

En Route to Mines@150



COLORADO SCHOOL OF MINES
EARTH • ENERGY • ENVIRONMENT

Campus
Conference **2016**

Paul C. Johnson, President and Professor

Outline

- **Reflection (AY 15-16)**
- **Metrics Snapshots**
- **Higher Education Landscape**
- **Strategic Plan (Mines@150)**
- **2016-17 Initiatives**



AY15-16 Reflection

- **Campus Make-over**
(CCAC, Starzer Welcome Center, Student Center, GRL Annex, Meyer Hall/CoorsTek, traffic changes...)
- **Accolades & Recognition**
(academics and athletics, professional growth, innovation)
- **Regrouping and Realigning**
(P&T expectations, alumni association, workload, business practices)
- **Recommitment to Teaching & Learning**
(Trefny Innovative Instruction Center)



AY15-16 Reflection

- **Resiliency Tests**
(GRL vandalism, litigation, campus moves, economy)
- **Taking a Hard Look in the Mirror**
(Title IX)
- **Eat, Talk, Travel, Figuring Out #17**
(aspirations, values, interests, opportunities, priorities, barriers)
- **What's Your Vision?**
(strategic plan(s), new initiatives, student numbers?)
- **Parking, Holidays, and Snow Days** 😊



Shared Values

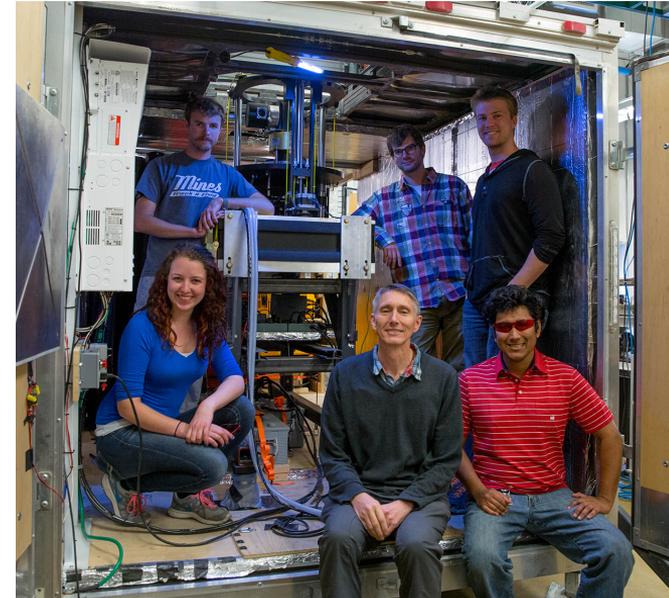
**Hard Work • Academic Rigor • Excellence •
Challenges • Resiliency • Teamwork**

Community • Location • Size • Students

**History • Traditions • Accolades • Student-
centric • Differentiated Mission • Connections**

**Creativity • Compassion • Innovation •
Impact • Teaching • Leading**

**Higher Calling/Purpose • Balance • Fun •
Recognition • Diversity • Inclusion • Access**

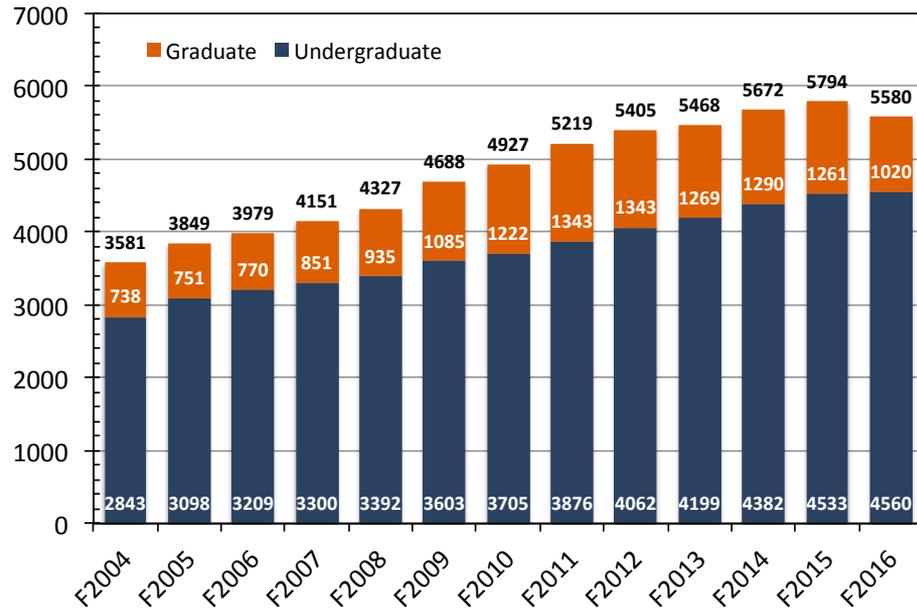


**Core Values • Aspirations
• Priorities • Initiatives**



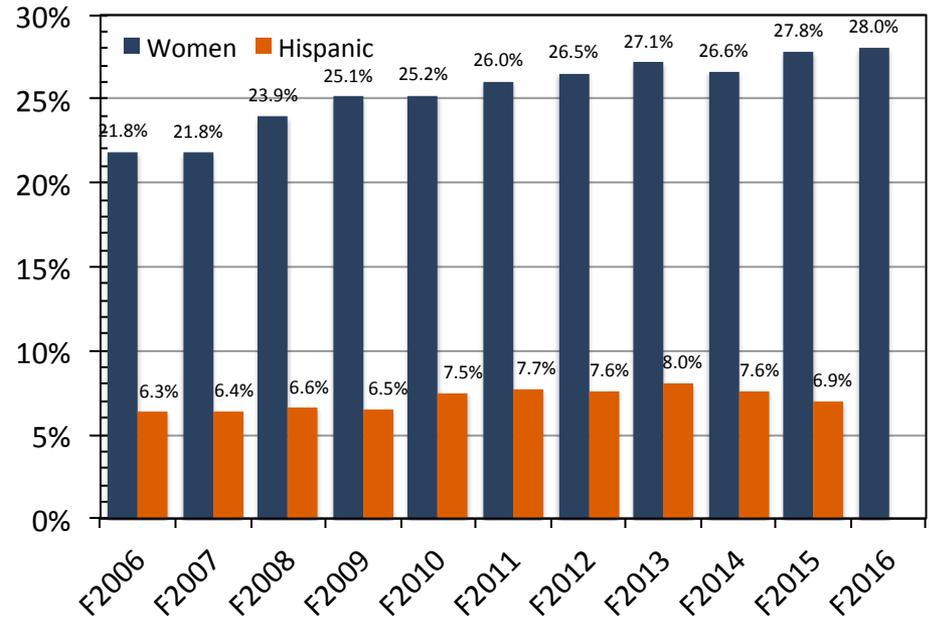
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Mines Snapshot and Trends



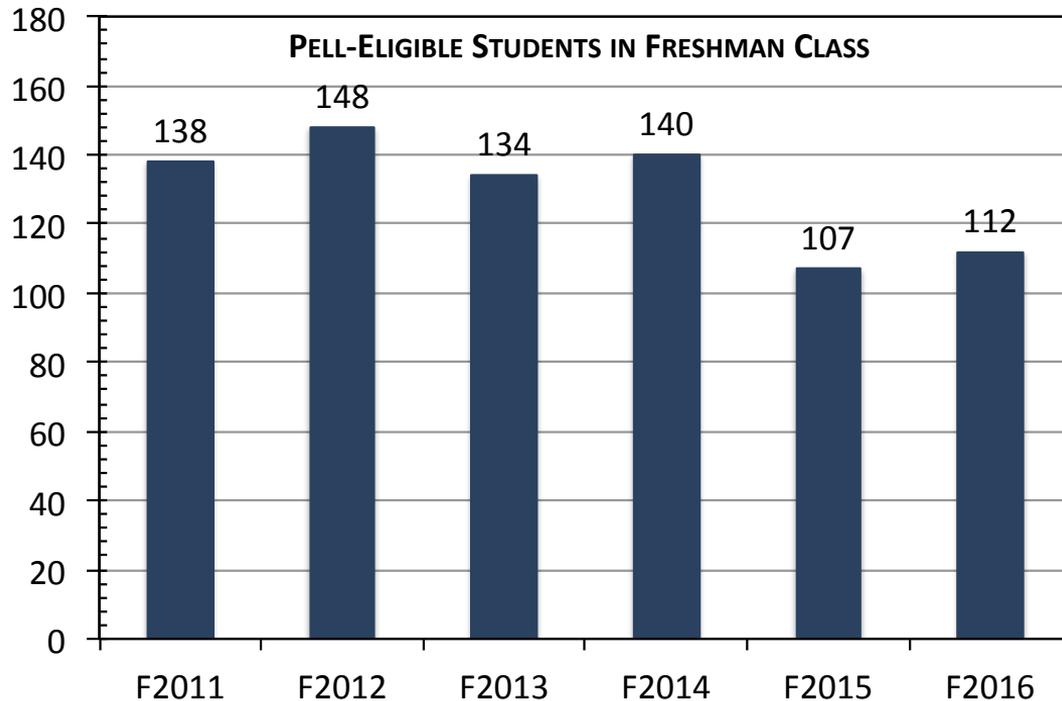
UG Apps/Yield/Quality: Strong/OK/High
Graduate Student Numbers?

Design Constraints (housing, classrooms, other)?



Little change in diversity recently;
Dissimilar to CO HS graduation demographics
(51.5% women; 26.4% Hispanic)

Mines Snapshot and Trends



Access to a Mines Education?

Only about 11% of AY2016-17 freshmen are Pell grant recipients

Correlation with tuition increases ?

Factors (recruitment and financial aid, projecting Mines)?

Our goal is a student population with demographics that mirror Colorado's high school graduates

Mines Snapshot and Trends

Mines' Investment in People to Enable Student Success and Research Growth

(2010 – 2016, with student enrollment +14%)

Tenured/Tenure-Track: 205 (+11% from 2010)

Teaching Faculty: 79 (+66% from 2010)

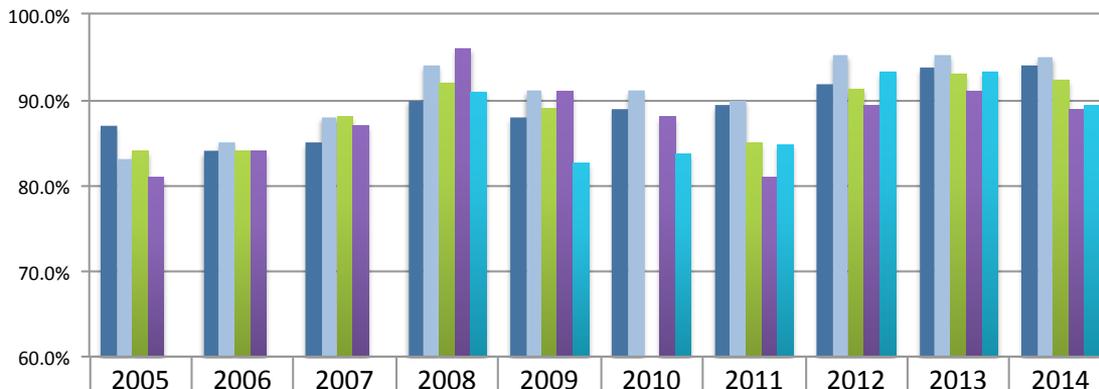
Adjunct Faculty: 131 (+35% from 2010)

Staff, Advisors, etc.: 576 (+23% from 2010)



Mines Snapshot and Trends

Freshman Cohort Retention to 2nd Year



All Freshman	87.0%	84.0%	85.0%	90.0%	88.0%	89.0%	89.3%	91.9%	93.7%	94.1%
Female	83.0%	85.0%	88.0%	94.0%	91.0%	91.0%	90.0%	95.2%	95.2%	95.0%
URM	84.0%	84.0%	88.0%	92.0%	89.0%		85.0%	91.3%	93.0%	92.3%
Hispanic	81.0%	84.0%	87.0%	96.0%	91.0%	88.0%	81.0%	89.4%	91.0%	88.9%
Pell				90.9%	82.6%	83.7%	84.8%	93.2%	93.3%	89.3%

Significant Improvements
over 10 year period

Overall, strong retention
for a STEM-focused
institution

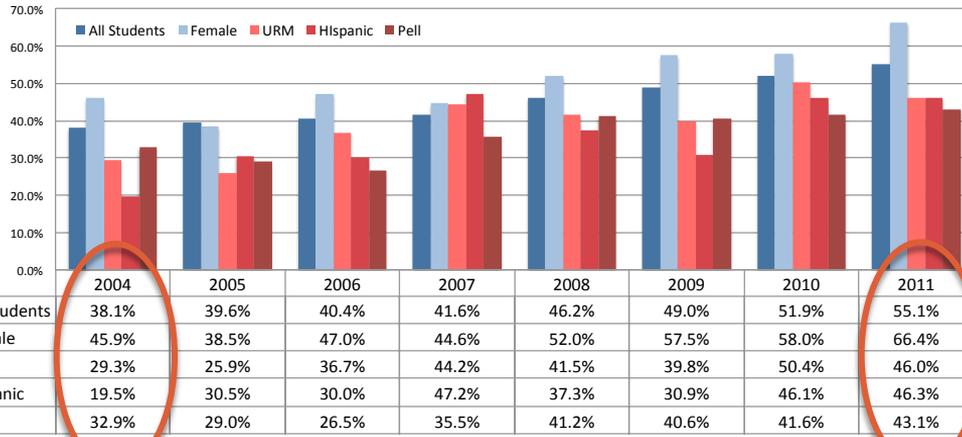
Focused efforts to improve
retention in some groups
(e.g., “Nucleus” First-
Generation Community)



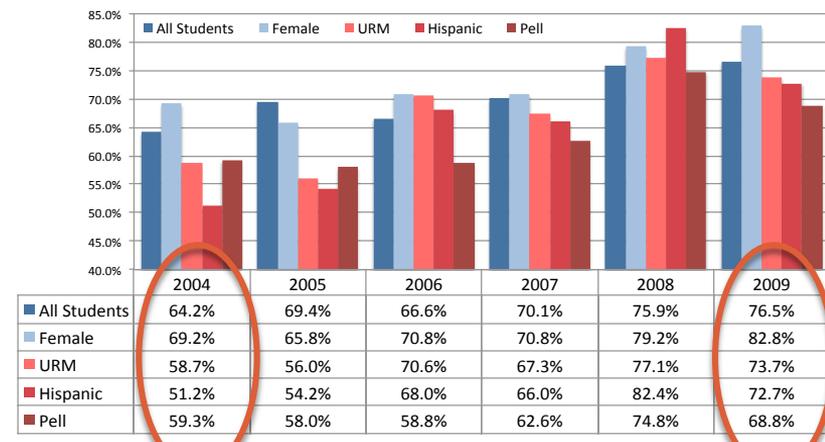
Mines Snapshot and Trends

Time to Graduation

4-yr Grad Rate by Freshman Cohort



6-yr Grad Rate by Freshman Cohort



(+) Impressive improvements over the past decade

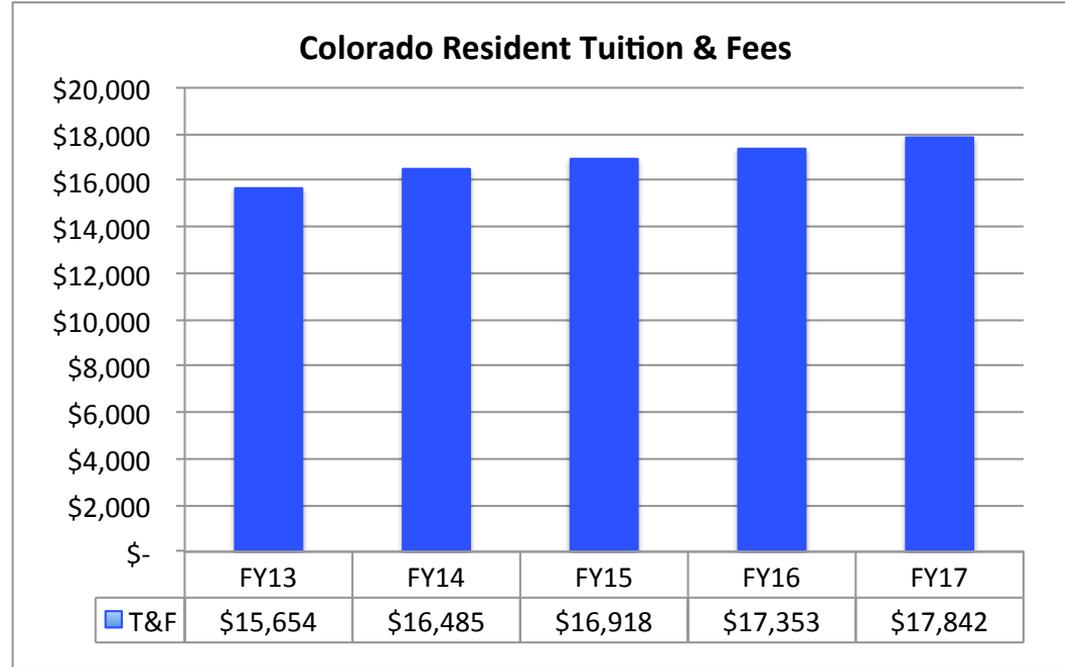
(-) Not a compelling argument to attend Mines, especially to the top students in the country and those worried about the cost of their degree and ROI

Need to eliminate institutional constraints on time to graduation

Mines Snapshot and Trends

- (+) Mines tuition is lower than many other STEM-focused universities (most of which are privates)
- (-) Mines tuition is higher than many public institutions offering similar programs
- (-) The top students we recruit are offered significantly discounted tuition at other institutions

We need to offer differentiated programs, experiences, services, and outcomes to compete.



Mines Snapshot and Trends

Funded Research and Creative Activities & Innovation

Years	Research Expenditures (in millions)	New Licenses and Options	Total Active Licenses	Start-ups	Disclosures	Patents Issued	New Patent Apps	License Income
2015	\$64	9	42	0	49	10	38	\$121,000
2014	\$54	6	38	0	42	12	33	\$95,000
2013	\$61	6	33	1	33	2	17	\$89,657
2012	\$56	9	31	2	33	9	22	\$124,480
2011	\$47	7	26	2	24	4	16	\$120,000
2010	\$54	8	20	1	22	3	15	\$74,000
2009	\$51	4	13	1	11	2	6	\$32,000

FY16 expenditures flat at about \$60M

Increases in IP activity

Research Task Force Recommendations:

Differentiated workloads, internal investments linked to output and impact, research neighborhoods, themed institutes, strategic faculty hires

Mines Snapshot and Trends

Finances:

- State support (\$20M/year) – at best stable, could decrease due to TABOR restrictions; SB-3 constraints
- CSMF support (\$21M/year) – expected to be flat (economy down, donors up)
- Gross Tuition Revenue (\$130M/year) = tuition x student numbers – modest increases in tuition in near future

Optimize use of our existing capacity

Changes to internal budget model

Pursue alternative revenue sources

MINES FOUNDATION



Mines celebrates the successful completion of Transforming Lives: The Campaign for Colorado School of Mines in October

DURING THE CAMPAIGN, DONORS FUNDED:

- Nearly half a billion dollars invested in Mines
- 10 new faculty positions
- 4 new buildings with the fifth – CoorsTek Center for Applied Science and Engineering – going up now
- An 18% increase in the total number of donors over last year

Landscape

Higher Education Landscape

Low state support – burden on students & families

Press/political focus on tuition increases and debt

Family focus on cost, debt, jobs

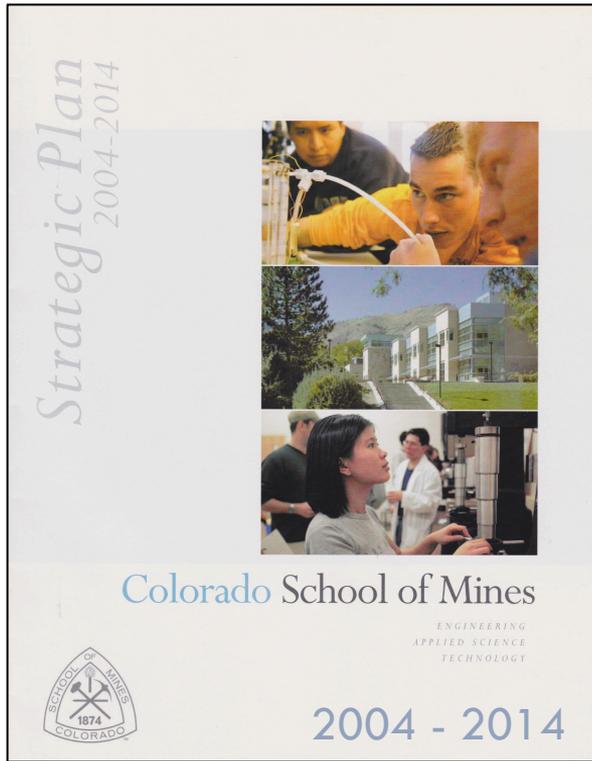
All face the same financial challenges - what are others doing?

- Large public schools?
- Small private schools?

Need to minimize aggregate cost to degree, show strong ROI, supplement tuition revenue



Strategic Plan(s)

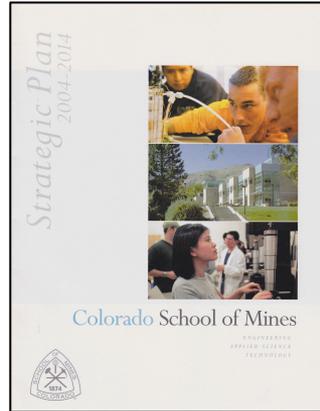


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Strategic Plan(s)

- Cultivate world-class expertise in key focus areas
- Enhance Mines distinction as a research institution
- Sharpen Mines distinction in undergraduate education
- Align graduate programs with professional and societal needs
- Realign the geographic, demographic, and programmatic mix of students
- Expand the financial resource base
- Restructure the deployment of financial resources and capital assets

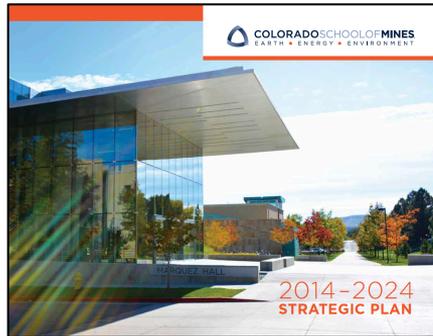
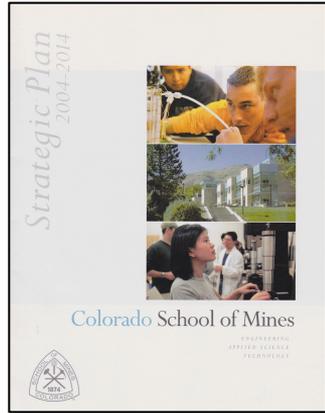


- Enhance the distinctive identity and reputation of Mines
- Build upon a student-centered campus culture of excellence, inclusion, diversity, and community
- Build and diversify revenue streams and auxiliary enterprises
- Develop and support campus infrastructure and processes to match Mines' aspiration to become a top-tier engineering and science institution



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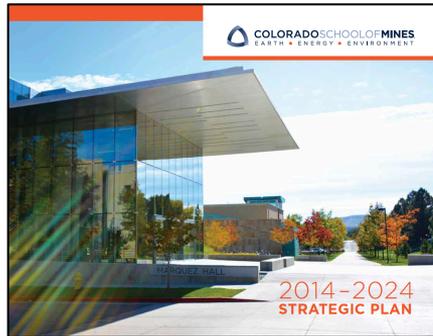
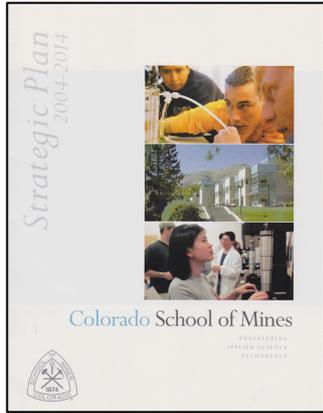
Strategic Plan



Aspirations & Metrics

- Recognized in the Top-10 of similarly-sized peer institutions
- 4-Year graduation rate of 60%
- 6-Year graduation rate of 85%
- >\$100M (or \$50M) in research expenditures
- Financially self-sustaining
- \$10M or (>\$2M) in professional education revenue
- Endowment >\$250M
- 95% of graduates (all) report that they would have chosen Mines again

Strategic Plan



Reflection

- Re-commit to being “student-centric” and “Mines-centric”
- Focus on being “exceptional” (= excellence + distinction) in all areas
- Reset aspirations, metrics, and expectations for ourselves in all areas, with consideration of best-in-class performance of peer institutions
- Add new metrics related to core values (e.g., access)
- Need a university design, with principles to guide new investment, divestment, and optimization of resources to maximize student success, scope and impact of research enterprise, and achieving aspirational metrics

Strategic Plan

Near-Term Initiatives:

- **Exceptional programs** for exceptional students (stress professional preparation and longer-term career horizons)
- **Accessible education** (reduce time and cost to degree completion)
- **Social research culture** (thematic neighborhoods/institutes, GC problems)
- **Compelling communications** (recruitment, reputation, resources)
- **Redesign** administrative structures and processes to support institutional priorities
- **Entrepreneurial efforts** (students, staff, faculty)
- **Professional development** (people, leaders)
- **Diversify resources** and optimize use of existing capacity
- **Recognition and Rewards**

\$1M Innovation Fund
for 2016-17





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