ENGINEERING AT S&T
Rotary Club of St. Louis
Dr. Christopher G. Maples, Interim Chancellor
March 7, 2019
“Science can amuse and fascinate us all, but it is engineering that changes the world.”

– Isaac Asimov
American writer
Professor of biochemistry
ASIMOV 2019 PREDICTIONS

WHAT HE GOT RIGHT

> “Computerization will undoubtedly continue onward inevitably.”
> The “mobile computerized object” will “penetrate the home” and make it impossible to live without.
> Computers will disrupt work habits and replace old jobs with radically different jobs.
> Robotics will kill “routine clerical and assembly-line jobs.”
> Society will need to become computer literate.
> Technology will revolutionize education.
ASIMOV 2019 PREDICTIONS

WHAT HE GOT WRONG

> Traditional schooling would become outdated as children learn what they need from computers at home.
DISTANCE EDUCATION

> Enrollment in distance education increased nationally for 14 years straight.

> 30% of higher education students take at least one distance education course.

> Missouri S&T offers 18 graduate degree programs, and 60 graduate certificate programs that can be applied toward a master’s degree.
Next NGA West will be located on 97 acres within the historic St. Louis Place neighborhood.
PARTNERSHIP WITH UMSL

ENGINEERING CLASSES IN ST. LOUIS

> We will soon partner with University of Missouri-St. Louis to offer engineering courses in St. Louis.

> The program will be modeled after successful partnership in Springfield with Missouri State.

> S&T offers courses in civil engineering, electrical engineering and mechanical engineering in Springfield.
WHAT EMPLOYERS WANT

NACE CORE COMPETENCIES FOR CAREER READINESS

> Critical thinking/problem-solving
> Oral/written communications
> Teamwork/collaboration
> Digital technology
> Leadership
> Professionalism/work ethic
> Career management
> Global/intercultural fluency
Concrete Canoe Design Team celebrates at Little Prairie Lake near Rolla
2017 World Champion Mars Rover Design Team
2017 Mars Rover Design Team at Maker Faire
Human-powered vehicle design team members show race car to children at the St. Louis Science Center during Engineers Week 2019
MISSOURI RANKED 4TH NATIONALLY FOR PLTW

> Hands-on projects in career pathways in computer science, engineering and biomedical science in PreK-12.

> More than 860 PLTW programs in 600 Missouri schools. 52 districts offer PLTW in every grade!

> Missouri S&T is one of only 17 national teacher training partners.
Challenges

> Only 42% of Missouri businesses report satisfaction with the state’s availability of skilled workers.

> Most 45-54 year olds will retire in next 20 years.

> U.S. predicts 4.4% population growth among 25-44 year olds over the next 10 years, Missouri 25-44 year olds will only grow at a 2.5% rate.

> About 2.6 million adults in Missouri don’t have post-secondary degrees.
Opportunities

> In the last 10 years, computer system design and service jobs have increased 75% in Missouri.

> Jobs in technical and scientific management have grown by 78% in Missouri.
STEM JOBS GROWING IN MISSOURI

Missouri Economic Development
> From 2014-2024, total STEM jobs in the state will increase to over 390,000 – an increase of 40,000 jobs.
> STEM makes up 5.3% of Missouri employment.
> The Average wage for STEM-related jobs is $73,490.
> STEM jobs earn 80% more than the Missouri average.
FUTURE OF ENGINEERING

MISSOURI STEM MAJORS INCREASING

> In FY 2018, University of Missouri awarded 18,455 degrees and 5,760 or 31% were from STEM programs.

> Number of STEM grads increased almost 20% in the last five years from 4,630 to 5,760.

Missouri S&T in FY 2018

> Graduated 2,662 students and 2,464 or almost 93% were STEM majors.

> Awarded more than 2,000 degrees in engineering and engineering technologies.
SUCCESSFUL GRADUATES

Return on Investment
$753,000 20-year net ROI
6th in the nation for public & private
1st in Missouri public colleges

2018 PayScale College ROI Report

Average undergraduate starting salary:
$63,892

Average graduate starting salary:
$72,622

2018 Fall Career Fair:
331 employers
3,673 students

S&T’s Career Opportunities and Employer Relations (COER)
CLAYCO ADVANCED CONSTRUCTION AND MATERIALS LABORATORY

- Will add 16,000 square feet of research space
- Addition to High-bay Structures Laboratory in Butler-Carlton Civil Engineering Hall
- $6.5 million raised
- Broke ground (poured cornerstone) Oct. 12, 2018
STUDENT REC CENTER EXPANSION

> $4 million expansion project, added 10,000+ square feet, more than doubled number of fitness machines
> Funded by student fees, voted on by students
> Opening May 2019
DESIGN CENTER EXPANSION

- Double the space of the Kummer Student Design Center from 4,000 to 8,000 square feet
- Groundbreaking in April, completion in December 2019
THANK YOU!

Homecoming 2020 will kick off S&T’s celebration of 150 years