMES** is open to all undergraduate students in the college and provides a positive learning environment that supports their needs.



## HONORS ENGINEERING PROGRAM

The Cullen College of Engineering and the Honors College jointly offer a program for Honors College students with majors in engineering: the Honors Engineering Program (HEP).

The HEP is a challenging program that encourages a sense of community among Honors students in Engineering and provides an improved experience by offering courses tailored to the needs of these capable, enthusiastic students.

To join the Honors Engineering Program, students must be accepted to the Honors College and to the Cullen College of Engineering.

## DID YOU KNOW ?

**3,500+** UH alumni are presidents, CEOs, or heads of their own companies

.....

**63%** of all University of Houston alumni live and work in Houston

.....

UH students spend over **1 million** hours volunteering and interning in Houston each year

.....

**14%** of all Houstonians with bachelor's degrees received them from UH





# STUDENT LIFE

## ACADEMICS

**UH Engineering offers undergraduate degrees in:**

Biomedical Engineering

.....

Chemical Engineering

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Civil Engineering

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Construction Engineering

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Computer Engineering

Computer Engineering & Analytics

.....

Electrical Engineering

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Industrial Engineering

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Mechanical Engineering

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Systems Engineering

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Petroleum Engineering

# STUDENT LIFE

## ACADEMICS

### UH Engineering offers graduate degrees in:

Aerospace Engineering (M.S.)

.....

Biomedical Engineering (M.S., Ph.D.)

.....

Chemical Engineering (M.S., Ph.D.)

.....

Civil Engineering (M.S., Ph.D.)

.....

Computer Systems Engineering (M.S.)

.....

Electrical Engineering (M.S., Ph.D.)

.....

Engineering Data Science (M.S.)

.....

Engineering Management (M.S.)

.....

Environmental Engineering (M.S., Ph.D.)

.....

Geosensing Systems Engineering (M.S., Ph.D.)

Industrial Engineering (M.S., Ph.D.)

.....

Materials Science Engineering (M.S., Ph.D.)

.....

Mechanical Engineering (M.S., Ph.D.)

.....

Petroleum Engineering (M.S., Ph.D.)

.....

Space Architecture (M.S.)

.....

Subsea Engineering (M.S.)

.....

Dual Aerospace Engineering & Space Architecture  
(M.S.)

.....

Dual Mechanical & Subsea Engineering (M.S.)

.....

Dual Mechanical & Aerospace Engineering (M.S.)

.....

Dual Petroleum & Subsea Engineering (M.S.)

# STUDENT LIFE

## ACADEMICS

**UH Engineering offers graduate-level certificate programs in:**

Subsea Engineering

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Advanced Subsea Engineering

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High-Performance Computing

.....

Data Analytics and Condition and Performance Monitoring of Engineered Systems

.....

Unconventional Energy Resources

.....

Global Climate, Energy and Environment

.....

Power Systems and Smart Grid

.....

Power Electronics and Renewable Energy

.....

Engineering Data Science

.....

Engineering Management

# RESEARCH

- Project-based learning is the rule at UH Engineering
- Students are exposed to hands-on, real-world training from the moment they step foot on campus on their first day of classes
- Students taught by world-renowned faculty members and industry leaders
- Countless research opportunities are available in the college's many research laboratories, centers and industry consortiums, as well as with individual faculty members
- All students are strongly encouraged to take on research opportunities through one of the college's many programs or with external internship opportunities



# CAREERS

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The University of Houston's location in the heart of Houston makes maintaining jobs, internships or fellowships while pursuing an undergrad degree very doable.

**The Engineering Career Center** provides students with direct access to internships fellowships and full-time positions throughout the region.

**80%**

of UH engineering undergraduates are employed in Texas within one year of graduation



# STUDENT LIFE

## CAREER FAIRS

### 2021 Fall Career Fair Quick Facts



Virtual

80

companies

450

industry representatives

1000+

students

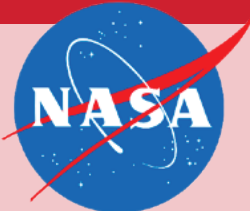
3,800+

video chats



Schlumberger

ExxonMobil



# STUDENT LIFE

## CAREERS

### 2019 Average Annual Salaries in Engineering

	Median entry-level salary <sup>1</sup>	Mean annual salary <sup>2</sup>	Top 10% <sup>3</sup>
<b>AEROSPACE</b>	\$66,892	\$117,100	\$164,210
<b>BIOMEDICAL</b>	\$60,582	\$95,090	\$144,350
<b>CHEMICAL &amp; BIOMOLECULAR</b>	\$65,469	\$114,470	\$169,770
<b>CIVIL</b>	\$55,603	\$93,720	\$142,560
<b>COMPUTER</b>	\$70,470	\$117,840	\$172,630
<b>ELECTRICAL</b>	\$64,489	\$101,600	\$153,240

	Median entry-level salary <sup>1</sup>	Mean annual salary <sup>2</sup>	Top 10% <sup>3</sup>
<b>ENVIRONMENTAL</b>	\$55,288	\$92,640	\$137,090
<b>INDUSTRIAL/ MANUFACTURING</b>	\$59,203	\$91,630	\$132,340
<b>MATERIALS</b>	\$65,027	\$96,930	\$148,110
<b>MECHANICAL</b>	\$61,158	\$92,800	\$136,550
<b>PETROLEUM</b>	\$86,524	\$156,370	\$250,000*
<b>SUBSEA</b>	\$99,340	\$106,347	\$300,000*

<sup>1</sup> Figures from payscale.com, June 2019

<sup>2,3</sup> Figures from National Occupational Employment and Wage Estimates, U.S. Department of Labor, 2018

\* Figures from National Occupational Employment and Wage Estimates, U.S. Department of Labor, 2017

# STUDENT LIFE



OH THE PLACES YOU'LL GO

Many students go on to pursue graduate studies at top universities.

Yale



HARVARD



Stanford  
University



JOHNS HOPKINS  
UNIVERSITY



UNIVERSITY OF  
NOTRE DAME



# ABOUT HOUSTON

**TEXAS**



# ABOUT HOUSTON

**HOUSTON** is a large metropolis in southeast Texas, extending to Galveston Bay. It's closely linked with the Space Center Houston, the coastal visitor center at NASA's astronaut training and flight control complex. The city's relatively compact Downtown includes the Theater District, home to the renowned Houston Grand Opera, and the Historic District, with 19th-century architecture and upscale restaurants.



# ABOUT HOUSTON

## HOUSTON BY THE NUMBERS

Houston is the 4<sup>th</sup> largest city in the United States with a total population of

**6.5 MILLION**

living in the Greater Houston area.



**AT 655 SQUARE MILES,**

the City of Houston could contain the cities of New York, Washington, Boston, San Francisco, Seattle, Minneapolis and Miami.

# ABOUT HOUSTON

## HOUSTON BY THE NUMBERS

Houston is the most diverse city in the U.S.



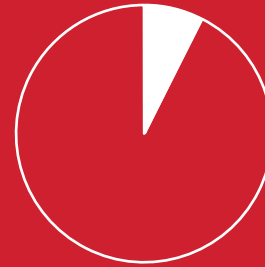
37.3%  
Anglo



36.5%  
Hispanic



16.9%  
African American



7.5%  
Asian/Other



1.8%  
Other



**MORE THAN  
145 DIFFERENT  
LANGUAGES**  
are spoken in Houston

**90 NATIONS**  
have consular  
representation in  
the city.



## BUSINESS & VALUE

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- Houston ranks first among U.S. cities where paychecks stretch the furthest, according to Forbes.
- Houston is home to the second largest concentration of Fortune 1000 companies in the country (49) behind New York (72).
- Houston is home to the Energy Corridor, the Texas Medical Center, NASA and the Port of Houston



# ABOUT HOUSTON

## CULTURE

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***GQ Magazine*** deemed Houston the “New Capital of Southern Cool” (2018).

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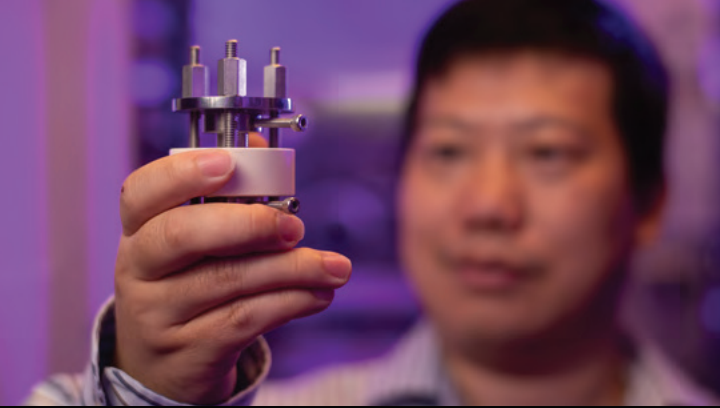


***Thrillist*** ranked Houston among “The 7 Most Impressive American Cities of 2017” for its diverse population, affordability and strong economy (2018).

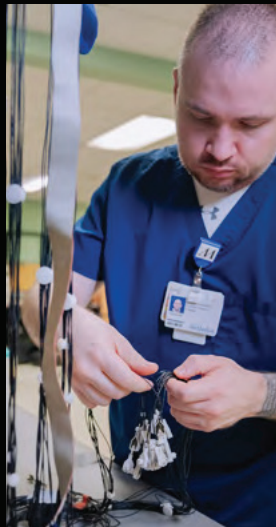
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***WalletHub*** ranked Houston among 2018’s Most Fun Cities in America (2018).



# THANK YOU



Cullen College of Engineering  
UNIVERSITY OF HOUSTON



@UHEngineering | University of Houston Cullen College of Engineering