

Fort Worth Post of Society of American Military Engineers

College of Engineering Trends for the Future

Paul Componation

Chair, Industrial, Manufacturing, & Systems Engineering

Interim Associate Dean for Graduate & Interdisciplinary Affairs

componation@uta.edu



The University of Texas at Arlington

58,000 Students & 250,000 Alumni – 65% in North Texas



- Carnegie R-1 Doctoral University
 - Very High Research Activity
- Texas Tier One
 - 4th Texas University Recognized
- #1 in the Nation for Veterans
 - Military Times, 2021
- #1 for Degrees for African American
 - Issues in Higher Education, 2021
- Asian American, Native American, Pacific Islander Serving Institution
 - U.S. Department of Education, 2021
- Hispanic Serving Institution
 - U.S. Department of Education, 2021

New Leadership

Texas Experience – National Reputation

President Jennifer Cowley



Provost Tamara Brown



Overview of College of Engineering

Most Comprehensive Engineering Program in North Texas

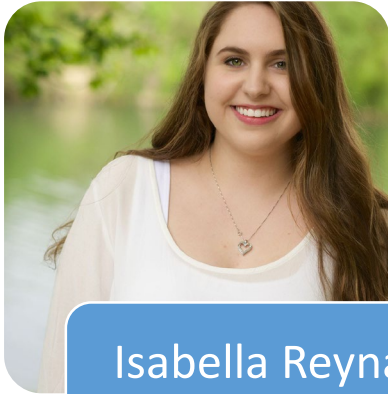
- 219 total faculty
- 167 tenured or tenure-track faculty
- 13 Fellows of the National Academy of Inventors
- 3 National Academy of Engineering Members
- 49 Fellows in Professional Organizations
- 24 National Science Foundation CAREER winners
- Over \$42.1 million in research expenditures last year
- 55% of graduates complete an internship or co-op while at UTA

Dean Peter Crouch



College of Engineering

Success is Measured One Student at a Time



Isabella Reyna
Industrial
Engineering



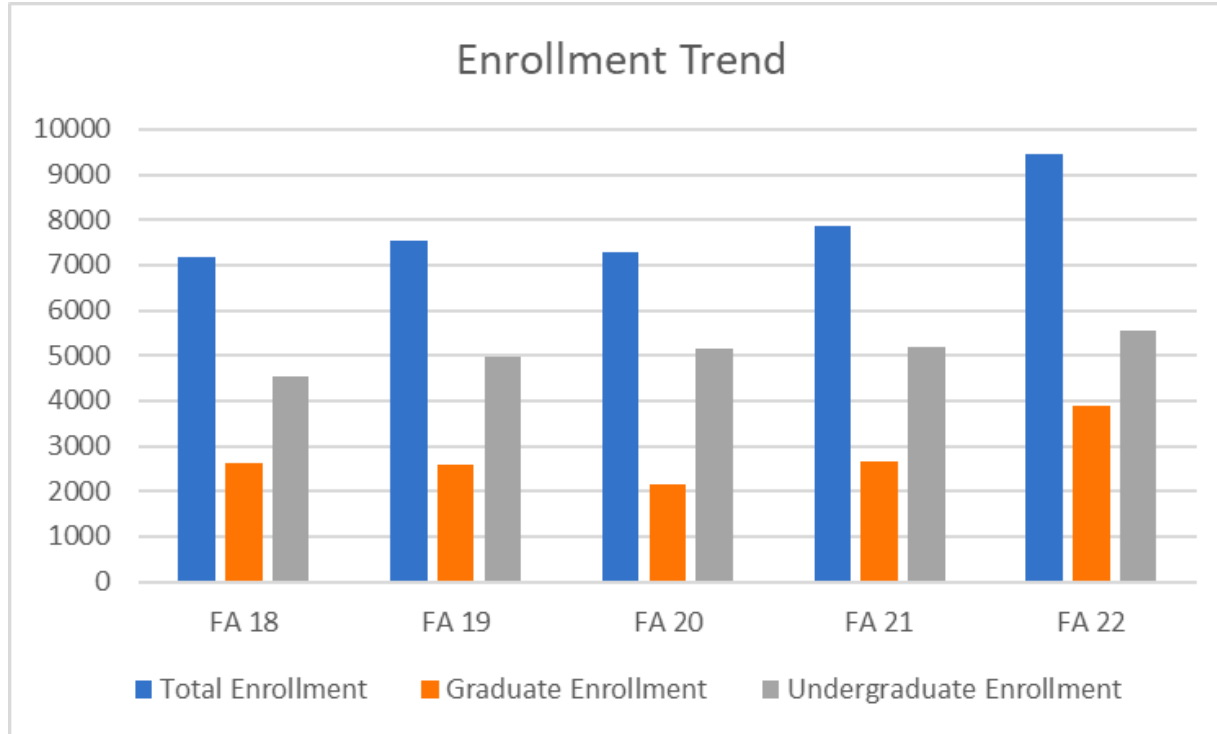
Scott Landers
Civil
Engineering



Jezrell Aquitania
Computer
Engineering

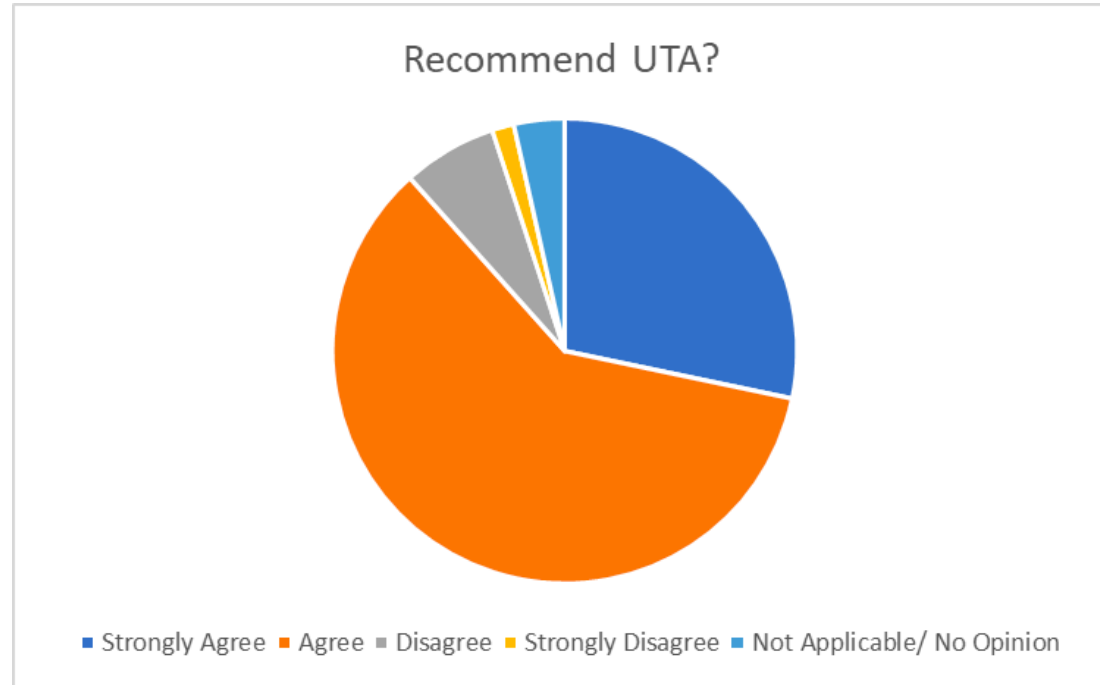
College of Engineering

Enrollment Growth even with Challenges



College of Engineering Exit Survey

The Best Advertising is our Graduates



College of Engineering Research Statistics

A Significant Driver of Revenue and Expenditures

Engineering Expenditures												
Type	FY16		FY17		FY18		FY19		FY20		FY21	
Expenditures - External Grants and Gifts only	\$16,837,758		\$17,957,549		\$21,000,453		\$22,461,676		\$23,718,904		\$23,232,566	
Expenditures - Total for all of Engineering, as Reported to US News. This includes external and internal awards, UTARI, TMAC, etc.	\$45,265,615		\$48,824,053		\$50,878,461		\$55,126,522		\$54,767,536		\$57,808,715	

Engineering Awards												
Type	FY16		FY17		FY18		FY19		FY20		FY21	
	PI Only	Custom-CR	PI Only	Custom-CR	PI Only	Custom-CR	PI Only	Custom-CR	PI Only	Custom-CR	PI Only	Custom-CR
Awards received - external grants only	21,763,46	20,885,64	28,107,24	27,677,01	22,463,13	22,211,4	25,829,65	26,397,01	30,083,11	30,289,08	33,007,85	33,046,35

Tenure Track and Non-Tenure Track Faculty

A Critical Resource

Faculty Count	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Total	% Change
Total T/TT	128	139	141	145	157	163	166		
Net Change		11	2	4	12	6	3	38	29.7%
Gross Change		16	11	15	14	10	3	69	53.9%
Total NTT	34	37	51	48	50	51	53		
Net Change		3	14	-3	2	1	2	19	55.9%
Gross Change		7	14	2	6	6	4	39	114.7%
Total T/TT&NTT	162	176	192	193	207	214	223		
Total Gross Change		23	25	17	20	16	7	108	66.7%
Total Net Change		14	16	1	14	7	5	57	35.2%

Trends for the Future

New Programs

- Master of Science in Data Science
- Bachelor of Science in Resource and Energy Engineering
- UTA Fort Worth
 - Master of Science in Computer Science
 - Master of Science in Engineering Management
- Master of Science in Engineering
 - Stackable Certificates



Trends for the Future

Texas Energy and Manufacturing

Total Renewable Energy (millions of megawatt-hours)

1. Texas (33.95)
2. Washington (25.01)
3. California (19.52)
4. Iowa (13.30)
5. Oregon (13.11)
6. Oklahoma (10.50)
7. New York (9.38)
8. Kansas (8.27)
9. Illinois (7.11)
10. Minnesota (5.40)

State	Number of Manufacturing Jobs	Number of Manufacturing Companies
California	1,541,050	24,304
Texas	1,276,706	20,141
Ohio	892,810	15,449
Illinois	772,082	15,768
Pennsylvania	756,747	14,484
Michigan	733,144	12,836
New York	671,826	13,981
Indiana	589,816	8,472
Wisconsin	586,044	9,754
North Carolina	578,890	9,084

Trends for the Future

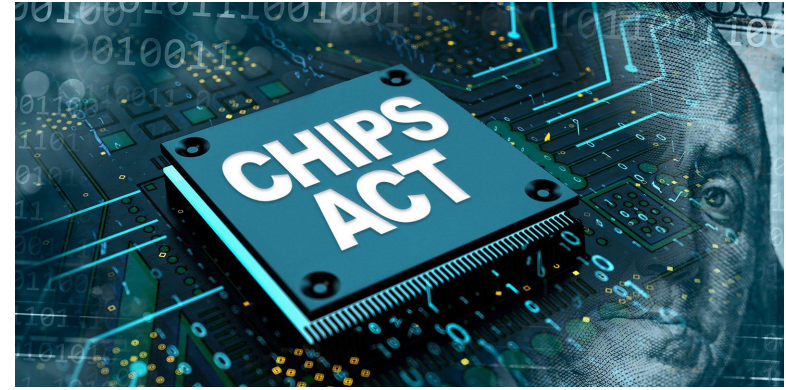
CHIPS Act - Creating Helpful Incentives to Produce Semiconductors for America

Establish and expand domestic production of leading-edge semiconductors in the US

Build a sufficient and stable supply of mature node semiconductors

Invest in R&D to ensure the next generation semiconductor technology

Create tens of thousands of good-paying manufacturing jobs and more than hundred thousand construction jobs



Trends for the Future

Infrastructure Investment and Jobs Act - 1

- Deliver clean water to all American families and eliminate the nation's lead service lines
- Ensure every American has access to reliable high-speed internet.
- Repair and rebuild our roads and bridges with a focus on climate change mitigation, resilience, equity, and safety for all users.
- Upgrade our nation's airports and ports to strengthen our supply chains and prevent disruptions that have caused inflation.



Trends for the Future

Infrastructure Investment and Jobs Act - 2

- Make the largest investment in passenger rail since the creation of Amtrak.
- Build a national network of electric vehicle (EV) chargers.
- Upgrade our infrastructure to deliver clean, reliable energy across the country & deploy technology to achieve a zero-emissions future.
- Make our infrastructure resilient against the impacts of climate change, cyber-attacks, and extreme weather events.
- Deliver the largest investment in tackling legacy pollution in American history by cleaning up Superfund and brownfield sites, reclaiming abandoned mines, and capping orphaned oil and gas wells.

Thank You
Questions?

