

College Of Engineering Research Report

Phillip De Leon,
Associate Dean for Research

Research Highlights

Researcher Highlights Fall 2017 Convocation

- University Research Council (URC) Award for Excellence: Profs. Bawazir, Khandan and Xu, for NSF Engineering Research Center (ReNUIIT) (CE)
- University Research Council (URC) Award for Excellence: Catie Brewer (ChE)



Prof. Brewer's research is in biomass thermochemical processing which aims to "transform waste materials into energy, into clean water, and into improved sustainability for agriculture"

Prof. Catie Brewer's (ChE)



Prof. Xu's research is in sustainable technologies for water and wastewater treatment which aims to "augment water supplies from impaired water resources (such as wastewater, brackish water) while balancing energy consumption, ecological impacts," and other factors

Prof. Pei Xu (CE)

New Research Grants and Contracts

- Prof. Chen (MAE) awarded \$353K, Prof. Drach (MAE) awarded \$160K, Prof. Mitchell (ECE) \$188K - National Science Foundation (NSF)
- Prof. Xu (CE), awarded \$400K - Dept. Interior, Bureau of Reclamation
- Profs. Brahma (ECE) awarded \$61K, Prof. De Leon (ECE) awarded \$142K - Sandia National Laboratories
- Dr. Hardy (CEMRC) awarded \$185K -Nuclear Waste Partnership
- Prof. Gross (MAE) awarded \$116K -Air Force Research Laboratory (AFRL)

NMSU ranked 1st in U.S. for federal obligations for science and engineering activities for minority-serving institutions according to NSF's National Center for Science and Engineering Statistics



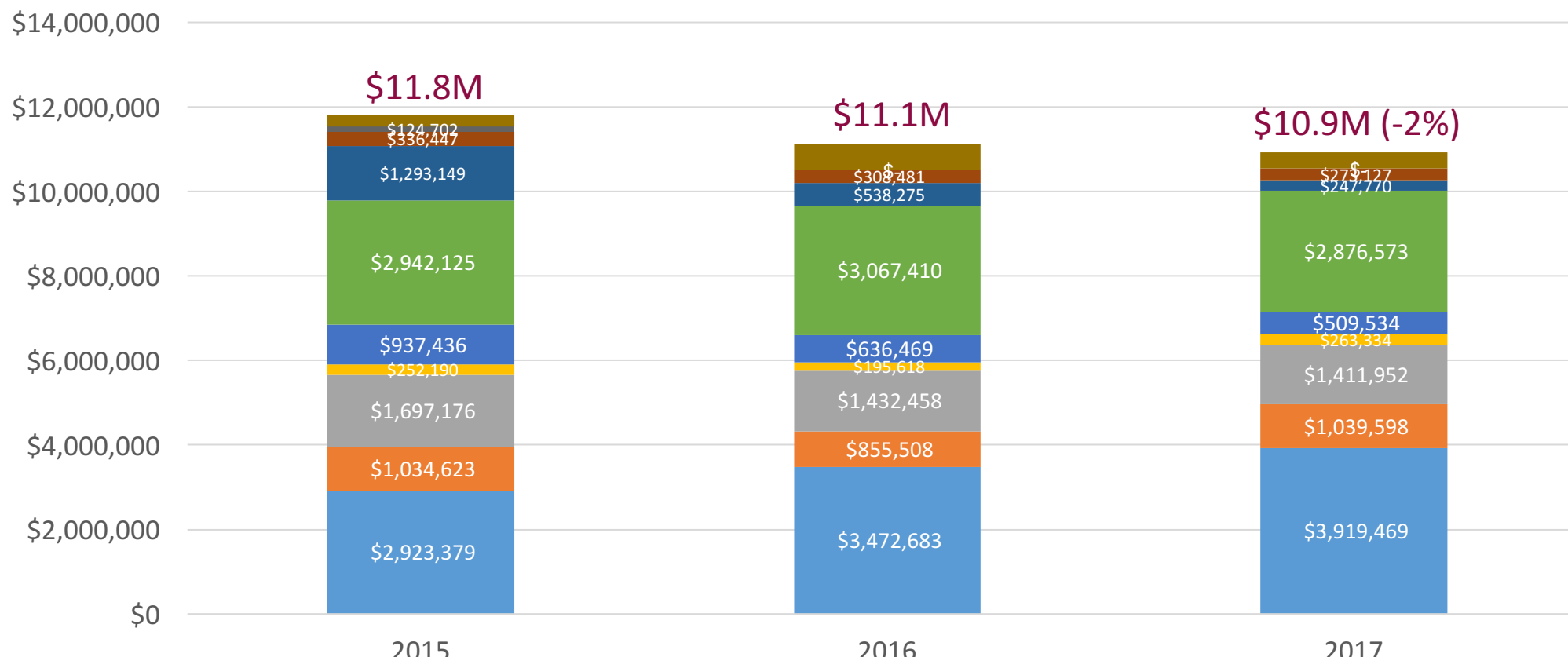
An AECOM-led partnership with BWXT and AREVA



Research Activity Data

Annual Research Expenditures

■ CAGE
 ■ ChE
 ■ ECE
 ■ ET/IE
 ■ MAE
 ■ CEMRC
 ■ IEE/WERC
 ■ M-TEC
 ■ SWTDI
 ■ Outreach

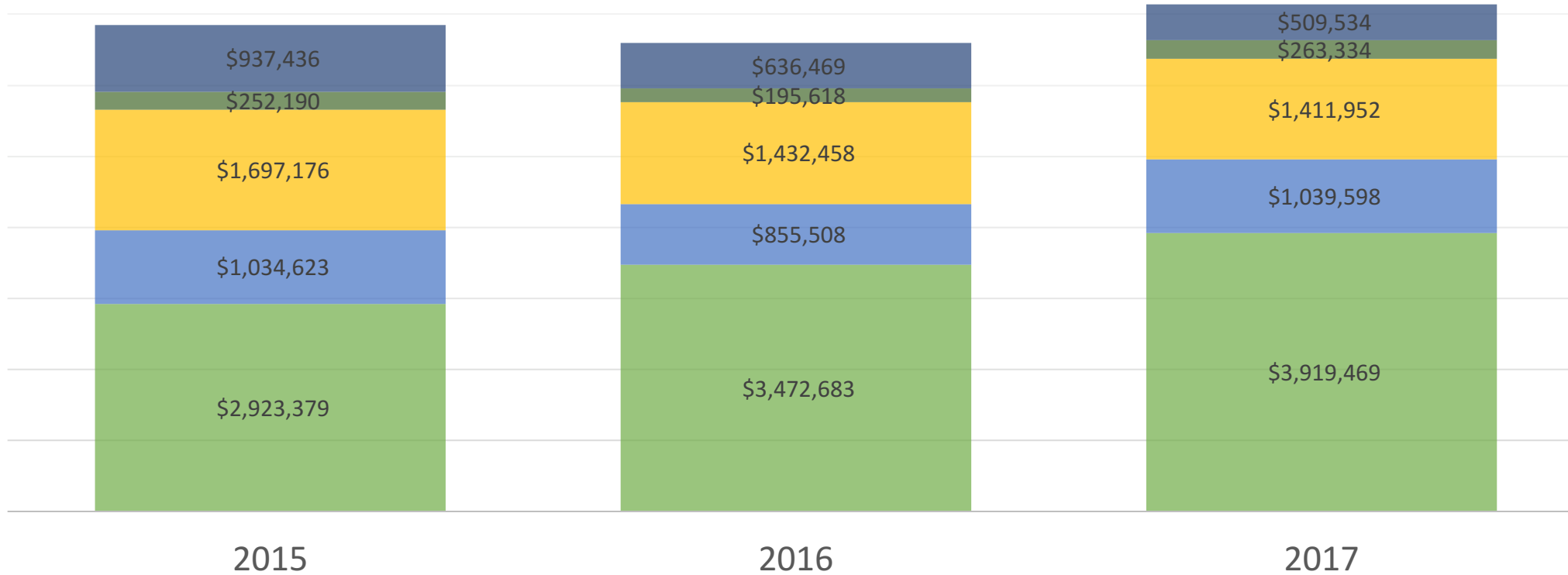


- + All academic depts (except MAE)
- + Total academic dept. research expenditures highest in 3yrs (next slide)
- State appropriations (-\$256K)
- CEMRC (increase in FY16 for accident)

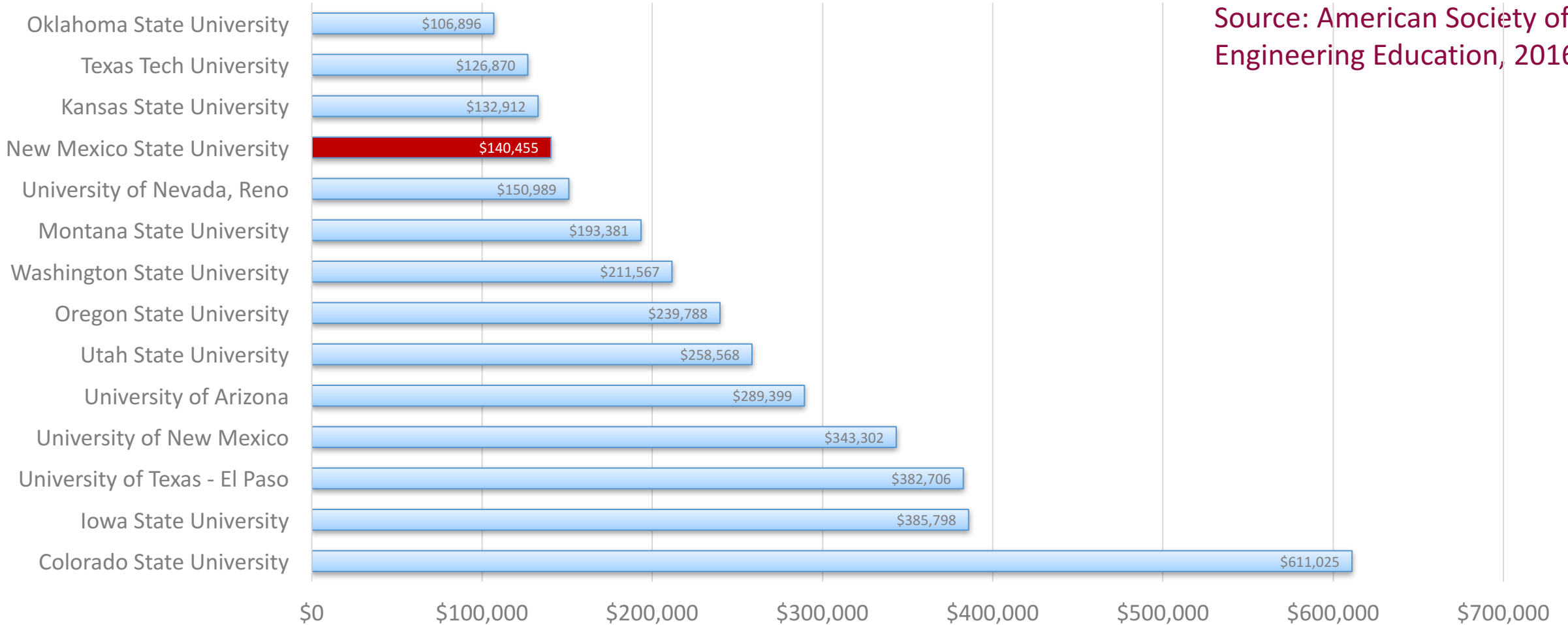
Faculty Research Expenditures

■ CAGE ■ ChE ■ ECE ■ ET/IE ■ MAE

College Average: \$86K/faculty (+4%)
Excl. CEMRC, IEE/WERC, outreach, etc



Peer Institution Comparison: Funding Per Faculty FTE

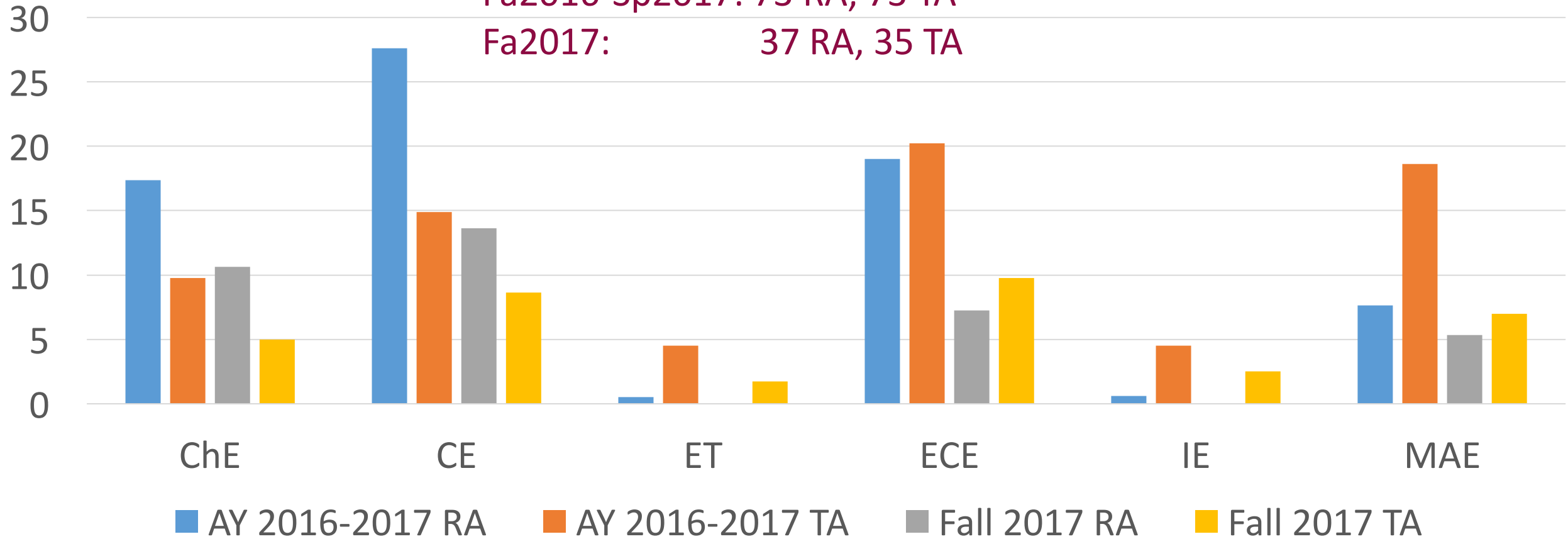


Source: American Society of Engineering Education, 2016 Ed.

Graduate Assistants (FTE)

Fa2016-Sp2017: 73 RA, 73 TA

Fa2017: 37 RA, 35 TA



Recent Activities of the Office of Engineering Research

- Name change to “Office of Engineering Research (OER)” from “Engineering Research Center (ERC)”
- Supported ten faculty startup packages \$122K (FY17), budgeting \$150K (FY18)
- Supported five faculty trips to federal research program managers
- Hired four additional teaching assistants (Fall 2017), expect additional support (Spring 2018) \$100K
- Awarded “mini-grants” for research proposal development efforts \$50K (FY 2017), budgeting \$50K (FY18)
- Awarded tuition stipends for PhD students \$30K and funds for graduate conference travel
- Formalized publication requirements for PhD and initiated PhD seminar program (with S. Cooper)
- New graduate student orientation (with S. Cooper)
- Financial support (with ChE) of winning WERC design contest team (Prof. Xu)
- Wound down inactive IEE/WERC Geothermal site at A-mountain

New Initiatives of the Office of Engineering Research

- Forming advisory team for college's research strategic plan
- Beginning undergraduate research program \$20K (Spring 2018) as pathway to graduate school
- Formed committee to lead college-level seminar series (~8) with nationally-recognized, researchers in College's technical strength areas and emerging research areas
- Supporting new research project at Carlsbad Environmental Monitoring Research Center (CEMRC) \$20K
- Forming committee to advise on research support in Energy, Environment, and Water using WERC endowment earnings (~\$160K)
- Cost share for NMSU in National Alliance for Water Innovation (NAWI) Clean Water Hub
- Investigating new software systems to support grant management, pre-award, and post-award

Research Opportunity: Desalination

- NSF-ERC ReNUWIt
 - Recovery of energy and resources from wastewater
 - Desalination and concentrate management
 - Storm water management
- Bureau of Reclamation Funded Research
 - Innovative membranes for enhanced water reuse and desalination
 - Integrated algae/membrane system for potable water reuse
- Desalination Hub in collaboration with national labs



Questions?