

2018 Campus Conference Update

Agenda

- Quick Look Back
- State of Mines
- MINES@150
- Campus Conversations
- VP Highlights
- Q&A



August 17, 2018



Oredigger Camp



The Eclipse



United As Orediggers



Fall Career Fair



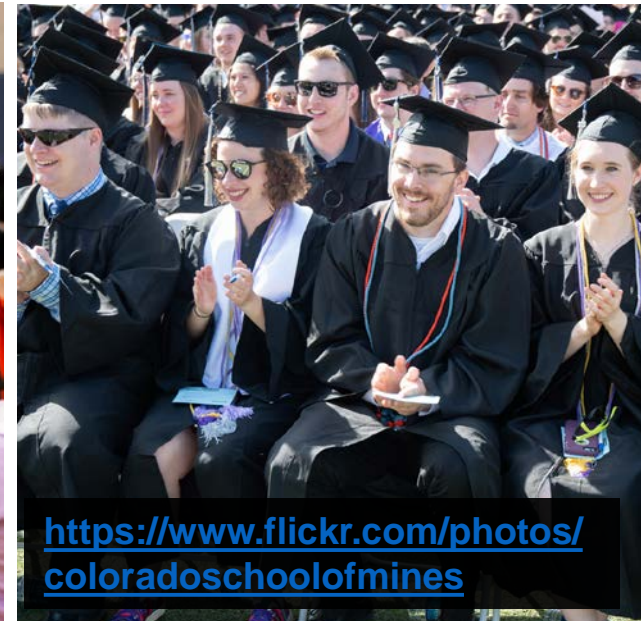
CoorsTek Center



I Dig Mines Day



Mascot-Mania



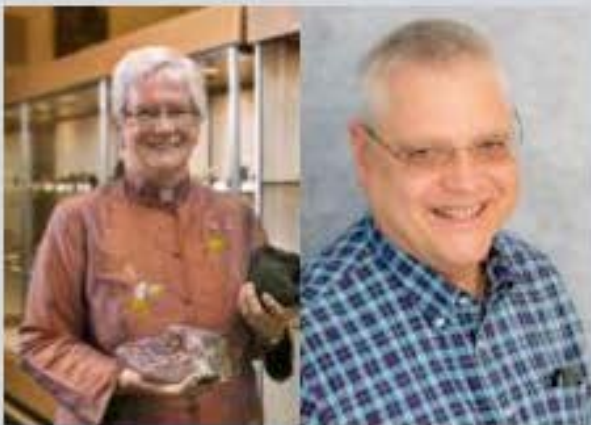
Graduation x 2!

<https://www.flickr.com/photos/coloradoschoolofmines>



Materials informatics fellowship trains next-gen workforce

Materials informatics is the next frontier of materials...



Klimek, Skokan win 2018 Malone Award from APLU

A Colorado School of Mines music professor and professor...



Steel scientists recognized for thermal processing research

Colorado School of Mines researchers affiliated with the...



Ozkan receives SPE reservoir description, dynamics award

Erdal Ozkan, professor and F.H. "Mick" Merelli/Cimarex...



Students partner with GoFarm to improve local food access

A geographic information system tool designed by Colorado...



Methane gas explosions focus of two new research projects

Gregory Bogin Jr., associate professor of mechanical...



Clarke receives Young Investigator Award from ONR

Amy J. Clarke, associate professor of metallurgical and...



Herring wins ACS Storch Award in Fuel Science

Andrew Herring, professor of chemical and biological...



Samaniuk awarded ACS-PRF funding for gas hydrates work

A chemical and biological engineering professor at Colorado...



Drug-delivering microbots could help treat lacunar strokes

Strokes are the fifth leading cause of death in the United...



Flintoft co-edits 3rd edition of textbook on campus violence

Rebecca Flintoft, associate vice president of student life...



Clarke to take a close look at additively manufactured alloys

A Colorado School of Mines associate professor will be...



Navarre-Sitchler receives DOE funds for rock weathering work

It's a discrepancy that has dogged geochemists for years —...



Wu awarded NSF funding for software stack scalability

A computer science professor at Colorado School of Mines is...



Mines team wins NASA RASC-AL deep space competition

A team of Colorado School of Mines students won the grand...



Mines graduate student wins materials science prize

Diptak Bhattacharya, a doctoral student in the...



**3rd Consecutive RMAC All-Sports Cup
6th Nationally in Learfield Directors' Cup standings**

**Congratulations &
Thank You!**





Selfie Science:
An Infrared Adventure
CLUBHOUSE 6

Lighting the Way to Energy Efficiency

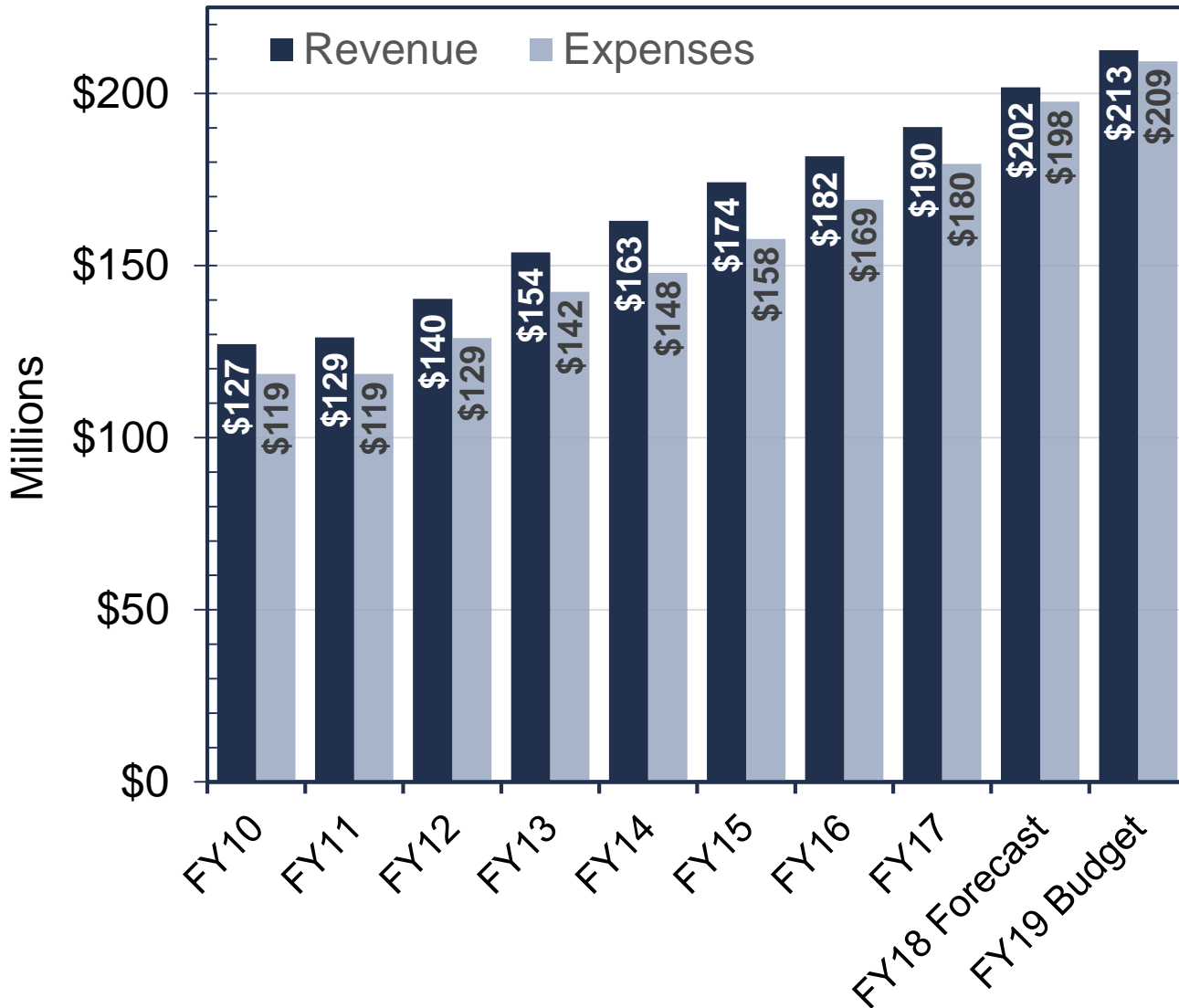
Take Home an Infrared Selfie

The Invisible Hand's Heat Transfer

Dr. Amy Landis
Rector of Mines • Mineral Resources • Nonferrous Metals • Engineering

State of Mines: Part I

Operating Budget



★ **Positive Bottom Line every year**

↑ **67% Operating Budget Revenue**

- growth in expenses outpacing revenues

↑ **120% Tuition Revenue**

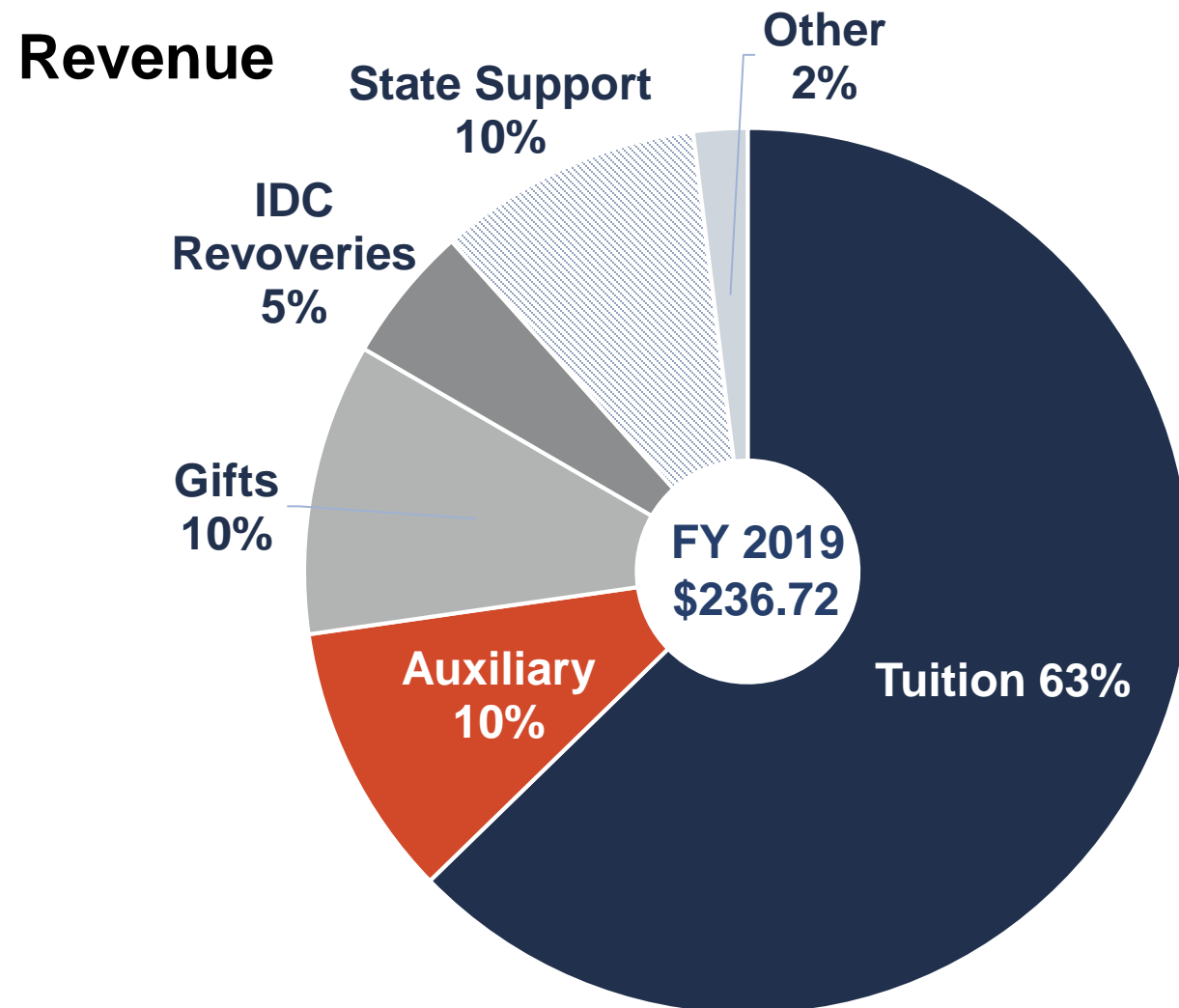
- Undergraduate enrollment: +31%
- Graduate enrollment: **-2.9%**
- 57% resident tuition increase in 10 years (4.6% annual average increase)

↑ **75% Housing & Dining Revenue**

- 51% increase in # of beds
- 5.6% annual average rate increase

↓ **(-2%) State Support**

Operating Budget Funding Sources & Expenses



Expenses:

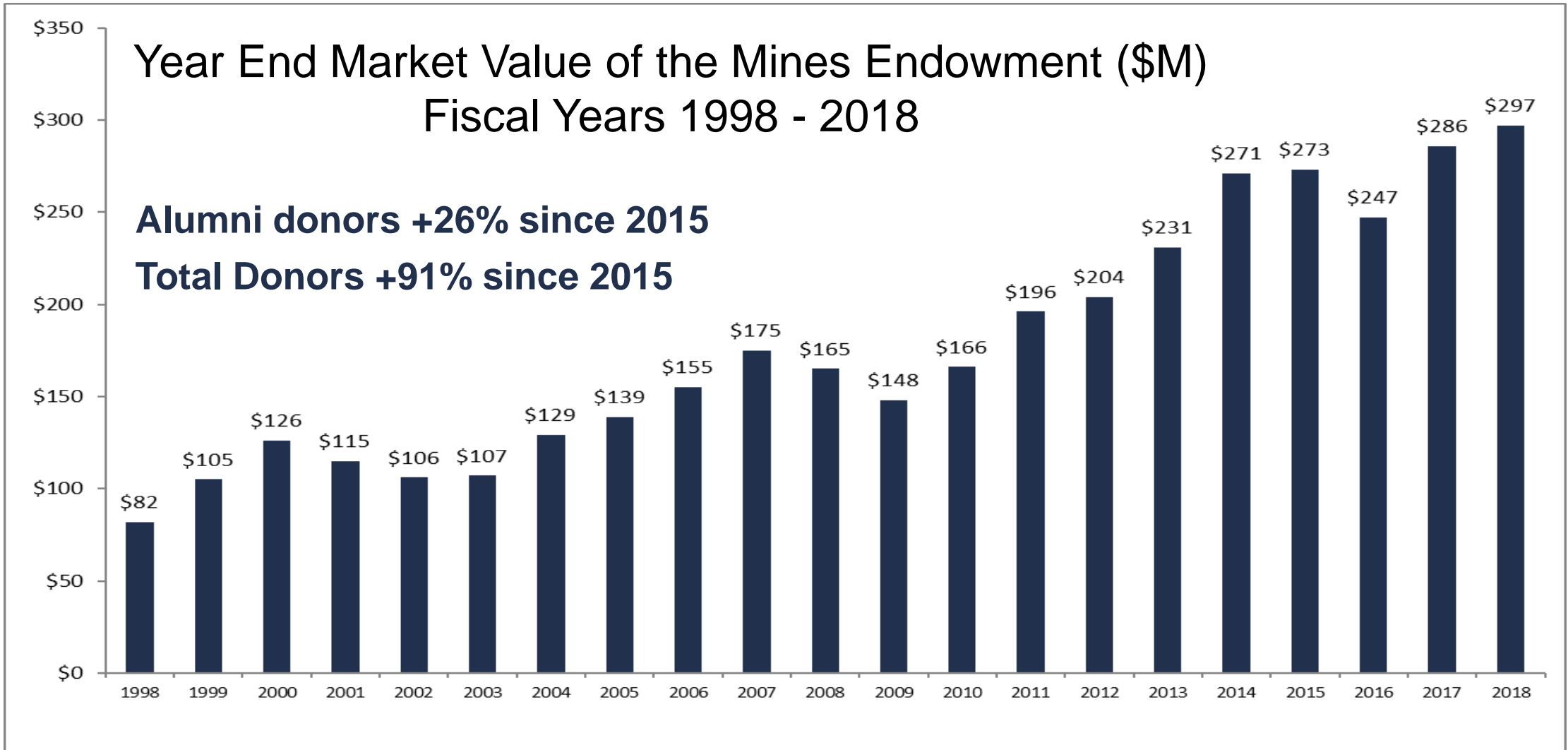
Undergraduate Scholarships (15%)
Auxiliaries (Housing and Food) (9%)
Student Services (3%)

Faculty Salaries + Instruction + Academic Operations + Graduate Student Support + Research Support + Academic Support (48%)

Operations and Maintenance (11%)
Institutional Support (8%)
Information Technology (4%)
Capital and Renovations (2%)

Excludes direct expense budgets from external grants and contracts

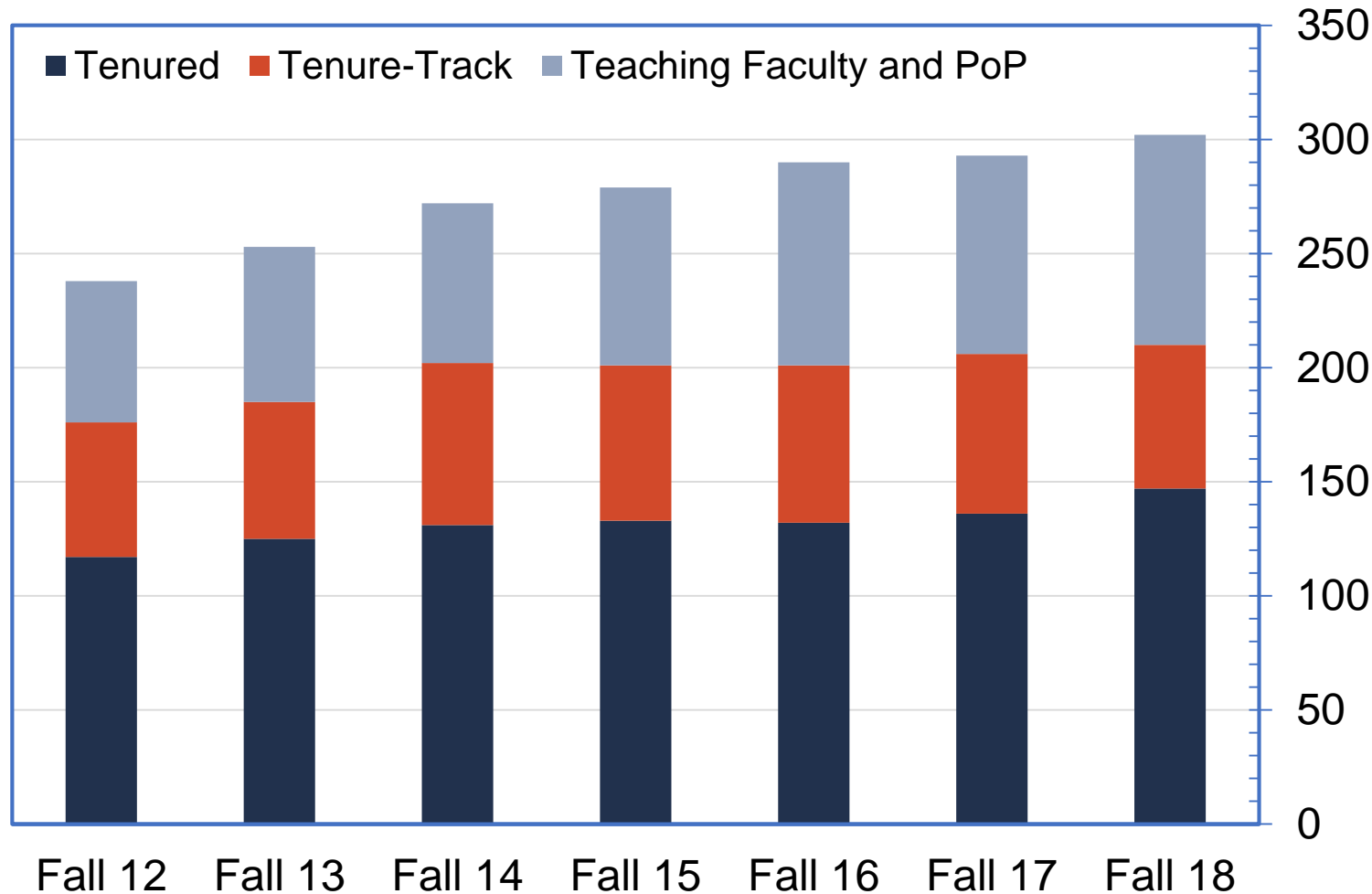
Mines Foundation Endowment Fund



Scholarships • Fellowships • Professorships • Program Support

Investments: Faculty

Academic Program Faculty



19 new hires for AY18-19 with 1:1 F:M; +64 since Fall '12

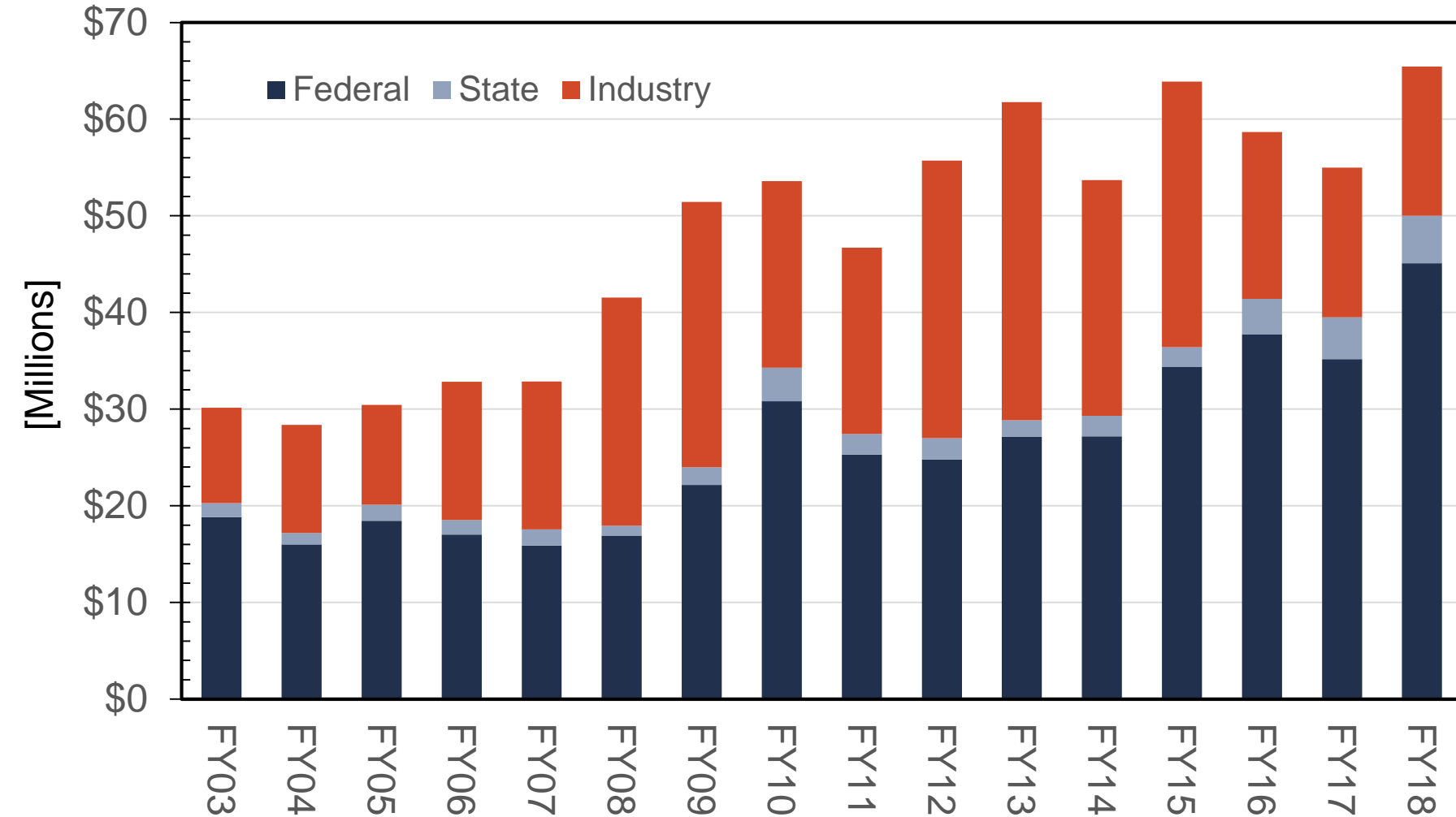
Investments: Facilities



50% increase in campus square footage in the last 10 years → 3.1M ft² today

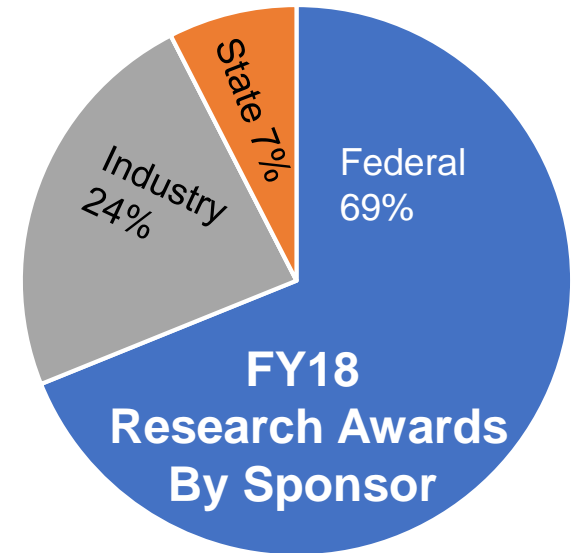
External Resources: Research and Tech Transfer

Research Award Trends FY02 – FY18



\$65,890,070

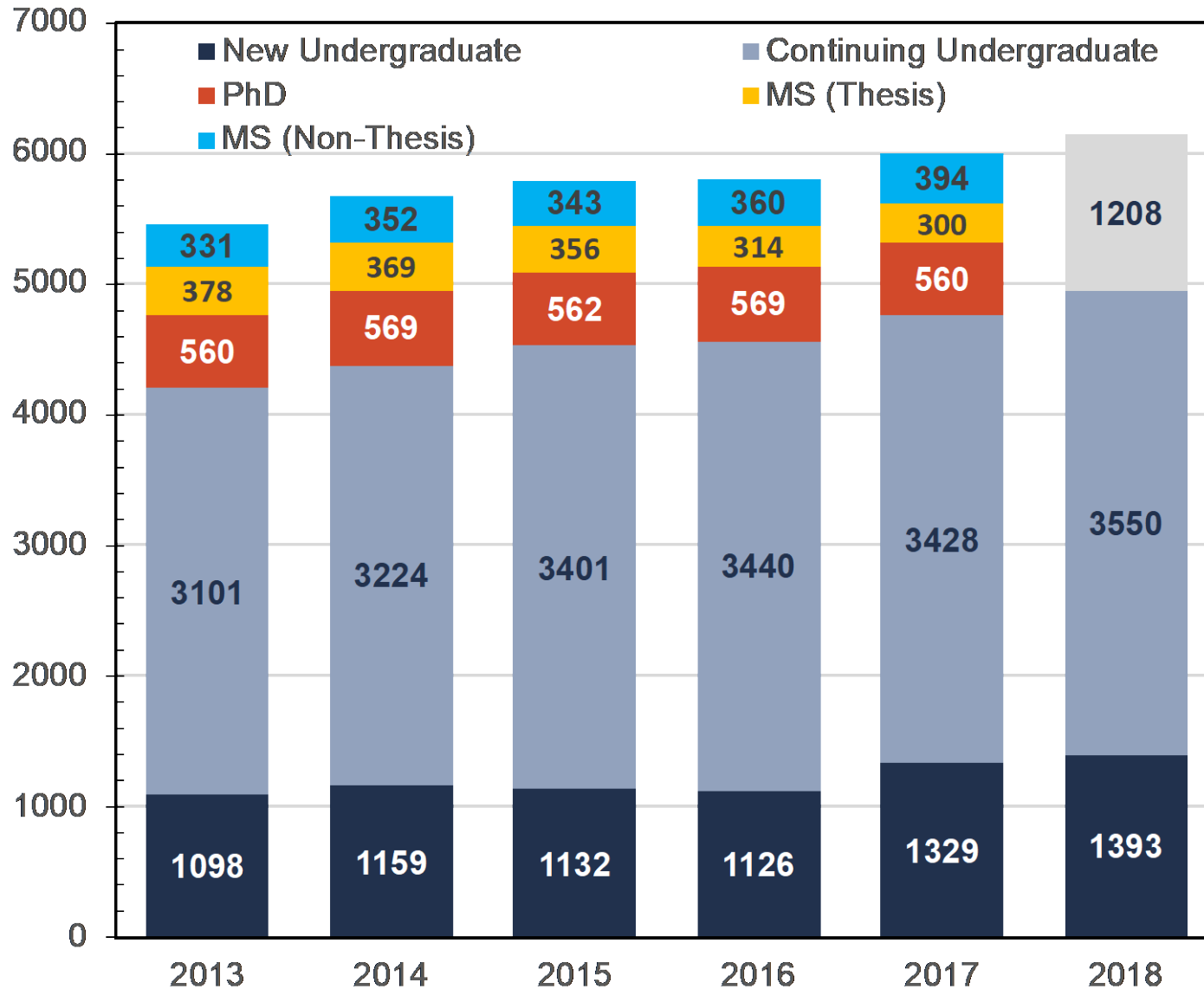
**FY18
Total Research
Awards**



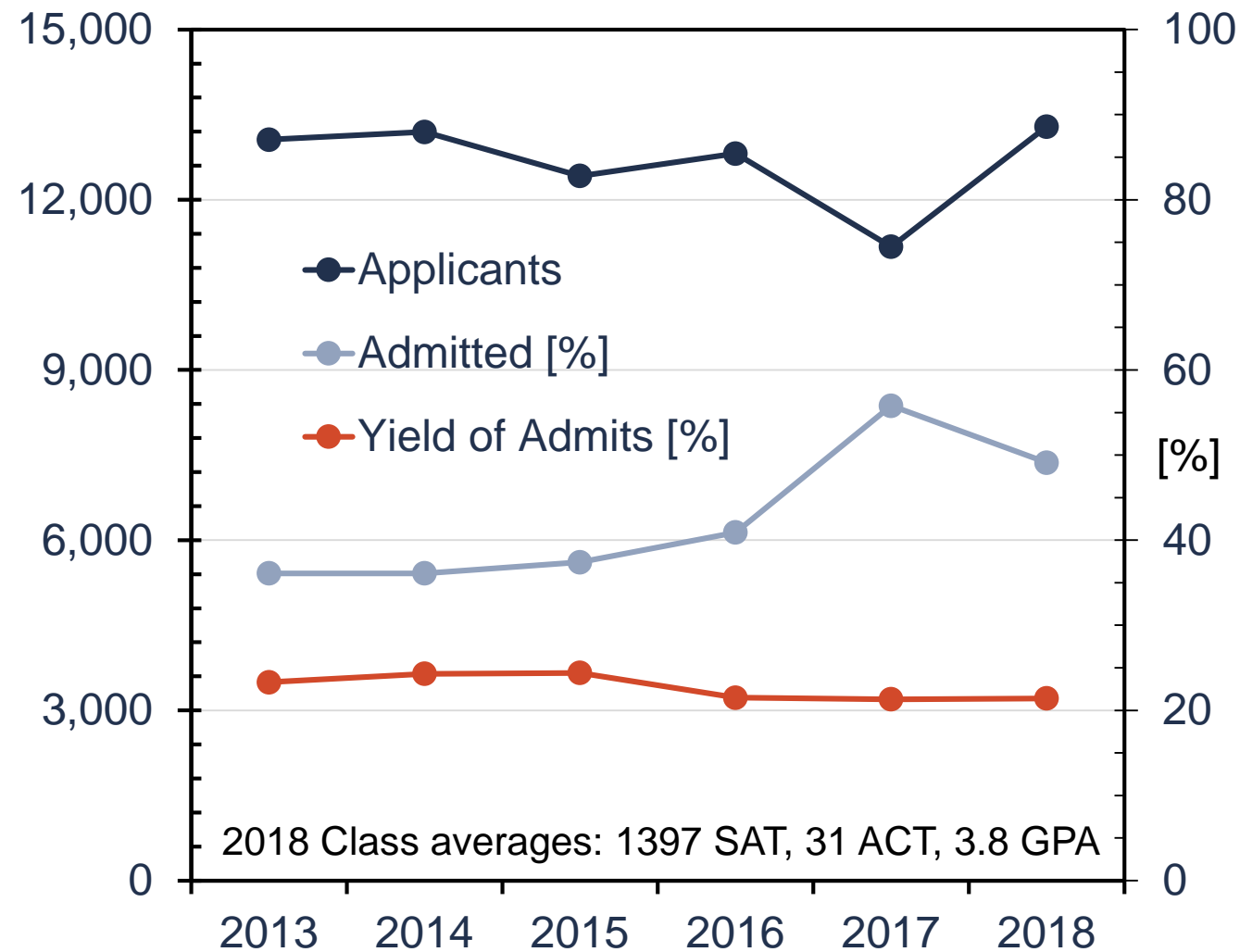


State of Mines: Part II

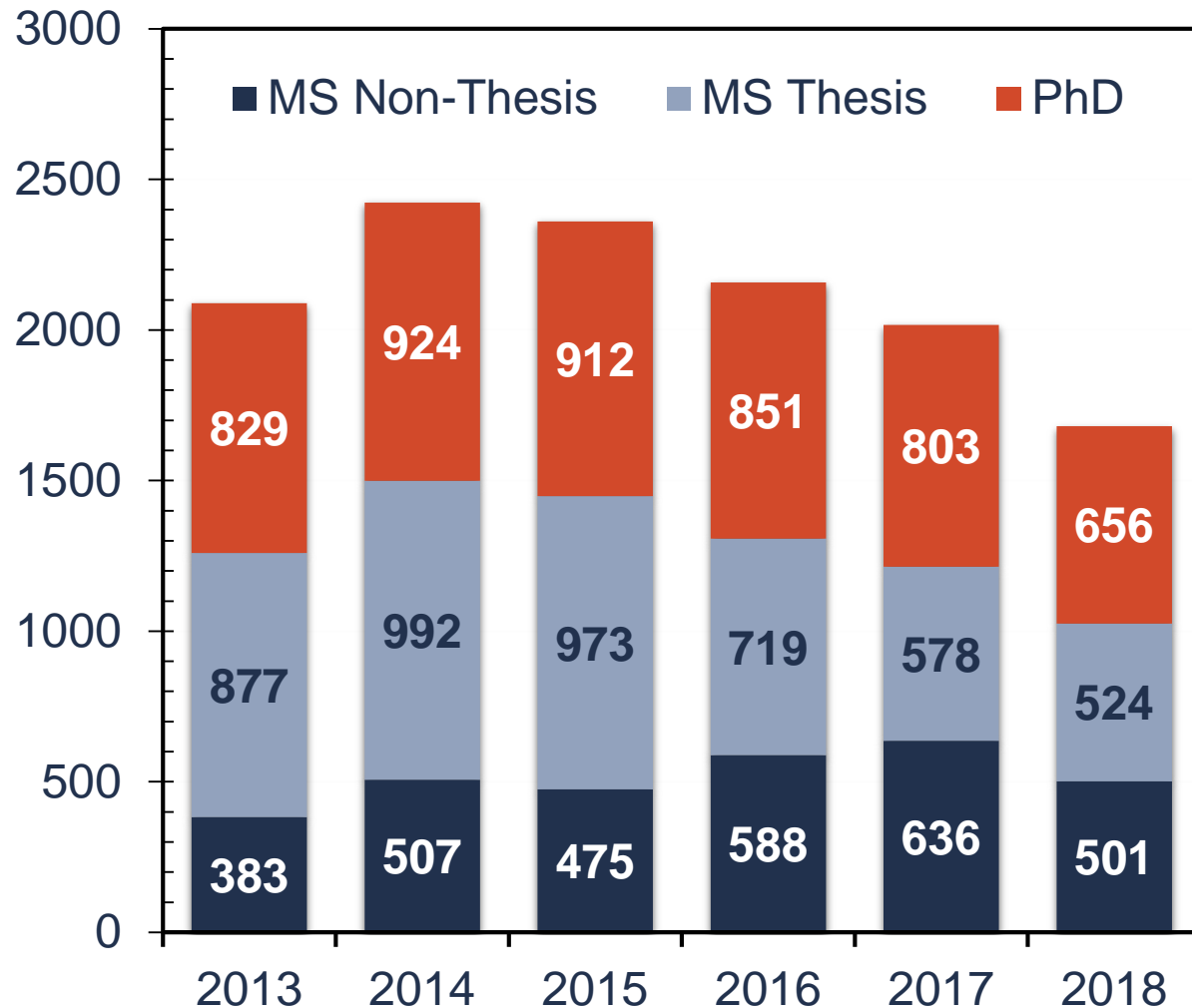
Student Enrollment



Undergraduate Applicants • Admits • Yield

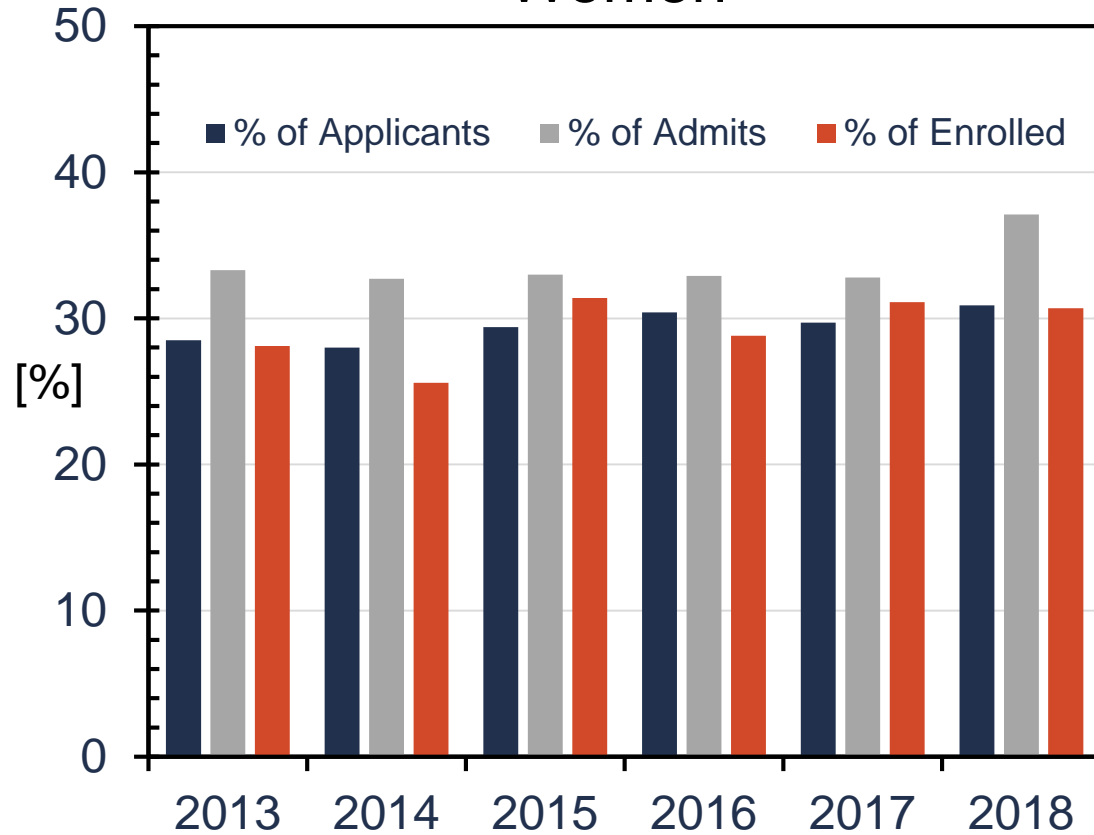


Graduate Applications

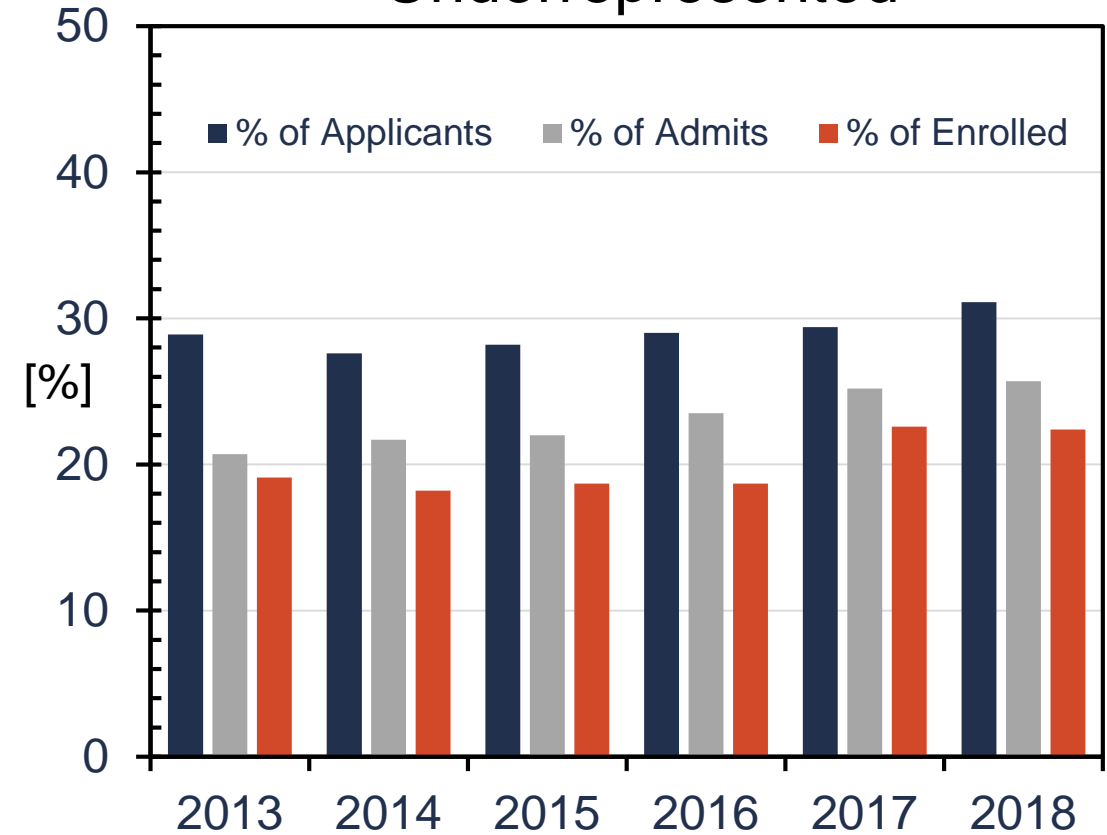


Sub-Population Apply • Admit • Enroll Data

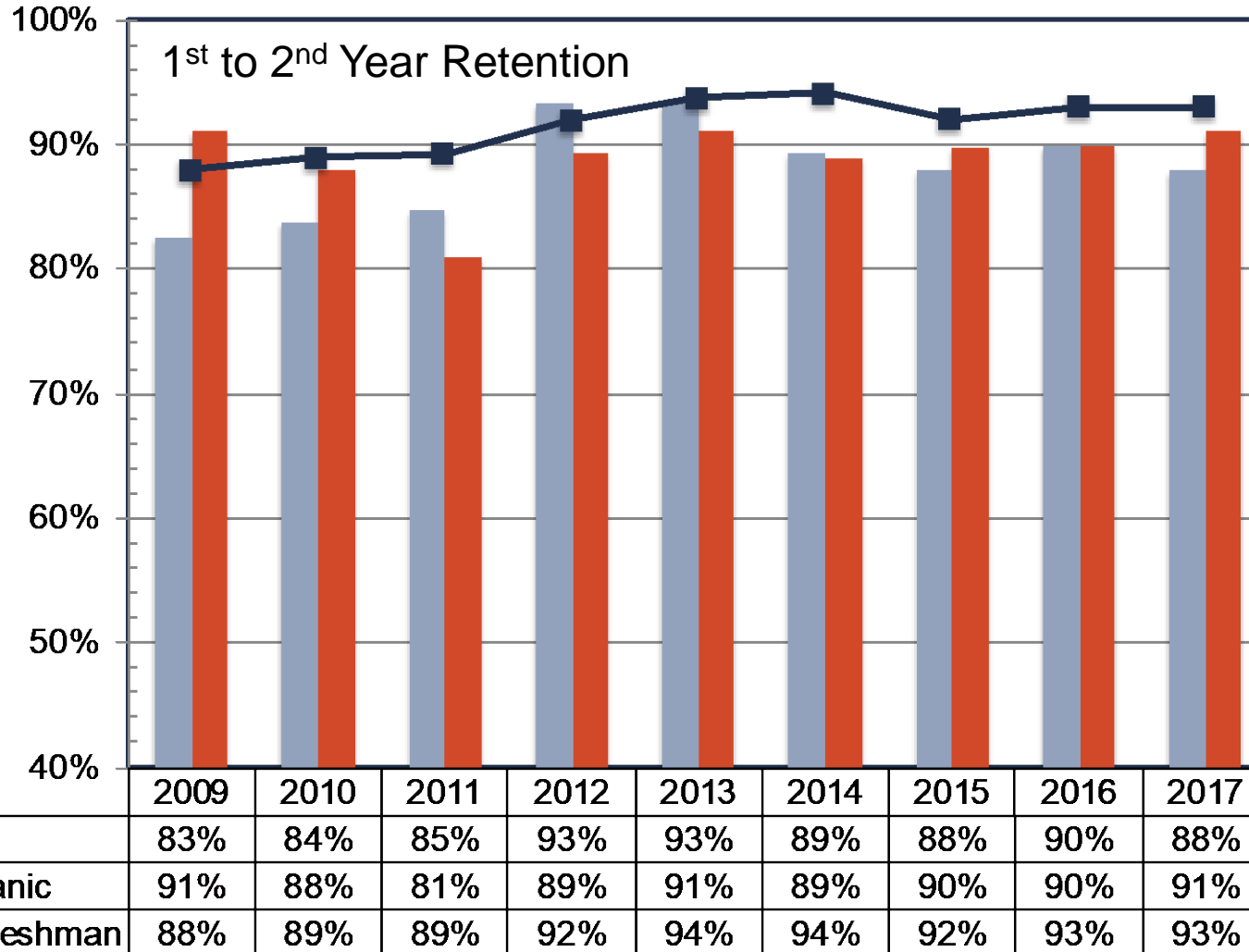
Women



Underrepresented

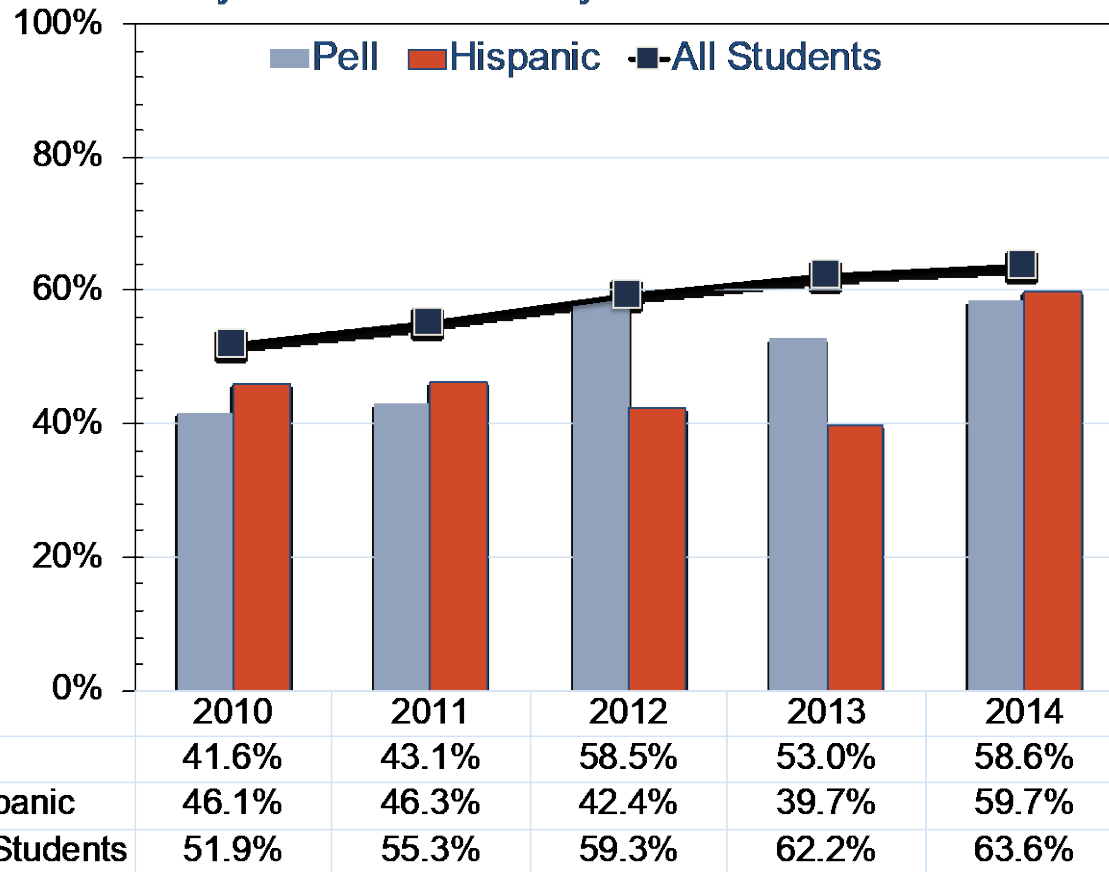


Student Success Indicators

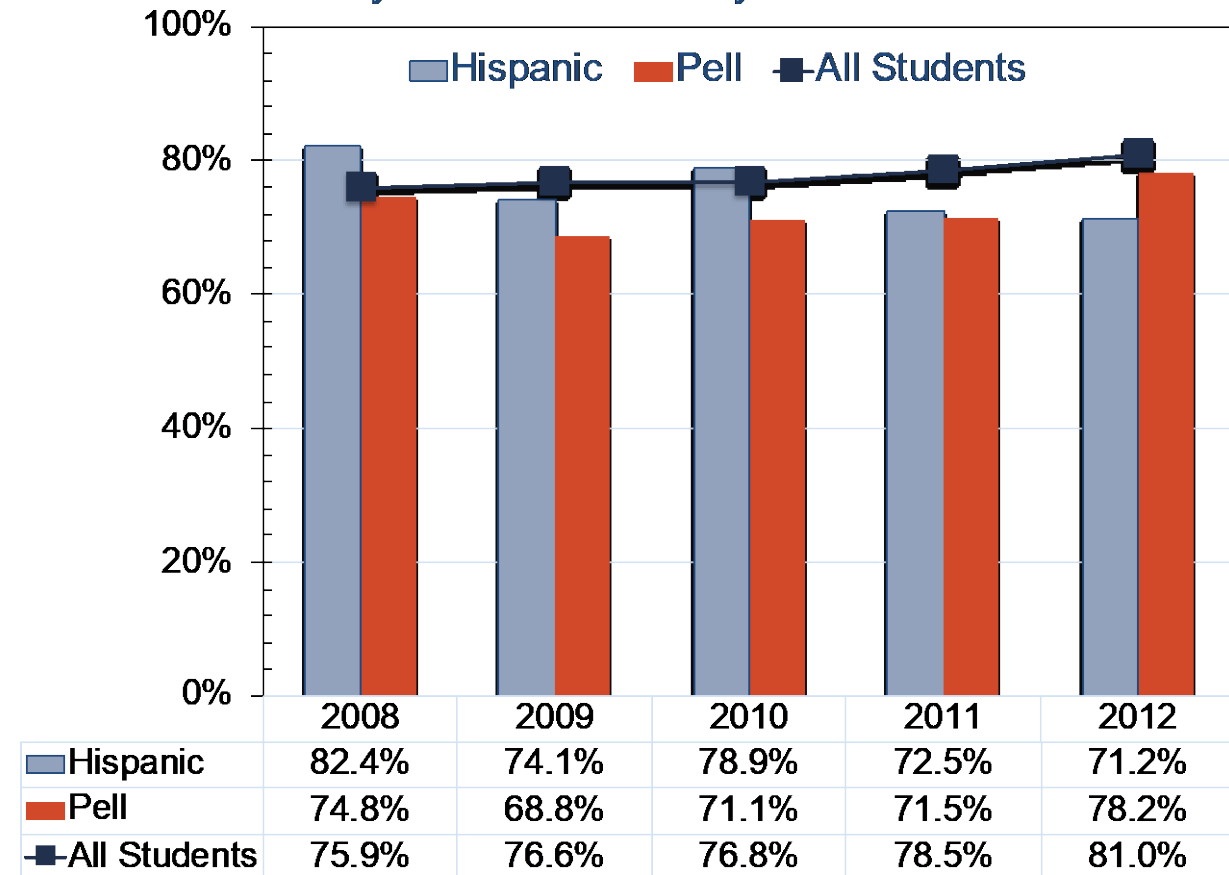


Student Success Indicators

4-year Grad Rate by Freshman Cohort



6-year Grad Rate by Freshman Cohort



Student Success: Employment Outcomes



July 30,
2018

Outcomes	August 2017 Grad Outcomes			December 2017 Grad Outcomes			May 2018 Grad Outcomes			2017-18 Combined Grad Outcomes		
	Current Week	Prior Week	Prior Year (Aug)	Current Week	Prior Week	Prior Year (Dec)	Current Week	Prior Week	Prior Year (May)	Current Week	Prior Week	Prior Year
BS	99%	99%	95%	90%	89%	88%	79%	78%	73%	83%	82%	78%
MS	96%	96%	97%	94%	94%	91%	87%	87%	88%	90%	90%	90%
PhD	100%	100%	92%	95%	95%	98%	86%	86%	97%	92%	92%	97%

2017-18 Graduates

Successful Outcome: BS (83%), MS (90%), PhD (92%)

Average Offers: BS (\$70K); MS (\$78K); PhD (\$80K)

MINES@150



Playbook



Approaching 150 Years

Today, MINES is a jewel in the higher education landscape; highly-respected locally and in industries and regions of the world aligned with our historical expertise in *earth, energy, and environment*.

Our longevity is attributable in part to our unique mission and success at:

Producing distinctive graduates. Employers particularly value their success in teams, resilience, grit, and ability to get things done.

Creating transformative and enduring value through the students we graduate, the discoveries we make, and the challenges we solve for industry and society.

Being a pioneer at the frontiers of science and engineering, from locating and recovering earth resources, to new energy production processes, new materials, advanced manufacturing processes, health innovations, and space exploration.

Surrounded by Dynamic and Disruptive Change

The world is changing.
As we look around, we
see threats to our future:

Competition: increasingly
competitive higher
education landscape

Relevance: changing
needs for education and
research

Complacency: believing
the status quo will succeed
in the future

MINIMAL PUBLIC
INVESTMENT

INCREASED
COMPETITION FOR
TOP STEM STUDENTS

THE 4TH INDUSTRIAL
REVOLUTION
IS HERE

DEMOGRAPHIC
SHIFTS IN COLLEGE-
BOUND STUDENTS



AUTOMATION: WE
CAN BE REPLACED

PREPARING FOR
JOBS THAT DON'T
EXIST TODAY

GLOBAL
EQUALIZING AND
NEW DELIVERY/
BUSINESS MODELS

MILLENNIAL AND
iGEN LEARNERS

Our Call to Action – The Imperatives

Based on the identified threats, a self assessment, and campus discussions, we know that **to succeed as a mid-sized and uniquely focused school, we must:**

- **be a top-of-mind and first-choice school** for students, public and private partners, and faculty and staff.
- **expand offerings and diversify delivery**, in particular for professionally-oriented pre- and post-graduate education.
- **grow the scale and impact of our research:** focus on thematic strengths, develop a more social research culture, diversify funding sources.
- **strengthen affinity** for MINES among our students, alumni, and external partners.
- **be more innovative and entrepreneurial**, especially in the use of our resources
- **attract private investment** to support our key strategic initiatives

Top-of-Mind and First-Choice

There is no single formula, but **top-of-mind and first-choice schools typically:**

- **have a strong brand identity**, likely built on well-known strengths in education and/or research, distinctive programs, and a signature student experience.
- **have attractive student success indicators** (high retention, graduation, employment, and return on investment).
- **are financially accessible** to qualified applicants from all backgrounds.
- **develop strong affinity** for the school among students, alumni, and partners.
- **are agile and entrepreneurial**.
- **have comprehensive partnerships** with industry and agencies, and other complementary education-focused entities

MINES@150: The Seven High-Level Goals

After considering our **call to action imperatives** and what it takes to be **first-choice and top-of-mind**, the MINES community has decided to focus our efforts around seven high-level goals:

**In 2024+
MINES will
be:**

A great community to
learn, explore, live and
work in

Accessible and
attractive to qualified
students from all
backgrounds

A leader in educating
STEM students and
professionals

A producer of
differentiated and
highly desired STEM-
educated leaders

A go-to place for use-
inspired research and
innovation needed for
challenges facing
industry and society

A preferred partner for
talent, solutions and
life-long learning

The exemplar for
alumni affinity, visibility
and involvement



Sample MINES@150 School-Level Initiatives

MINES@150 School-Level Initiatives	MINES@150 High-Level Goals						
	1	2	3	4	5	6	7
Family Friendly Initiative	•						
MINES Leadership Institute	•						
Diversity, Inclusion, Access Plan Development	•	•					•
Cohort Scholarship Programs	•	•	•	•			•
Trefny Innovative Instruction Center Initiatives			•	•		•	
Program-Level Pathways of Distinction Plans			•	•	•	•	•
Business Programs Expansion			•	•	•		
Alumni Special Interest Focus Groups		•	•	•			•
Oredigger Camp	•	•	•	•			•

1 - A great community to learn, explore, live and work in

2 - Accessible and attractive to qualified students from all backgrounds

3 - A leader in educating STEM students and professionals

4 - A producer of differentiated and highly desired STEM-educated leaders

5 - A go-to place for use-inspired research and innovation needed for challenges facing industry and society

6 - A preferred partner for talent, solutions and life-long learning

7 - The exemplar for alumni affinity, visibility and involvement

Sample MINES@150 School-Level Initiatives

MINES@150 School-Level Initiatives	MINES@150 High-Level Goals						
	1	2	3	4	5	6	7
Sibson Process Re-engineering Initiative	•				•	•	
Sibson Compensation Benchmarking Initiative	•						
Center for Entrepreneurship and Innovation		•	•	•	•	•	•
Payne Institute			•	•	•	•	•
Fryrear Chairs for Innovation and Excellence	•		•	•	•		
Honors Programs Expansion		•	•	•			•
Engineering, Design and Society		•	•	•			•
Thematic Research Institutes		•	•	•	•		
MINES Signature Student Experience Initiative		•	•	•			•

1 - A great community to learn, explore, live and work in

2 - Accessible and attractive to qualified students from all backgrounds

3 - A leader in educating STEM students and professionals

4 - A producer of differentiated and highly desired STEM-educated leaders

5 - A go-to place for use-inspired research and innovation needed for challenges facing industry and society

6 - A preferred partner for talent, solutions and life-long learning

7 - The exemplar for alumni affinity, visibility and involvement

Investing in Mines - \$4.2M FY19 Investment

- Mines@150
 - Online programs
 - Programs of distinction
 - Distinct student experiences
 - Expanding residential campus
- Core University Operations
 - Business process reengineering
 - Campus infrastructure
 - Market compensation assessment
 - Campus day care assessment



Recent and Upcoming Projects



50% increase in campus square footage in the last 10 years → 3.1m sf today



Campus Conversations 2017-18 and 2018-19

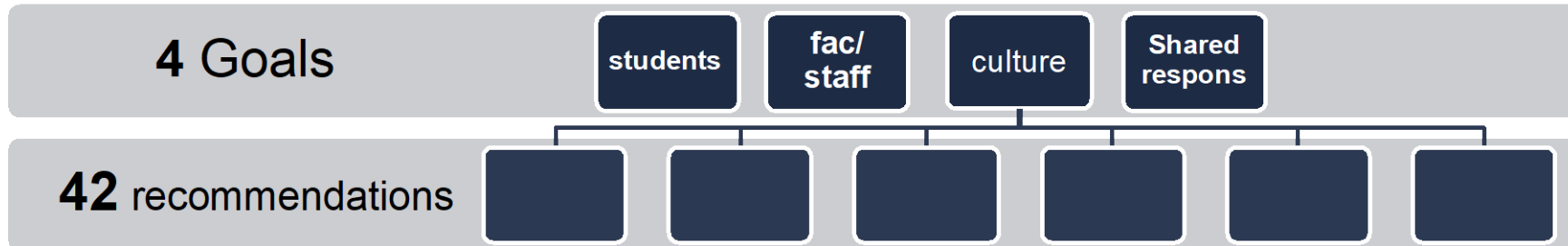
Strategic Plan for Diversity, Inclusion & Access

Council Charge:

- *Frame recommendations in a strategic plan*
- *Ensure recommendations are data driven*
- *Cultivate shared responsibility for DIA*
- *Expand pathways for success*

53 Mines community members on the council

The Strategic Plan has:



Progress to Date:

10 pilot programs this summer

24 pilots for Fall 2018

Example programs include:

Hiring Excellence
Practices for inclusive classrooms
Advocates & Allies

Want to get involved? Email amylandis@mines.edu





Campus Conversations 2017-18 and 2018-19

Research and Tech Transfer: Good News

NREL partnerships: NEXUS, joint appointments, and new degree program

Shared research equipment: a list (at last!) and a test of subsidies

New facilities in downtown Denver: collaborative biology space and water-energy technology hub

New proposal manager; consultants to assist with DOE, DOD, and DHS

Grad student fellowship proposal writing workshop for fall

Many campus visitors (funders, future partners, and legislators) and more to come

Small Business workshop

Admin and Ops Highlighted Accomplishments

- **Total Compensation Assessment** – completed phase I with approximately \$750,000 in equity adjustments made in July. More adjustments to come.
- **Business Process Re-engineering** – Seven areas highlighted for improvements; Shared Services first initiative to implement. Prioritization and action plans being developed for each area.
- **Enhancing Family Friendly initiatives** – Implemented Backup Care for Mines families; RTD Flex Pass; and moving forward on creating a Mines Day Care Center
- **New Model for continuing education programs and faculty workshops** – financial and operational

Highlights in Student Life 2017-18

- MEP - Leadership collaborative, Challenge program and new location
- ROTC – 30% increase in cadets; national awards and rankings for physical and academic achievement as a cadre. New location – corner of Illinois & 19th.
- Veterans Support Activities - Mines named a Top Veteran friendly school
- CARE Reports/CARE Team - 350+ students connected to resources(40% increase over last year)
- Oredigger Camp II – bigger, faster, stronger, better!
- Athletics - Mines won its 3rd consecutive RMAC All-Sports Competition Cup, finished 2nd in the RMAC Sportsmanship Cup, won 3 Brechler Awards for having the top team GPAs in respective sports, 4 RMAC Coaches of the Year and finished 6th in the nation in the Learfield Directors' Cup final standings out of ~ 310 D-II programs. Special shout out to our wrestling team!
- Career Center – Strong outcomes again (84%,90%,92%). New format and app/two locations this fall with record companies/recruiter participation (325+, 1200). Main Event-Tuesday September 11th, 9am-2:30pm
 - The Earth, Energy and Environment Event Center located in the Student Recreation Center
 - Aerospace, Bio and High-Tech Manufacturing Event Center located in the Steinhauer



Great Things Going On: Academic Affairs

- **New Degree Programs:** Quantitative Biosciences and Engineering, Advanced Manufacturing, Natural Resources and Energy Policy, BS Engineering
- **Online Programs:** Space Resources, Mining Engineering and Management, CS Certificates
- **New Hires:** 21 new academic faculty, other impactful hires (International Programs, Writing Center, First-Year Honors, Honors Director)
- **Incentive Programs:** Innovation Fund (\$1,500,00 over past two years), Programs Incentives (\$381,000 to 8 programs/departments in FY19)
- **Payne Institute:** New Director, annual Conference established

Mines Foundation

- **Arden Bement, Jr. Endowed Scholarship** - Provides financial aid to undergraduate students pursuing a degree in Metallurgical and Materials Engineering.
- **Jack Hancock Wrestling Center** – 45+ alumni and friends have contributed to renovate and rename the wrestling room to the Jack Hancock Wrestling Center.
- **Thorson First Year Honors Program** – Don Thorson made additional gifts in support of the First Year Honors Program.
- **The John E. Warne Geoscience Field Studies Research Endowment** – This fund, created by alumni, will support field research and related laboratory expenses for individual geology and geological sciences graduate studies and undergraduate field studies.
- **Samuel C. Sandusky Endowed Fund for Humanitarian Engineering** – This award provides student with travel awards to enhance their Humanitarian Engineering experience. Created by the estate of Samuel Sandusky'48.
- **Nickoloff E&I Faculty Fellowship** – Development of an Entrepreneurship & Innovation (E&I) Faculty Fellowship program by funding up to six faculty fellows participating in a 2018 summer workshop.
- **New Mines Water Center** – \$1.5 million gift from Zoma Foundation (Walton Family) to initiate a water center in Denver.
- **Ramona Graves Chair** - \$1 million gift from an alumnus in honor of Dr. Ramona Graves to establish a chair in her name.
- **Bliss Endowed Scholarship** – Anonymous \$1 million gift to support and honor the Bliss Endowment (first generation students).
- **Anonymous Gift of Property** – for Dr. Bob Kee to provide long term support his graduate students
- **A Month for Mines** – nearly \$200K raised for The Mines Fund with challenge match from alumnus and spouse
- **#idigmines** in its second year experienced a 15% revenue increase
- **Gold Mine crowdfunding** - hosted 19 projects, 1,000 donors and resulted in \$143K
- **Faculty & Staff giving** – record-high 360 donors (9% increase)
- **Student philanthropy** – record-high 527 student donors.
- **Alumni Programming and Engagement** – Successful launch of 4 Special Interest Groups aligned with strategic goals of the institution. 31 alumni-hosted welcome parties around the country Added 3 M Clubs and increased engagement opportunities for alumni by 12%.
- **Movement X** – a concept with a goal to unite the Mines community by more fully recognizing and celebrating all of our generous community's gifts of time, talent and treasure.



2018 Campus Conference Update



Q
U
E
S
T
I
O
N
S
?

2018 Campus Conference Update



August 17, 2018