



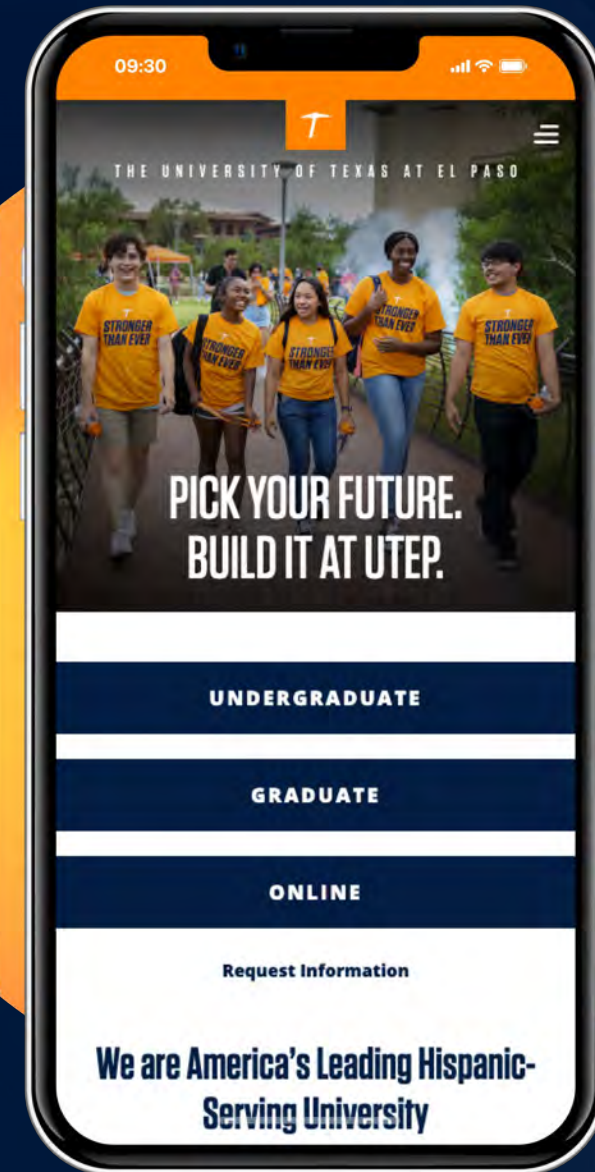
THE UNIVERSITY OF TEXAS AT EL PASO  
**AMERICA'S LEADING  
HISPANIC-SERVING  
UNIVERSITY**

**DR. HEATHER WILSON**

**NATIONAL MINING ASSOCIATION  
SEPTEMBER 21, 2023**

# ONE IPHONE REQUIRES DOZENS OF ELEMENTS

Iron	Manganese	Cobalt
Titanium	Zinc	Potassium
Niobium	Phosphorus	Sulfur
Fluorine	Gallium	Beryllium
Silver	Cadmium	Nitrogen
Copper	Carbon	Zirconium
Lithium	Ruthenium	Nickel
Antimony	Magnesium	Gold
Palladium	Lead	Tungsten
Boron	Platinum	Aluminum
Chromium	Bismuth	Neodymium
Molybdenum	Hydrogen	Silicon
Tantalum	Tin	Chlorine
Strontium	Barium	Yttrium
Oxygen	Bromine	Lanthanum
Arsenic	Indium	Neodymium





# RARE EARTH ELEMENTS



# WORKFORCE



\*Data from the Bureau of Labor Statistics



# THE WALL STREET JOURNAL.

## ‘War for Talent’ at Mines Could Drive Up Cost of Energy Transition



*“The problem is that talent isn’t lying around waiting to be paid more—there just isn’t enough of it.”*

ANDREA BRICKEY,  
ASSOCIATE PROFESSOR OF MINING ENGINEERING  
AND MANAGEMENT, SOUTH DAKOTA SCHOOL OF  
MINES & TECHNOLOGY

June 8, 2023

# THE WALL STREET JOURNAL.



## A 'Dirty' Job That Few Want: Mining Companies Struggle to Hire for the Energy Transition

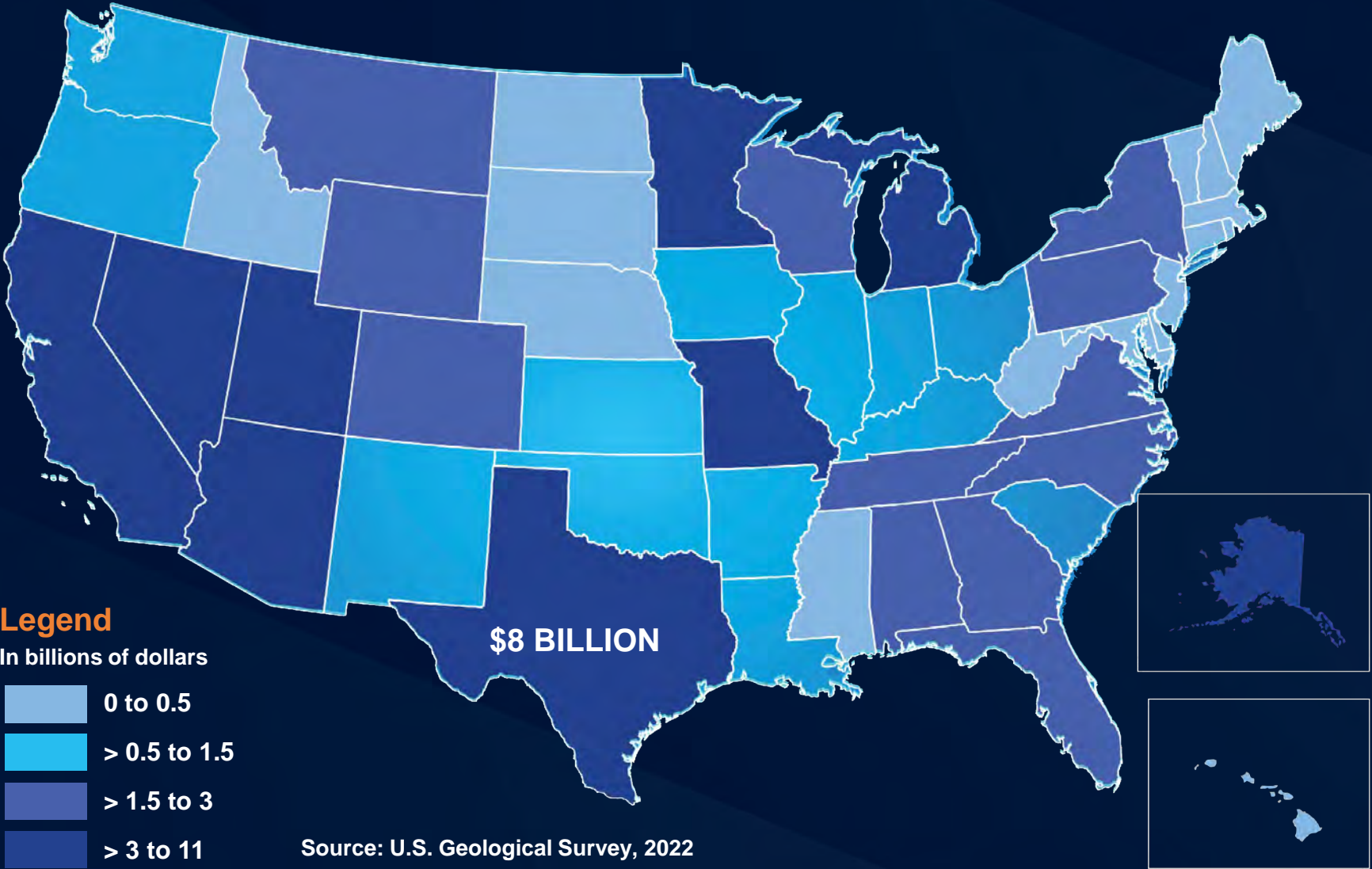
A skills shortage is threatening to slow the shift to a green economy, as more young people are turning their noses up at mining jobs

“Last year, four U.K. universities ... banned mining firms from recruiting on campus and attending careers fairs, part of a broader trend of college graduates and young workers turning their backs on extractive industries that they fear harm the planet.”

June 1, 2023



# Mining in the U.S.



MINERAL	POUNDS PER PERSON
Sand, Gravel, Stone	17,555
Coal	3,077
Cement	794
Other Nonmetals	553
Salt	390
Iron Ore	265
Phosphate Rock	159
Clays	146
Sulfur	65
Potash	47
Soda Ash	30
Other Metals	23
Bauxite (Aluminum)	19
Copper	13
Lead	11
Manganese	6
Zinc	6
Uranium	0.14
	40,211.14

# JOB MARKET

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**MINING ENGINEERING  
GRADUATES**

**151**

(2021)

**ANNUAL  
JOB OPENINGS**

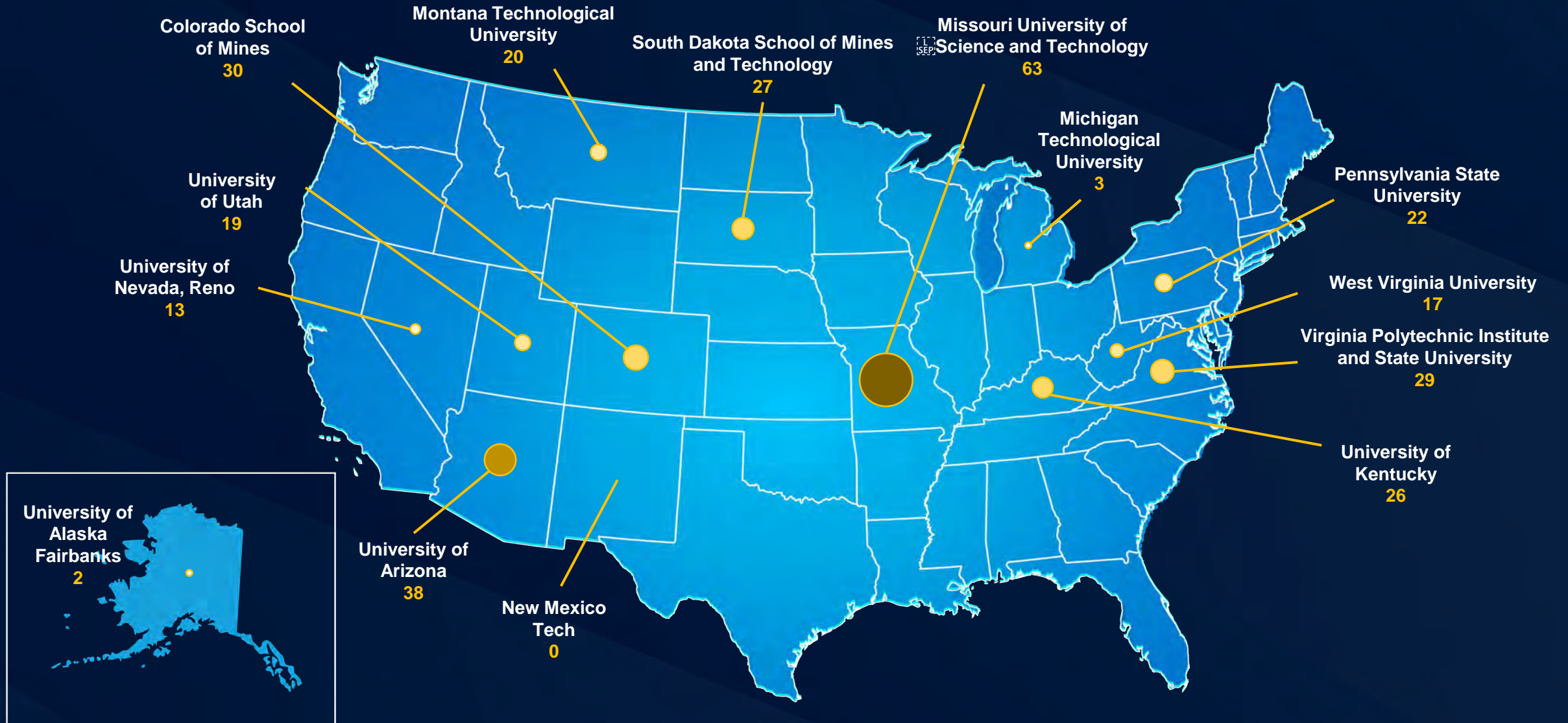
**500**

(Average predicted 2021-31)

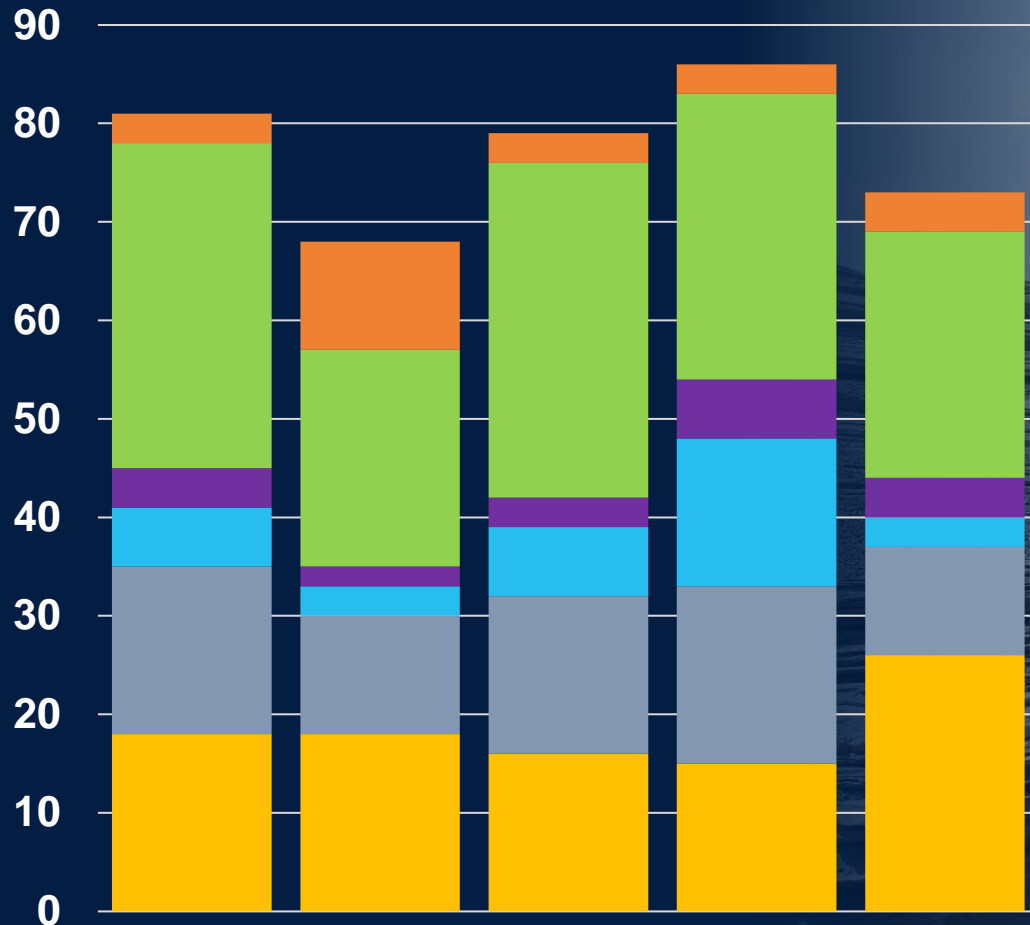




# Accredited Mining and Mineral Engineering Degree Programs



# MINING ENGINEERING CURRICULUM



- Material Handling, Extraction and Processing
- Mine Equipment, Operation and Design
- Mine Safety and Environment
- Mining Economics and Management
- Geology
- General Engineering







# **The Solution:**

## **Mining Industry + UTEP Partnership**

**Together, we can build an ABET accredited program that will graduate 100 highly qualified mining engineers annually.**

### **UTEP provides:**

- Innovative recruiting
- Exceptional students
- Infrastructure
- State financial support
- R1 caliber education

### **Industry Partners provides:**

- 21st century expertise
- Hands-on opportunities
- Financial support













College of Mines and Metallurgy - University of Texas, El Paso, Tex. 1914







# THE UNIVERSITY OF TEXAS AT EL PASO

## AT A GLANCE

**24,300**

**Students** (Fall 2023)

**171**

**Degree Programs**

In 9 colleges and schools

**\$130.5M**

**Annual Research**

**95%**

**Minority**

**75**

**Bachelor's**

**71**

**Master's**

**25**

**Doctoral**

In 9 colleges and schools

**No. 4 in Texas**

For federal research at  
public universities

**49%**

**First-generation  
college students**

**\$1.4 Billion**

UTEP's annual contribution to  
the El Paso County economy



# Recruitment Advantage: Place

## **Texas:**

**30-million-person underserved market**

## **Mexico:**

**128-million-person market**

- In state tuition for 1.5m in Juarez
- “PASE” gives in-state tuition to all Mexican families with income under \$50,000
- UTEP’s strong reputation and brand in Chihuahua



KEEPING A GREAT  
EDUCATION AFFORDABLE

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68% of students who got  
a grant or scholarship:

Avg. tuition and fees  
\$9,744

Avg. out-of-pocket cost:  
\$800

#2 of 2000 in listing of  
budget-friendly  
universities





# Mining Culture





## ENGINEERING AND SCIENCE DEMOGRAPHICS

	Undergraduate Enrollment (Fall 2022)	Hispanic Enrollment	Women Enrollment	Undergraduate Degrees Awarded (2021-22)	Hispanic Degrees Awarded	Women Degrees Awarded
<b>College of Engineering</b>	3,766	85%	21%	561	81%	27%
<b>College of Science</b>	2,916	88%	64%	496	87%	64%

# Engaged Learning





# Multinational graduates



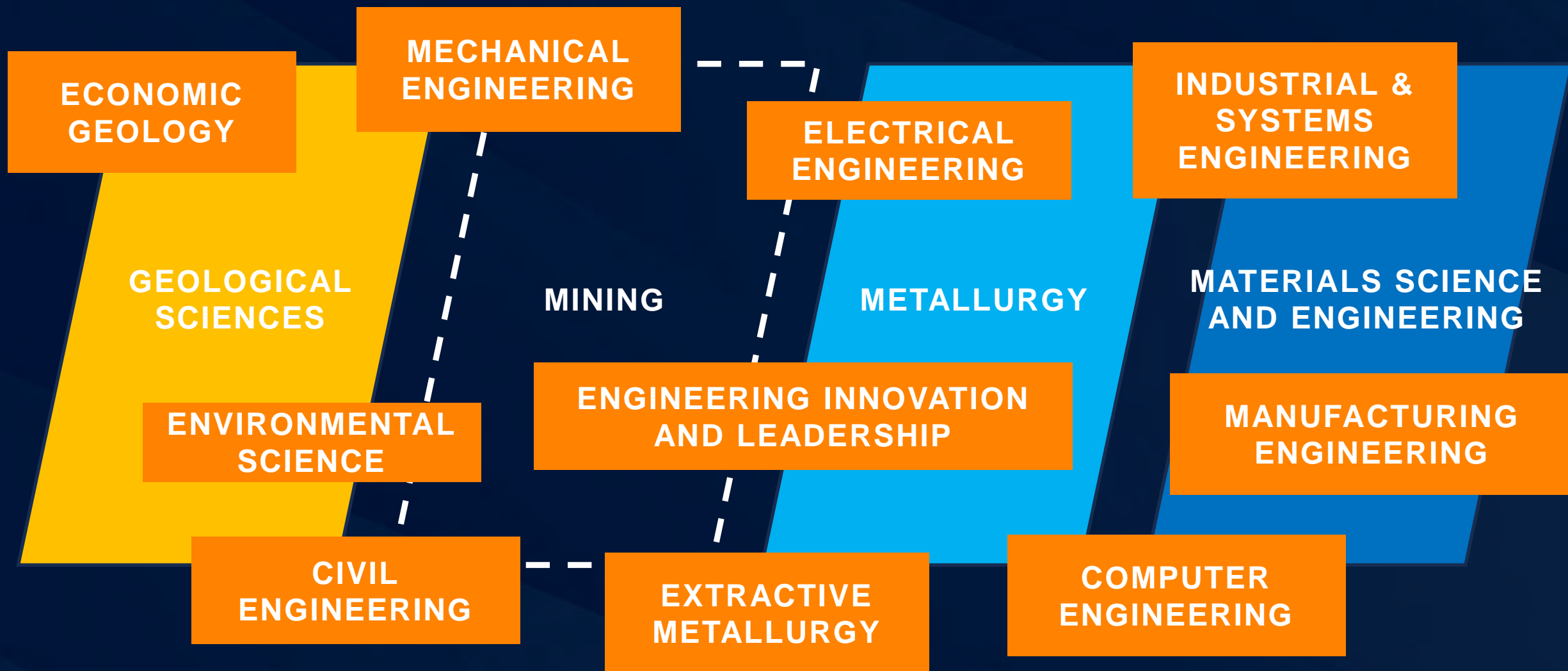


# Partnership + Pipelines





# Related Disciplines



## FACULTY EXPERTISE

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- Mineral Exploration in Texas
- Rare Earth Metal Extraction
- Economic Geology
- Recovery Methods from Water/Brine Sources
- Machine Learning Applications
- Electrochemical Processes
- Space Exploration Related to Materials
- Water





# B.S. IN MINING ENGINEERING

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## 128 credit hours

- Mining Engineering (38 credits)
- Geology (15 credits)
- Metallurgical Engineering (9 credits)
- Common Engineering (24 credits)
- UTEP Core (51 credits)

## Program Highlights

- Mining engineering design and operation software
- Two required summer industrial mine design and project experiences
- 15 lab experiences
- Incorporation of geology, metallurgical engineering and common engineering courses



# Why UTEP is the Right Partner

- Right place
- Full administrative support
- Proven experience educating engineering excellence
- Right culture



## PARTNER COMMITMENT

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- Advisory board
- Curricular advising
- Engaged learning opportunities for students
- Financial support





# 4 to 6 seats at the table

**Dean Kenith Meissner,  
College of Engineering**

**[kemeissner@utep.edu](mailto:kemeissner@utep.edu)**

**(915) 747-6917**

**Patti Martinez,  
President's Office**

**[pdmartinez@utep.edu](mailto:pdmartinez@utep.edu)**

**(915) 747-5555**



**THE UNIVERSITY OF TEXAS AT EL PASO**