

COE Annual Faculty Meeting

May 11, 2017



UC DAVIS
COLLEGE OF ENGINEERING



Jamal Levels
Assistant Professor, Mechanical Engineering
Ph.D., University of Florida (2002)



Karen Mason
Assistant Professor, Mechanical Engineering
Ph.D., University of Colorado (2009)



Alyssa Panitch
Assistant Professor, Chemical and Petroleum
Engineering, Ph.D., University of Wisconsin-Madison (2005)



Coleman Kronawitter
Assistant Professor, Mechanical Engineering
Ph.D., UC Berkeley (2010)



Priya Shah
Assistant Professor, Chemical Engineering
Ph.D., UC Berkeley (2010)



Jason White
Assistant Professor, Chemical Engineering
Ph.D., University of Connecticut (2008)



Heather Bischof
Assistant Professor, Civil
and Environmental Engineering
Ph.D., Stanford University (2010)



Colleen Bronner
Assistant Professor, Civil and Environmental Engineering
Ph.D., State University of New York, Bingham (2014)



Alexander Forrest
Assistant Professor, Civil
and Environmental Engineering
Ph.D., University of Wisconsin-Madison (2010)



Jonathan Herman
Assistant Professor, Civil
and Environmental Engineering
Ph.D., University of North Carolina (2010)



Maureen Kinyua
Assistant Professor, Civil
and Environmental Engineering
Ph.D., University of North Carolina (2010)



Alejandro Martinez
Assistant Professor, Civil
and Environmental Engineering
Ph.D., Stanford University (2010)



Sabbie Miller
Assistant Professor, Civil
and Environmental Engineering
Ph.D., Stanford University (2010)



Veronica Morales
Assistant Professor, Civil
and Environmental Engineering
Ph.D., Cornell University (2010)



Holly Oldroyd
Assistant Professor, Mechanical Engineering, Ph.D., Ecole Polytechnique
Paris (2010)



Katerina Ziotopoulou
Assistant Professor, Mechanical Engineering
Ph.D., UC Berkeley (2010)



Srabanti Chowdhury
Assistant Professor, Mechanical Engineering
Ph.D., Stanford University (2010)



Shuguang (Robert) Cui
Assistant Professor, Electrical and Computer
Engineering, Ph.D., Stanford University (2010)



J. Sebastian Gomez-Diaz
Assistant Professor, Electrical and Computer Engineering
Ph.D., Technical University of Catalonia, Spain (2010)



Lifeng Lai
Assistant Professor, Electrical and Computer Engineering
Ph.D., Ohio State University (2010)



Hooman Rashtian
Assistant Professor, Mechanical and Computer Engineering
Ph.D., University of British Columbia (2010)



David Doty
Assistant Professor, Mechanical Engineering
Ph.D., Ohio State University (2010)



Kurt Eiselt
Assistant Professor, Mechanical Engineering
Ph.D., University of California, Irvine (2010)



Cho-Jui Hsieh
Assistant Professor, Mechanical Engineering
Ph.D., University of Texas, Austin (2010)



Susan Gentry
Assistant Professor, Materials Science and Engineering
Ph.D., University of Michigan, Ann Arbor (2010)



Roopali Kukreja
Assistant Professor, Materials Science and Engineering
Ph.D., Stanford University (2010)



Seongkyu Lee
Assistant Professor, Mechanical and Aerospace Engineering
Ph.D., Pennsylvania State University (2010)



Xinfan Lin
Assistant Professor, Mechanical and Aerospace Engineering
Ph.D., University of Michigan (2010)



Jason Moore
Assistant Professor, Mechanical and Aerospace Engineering
Ph.D., University of California, Davis (2010)



MEETING MINUTES

- UNIVERSITY OF CALIFORNIA, DAVIS
VOLUME XXXVIII, NO. 3
- ACADEMIC SENATE
- MINUTES (POSTED TO THE COE INTRANET)
- REGULAR MEETING
- FACULTY OF THE COLLEGE OF ENGINEERING
(DAVIS)
- MAY 11, 2017, 3:00 P.M., 1065 KEMPER HALL

Order of Business

1. Announcements by the President, Janet Napolitano
(none)

2. Announcements by the Chair, Anh-Vu Pham

Executive Committee Activities

- Reviewed guidelines for Lecturers with Potential Security of Employment (LPSOE)
- Prepared summary for new Chancellor emphasizing the need for funding to support student enrollment growth, funding to attract graduate students and assistance with large, center-type proposals
- Finalized COE bylaw revisions on Distance Learning Program oversight (regulation 16J) and Pass/No Pass Option (regulation 40)
- Approved Course Materials and Services Fees – 4 renewals, 4 revised, 1 new
- Approved undergraduate curriculum changes – CEE, CHE, CS, ECE, MAE and MSE
- Approved two student petitions

Executive Committee Activities continued...

- Reviewed current undergraduate enrollment statistics
- Reviewed proposal to revise Ph.D. qualifying exam policy
- Considered request to coordinate review of Dean next fall
- Discussed new mechanisms for teaching feedback
- Discussed 3% tax on 19900 funds
- Responded to six Requests for Consultation (RFCs) from Academic Senate (academic advising, diversity and inclusion strategic plan, undergraduate business major, presidential unmanned aircraft system policy, AP classes for GE credit and review of APM on LPSOEs)

Order of Business continued...

3. Announcements by Dean, Jennifer S. Curtis

- Slides to follow

College of Engineering Budget Briefing and Update

Presented to:

Faculty Executive Committee – May 9, 2017

College Leadership – May 10, 2017

Annual Faculty Meeting – May 11, 2017

Campus Leadership – May 22, 2017

Budget Overview

Dean's Office Budget FY 17-18

Dean's Office Budget FY 17-18

<u>SOURCES</u>	<u>AMOUNT</u>	<u>%</u>
TOTAL CARRY FORWARD FROM FY 16-17 (PROJECTED)	\$4,072,172	9%
TOTAL BASE FUNDING	\$36,707,830	84%
TOTAL ONE TIME OR LIMITED TIME SOURCES	\$2,950,000	7%
TOTAL SOURCES	\$43,730,002	100%
<u>EXPENDITURES</u>		
TOTAL RECURRING EXPENSES TO OTHER CAMPUS UNITS	\$3,241,635	7%
TOTAL RECURRING EXPENSES TO DEPARTMENTS	\$22,726,765	50%
DEAN'S OFFICE OPERATIONAL UNITS – RECURRING EXPENSES	\$11,338,357	28%
ONE TIME OR LIMITED TIME EXPENSES (FIRM COMMITMENTS)	\$6,339,051	14%
TOTAL EXPENDITURES	\$43,645,808	100%
PROJECTED BALANCE – CARRY FORWARD	\$84,194	
REMAINING FIRM START UP COMMITMENTS TO BE PAID OUT AFTER 2017-18	\$6,658,583	
REMAINING FIRM COST SHARING COMMITMENTS TO BE PAID AFTER 2017-18	\$1,032,000	
ENDOWED PROFESSORSHIPS TO BE PAID OUT	\$292,444	

RECURRING SOURCES

Carry Forward Funds from 2016-17 (PROJECTED)	\$4,072,172
Base Budget	\$11,038,934
Increment to Base Budget from Tuition	\$427,000
Increment to Base Budget from Merits	\$131,674
Increment to Base Budget from Faculty Separations	\$590,103
Benefits	\$13,044,107
Increment to Base Budget for Benefits Costs	\$935,000
TA Funds	\$2,015,509
Increment to TA Funds	\$143,670
MS Pilot Revenue	\$608,000
Increment to MS Pilot Revenue	\$0
Grad Fee Remission and Grad Budget Model	\$537,007
Increment to Grad Fee Remission and Grad Budget Model	\$0
Grad UCOP Funds	\$302,931
Increment to Grad UCOP Funds	\$0

Note: Total Graduate Support Funds = \$1,447,938

RECURRING SOURCES

ICR	\$4,351,000
Increment to ICR	\$319,000
Summer Sessions	\$510,000
Lottery and Advising Funds	\$204,380
CNM2 Recharge Revenue	\$404,000
Gift Fee Revenue	\$300,000
Other Donations to College	\$350,000
Academic Year Cost Recovery	\$110,000
Patent Funds	\$24,618
Instructional Use Funds	\$200,000
Advisor Position 50/50 Cost Share with COE	\$48,000
HIP Position Funds (Salary & Benefits)	\$112,897
TOTAL RECURRING SOURCES	\$40,730,002

ONE TIME OR LIMITED TIME SOURCES

Development Officer Funding	\$400,000
-----------------------------	-----------

Dean's Discretionary	\$400,000
----------------------	-----------

Block Grant for Start Up	\$1,800,000
--------------------------	-------------

HIP Funds for Start Up	<u>\$350,000</u>
------------------------	------------------

TOTAL ONE TIME OR LIMITED TIME	\$2,950,000
---------------------------------------	--------------------

TOTAL SOURCES	\$43,730,002
----------------------	---------------------

RECURRING EXPENDITURES TO OTHER CAMPUS UNITS

Recurring Budget Cut (2%)	\$1,179,000
OP Tax to Campus	\$1,946,000
Genome Center OP Tax	\$6,145
OPS Programming to CAES	\$8,008
School of Medicine Faculty Split Appointments	\$102,482
TOTAL RECURRING EXPENSES TO OTHER CAMPUS UNITS	<u>\$3,241,635</u>

RECURRING EXPENDITURES TO DEPARTMENTS

New Faculty Hires in 2017-18 (Salary & Benefits)	\$1,893,196
Graduate Support to Departments	\$1,263,000
TA Support to Departments	\$3,299,088
Benefits to Departments	\$12,946,503
ICR to Departments/Faculty	\$1,935,748
Summer Session to Departments	\$448,523
Visa Funding for New Faculty	\$50,000
Retention Off-Scale	\$22,117
Other Support to Departments (Administrative Stipends, GAEL, Faculty Awards, Common Goods Assessment)	<u>\$868,590</u>
TOTAL RECURRING EXPENSES TO DEPARTMENTS	\$22,726,765

DEAN'S OFFICE RECURRING EXPENDITURES		
(SOME BASED ON FY 16-17 AMOUNTS)		
	AMOUNT	FTE
1. Undergraduate Office	\$1,212,422	9.1
2. Shared Services – HR / Payroll & Accounts Payable	\$1,083,926	11.1
3. Information Technology	\$1,976,000	9
4. Dean's Office – Administration	\$1,438,221	4.5
5. Development	\$1,199,843	7
6. Research and Graduate Studies	\$342,349	1.62
7. Facilities	\$977,147	4.59
7A. Engineering Student Design Center (EFL)	\$643,928	4
8. Administrative Support and Events	\$445,173	4.5
9. Marketing and Communications	\$377,837	2
10. Center for Nano and Micro Manufacturing	\$1,361,646	7
11. Engineering Student Startup Center	\$168,350	1.0
12. LEADR	\$111,515	0.75
TOTAL RECURRING EXPENSES IN DEAN'S OFFICE	\$11,338,357	66.16

ONE TIME OR LIMITED TIME EXPENSES (KNOWN)

One Time Budget Cut (Dean's Office Portion) (3%)	\$55,298
Faculty Retentions	\$216,703
POP	\$47,799
Cost Sharing/Matching/Bridging from Graduate Funds	\$184,938
Cost Sharing/Matching/Bridging from other Dean's Office Funds	\$150,275
ESDC Renovation Project	\$200,000
Dean's Office Renovations	\$175,400
Other Renovations	\$125,000
ABET Accreditation (Mock Self-Study Summer 2017)	\$24,000
Strategic Planning (to be Completed by End 2017)	\$20,000
Start Up Likely to be Paid Out in 2017-18	<u>\$5,139,638</u>
TOTAL ONE TIME OR LIMITED TIME EXPENSES	\$6,339,051

TOTAL EXPENDITURES	\$43,645,808
PROJECTED BALANCE	\$84,194

ENDOWED PROFESSORSHIPS TO BE PAID OUT	\$292,444
REMAINING START UP COMMITMENTS TO BE PAID OUT AFTER 2017-18 (FIRM)	\$6,658,583
REMAINING COS SHARING/OTHER COMMITMENTS AFTER 2017-18 (FIRM)	\$1,032,000

Carry Forward Balances

<u>Description</u>	<u>7/1/15</u>	<u>%</u>	<u>7/1/16</u>	<u>%</u>	<u>4/1/17</u>	<u>%</u>
Dean's Office	\$ 9,809,005	26%	\$ 5,293,886	14%	\$ 4,072,172	11%
Department	\$ 9,207,536	25%	\$ 10,443,618	27%	\$ 10,093,406	27%
Faculty	\$ 18,320,393	49%	\$ 22,287,755	59%	\$ 22,580,828	61%
TOTAL	\$ 37,336,934	100%	\$ 38,025,259	100%	\$ 36,746,406	100%

Carry forward balances in departments range from ~\$350K to \$2.7M

Budget Comments

- Recurring expenses that increase each year are benefits (get \$14.0 mil and pay \$15.9 mil for all college employees) and TA support (get \$2.1 mil and give out to departments \$3.3 mil)
- Recurring funds were added to CS for 1 FTE staff last year given their massive growth
- Recurring funds were added to CHE/MSE for 0.5 FTE staff last year to replace funds previously provided by Provost's office
- Adding a COE rotating staff position to be hired by departments on a short term basis when they are short a staff member due to transition in hiring, medical leave, etc.
- **Faculty startup (~\$800K per faculty) and renovation costs (\$1.2 million last year) are not sustainable due to lack of funds**

FY 17-18 Budget Framework

ONE-TIME

3% one-time tax on all general funds (**\$55,298** Dean's Office; **\$165,719** rest of accounts). Dean's Office to receive 1% back and will reinvest as follows:

- Faculty startup less than 3 years old will not be reduced
- Contractual matching funds on contracts and grants will not be reduced

RECURRING

2% base budget reduction of **\$1,179,000** will be absorbed by the Dean's Office in FY 17-18. This reduction will be implemented in FY 18-19 after COE's strategic planning has been completed.

ICR return to college reduces from 37% to 34% in 17-18, 32% in 18-19 and 30% in 19-20. Ratio of split between college, department and PI will remain the same (at our current research expenditures this is about a **\$350,000** cut).

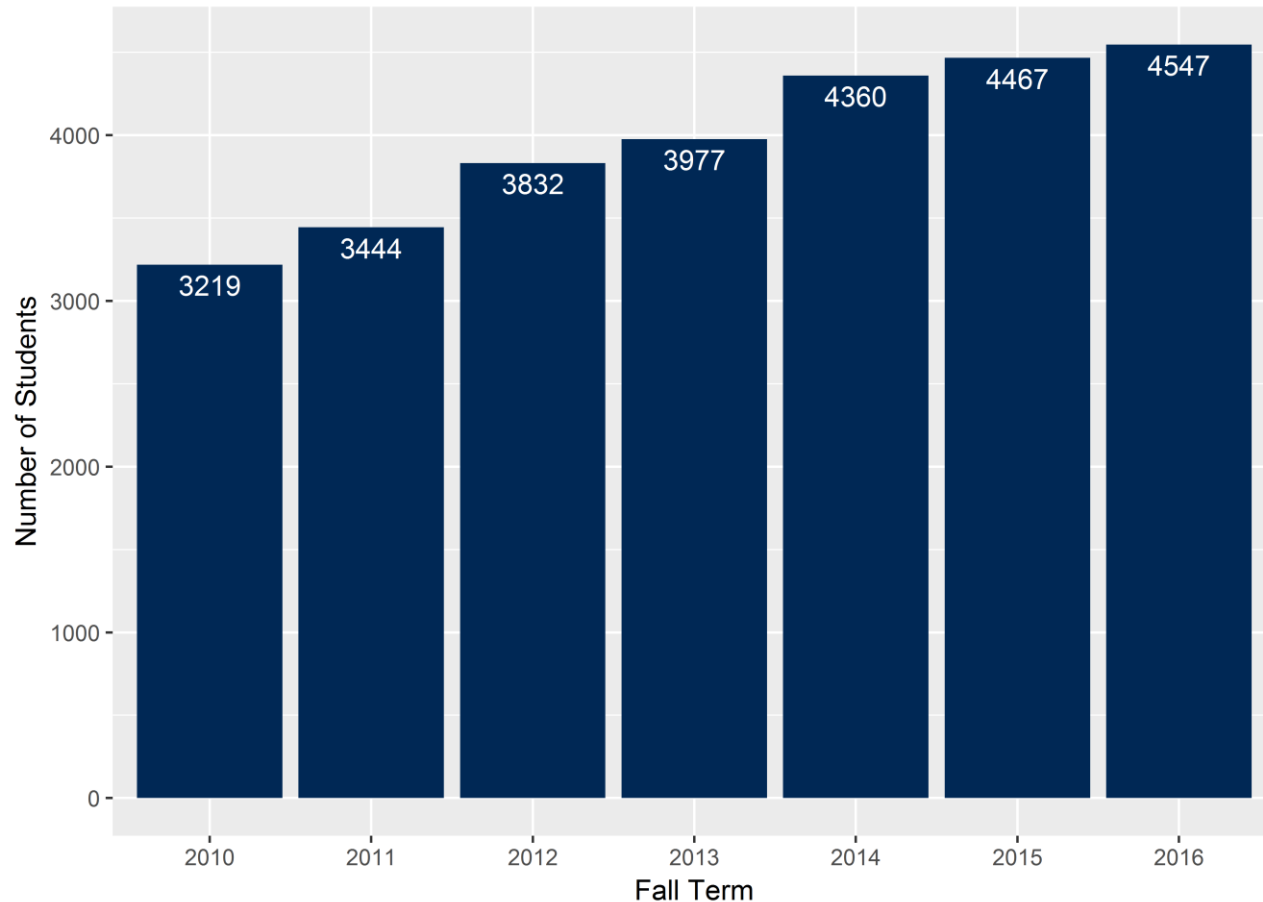
Return to college on faculty departures decreases from 70% to 65% in 17-18

Sources of Funding

- Fundraising
 - Development officers raise minimum 10x their salary
 - Pays for programmatic support, laboratory renovations, graduate fellowships, equipment, etc.
- Participate in Master's Enrollment Incentive Program
 - Each non-resident MS will give \$9K to department (\$3K for resident)
 - For example, class of 50 students will more than cover additional costs
 - Source of outstanding PhD students
 - Most effective way to recruit students if MS offered is a one year, non-thesis MS, such as non-thesis MS CHE, non-thesis MS MAE, etc.
- Distance Learning and Certificate Programs
- Increasing Research Activity generating ICR
- Increase SCH through a large enrollment general elective course like Design of Coffee

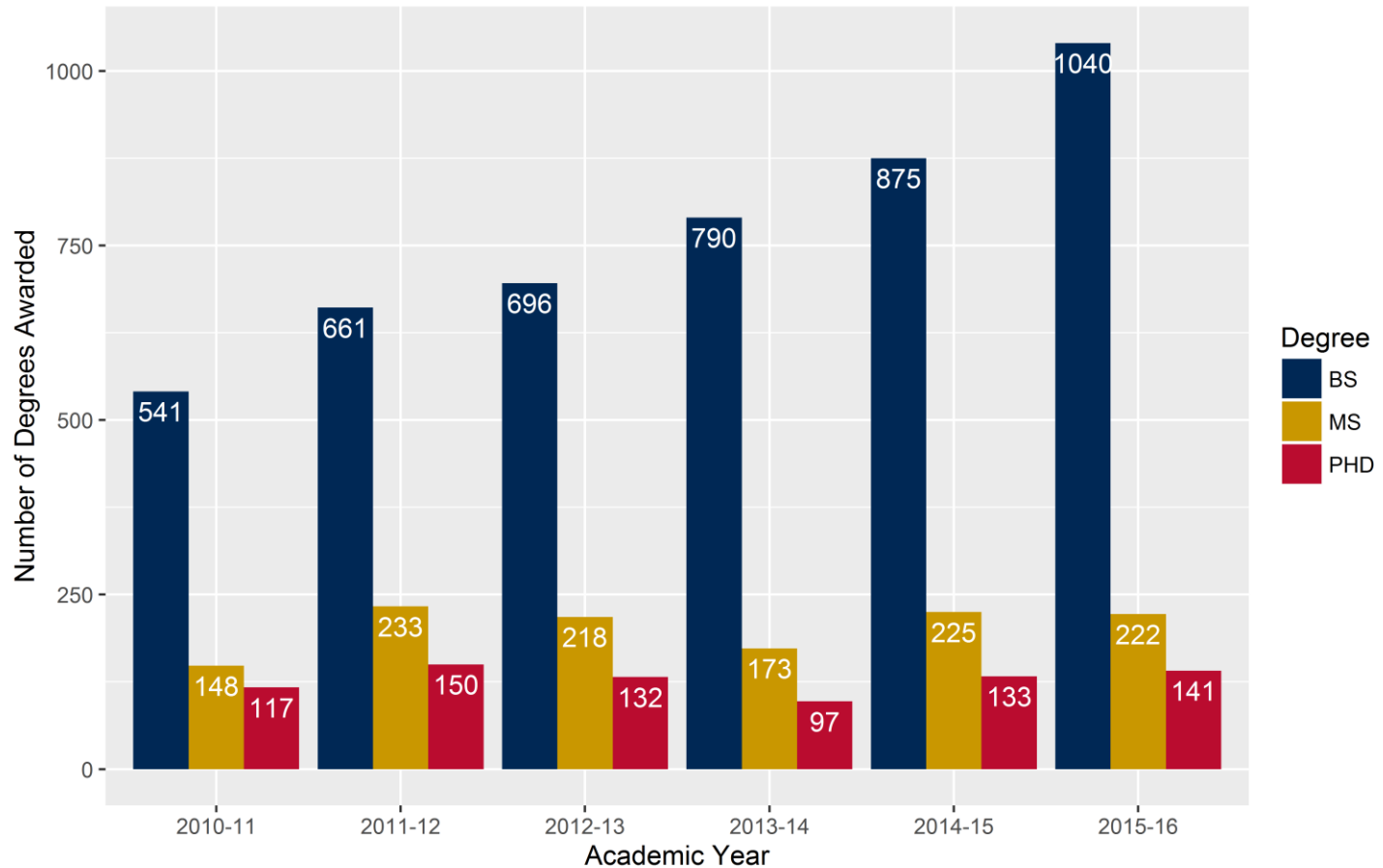
College Overview

Number of Undergraduate Students

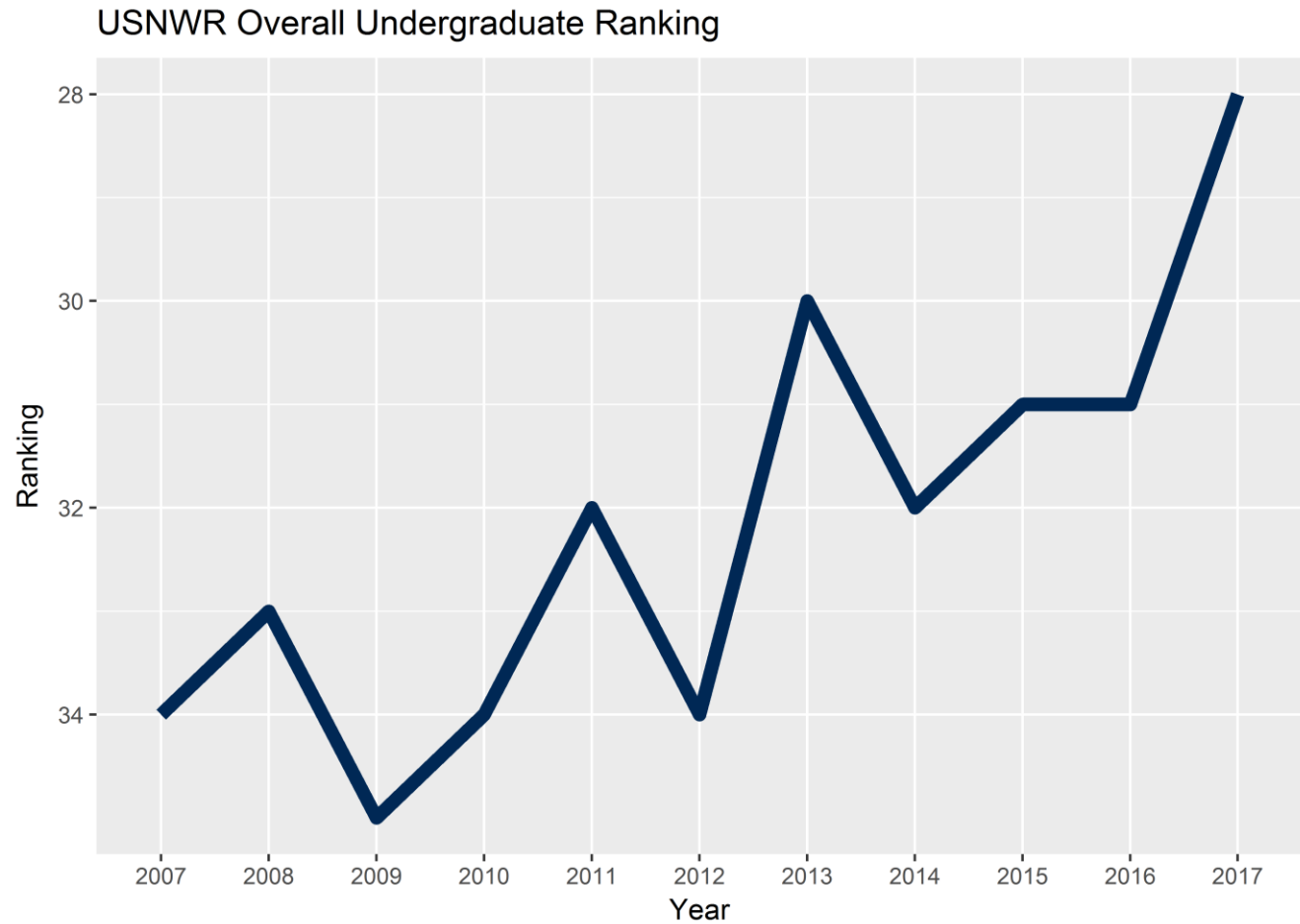


Number of Graduates

Mean Time to Degree = 4.125 years

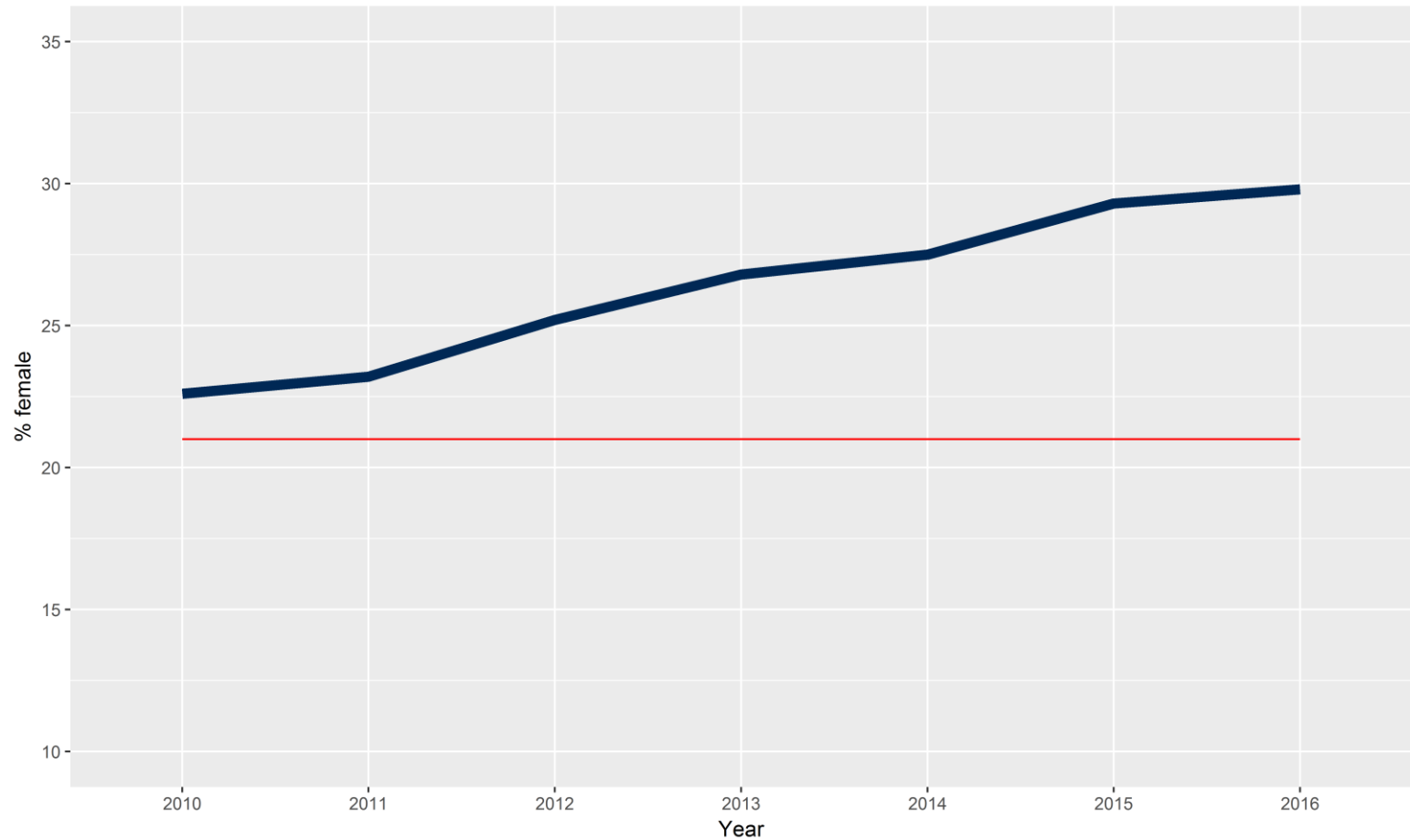


Undergraduate US News & World Report Ranking



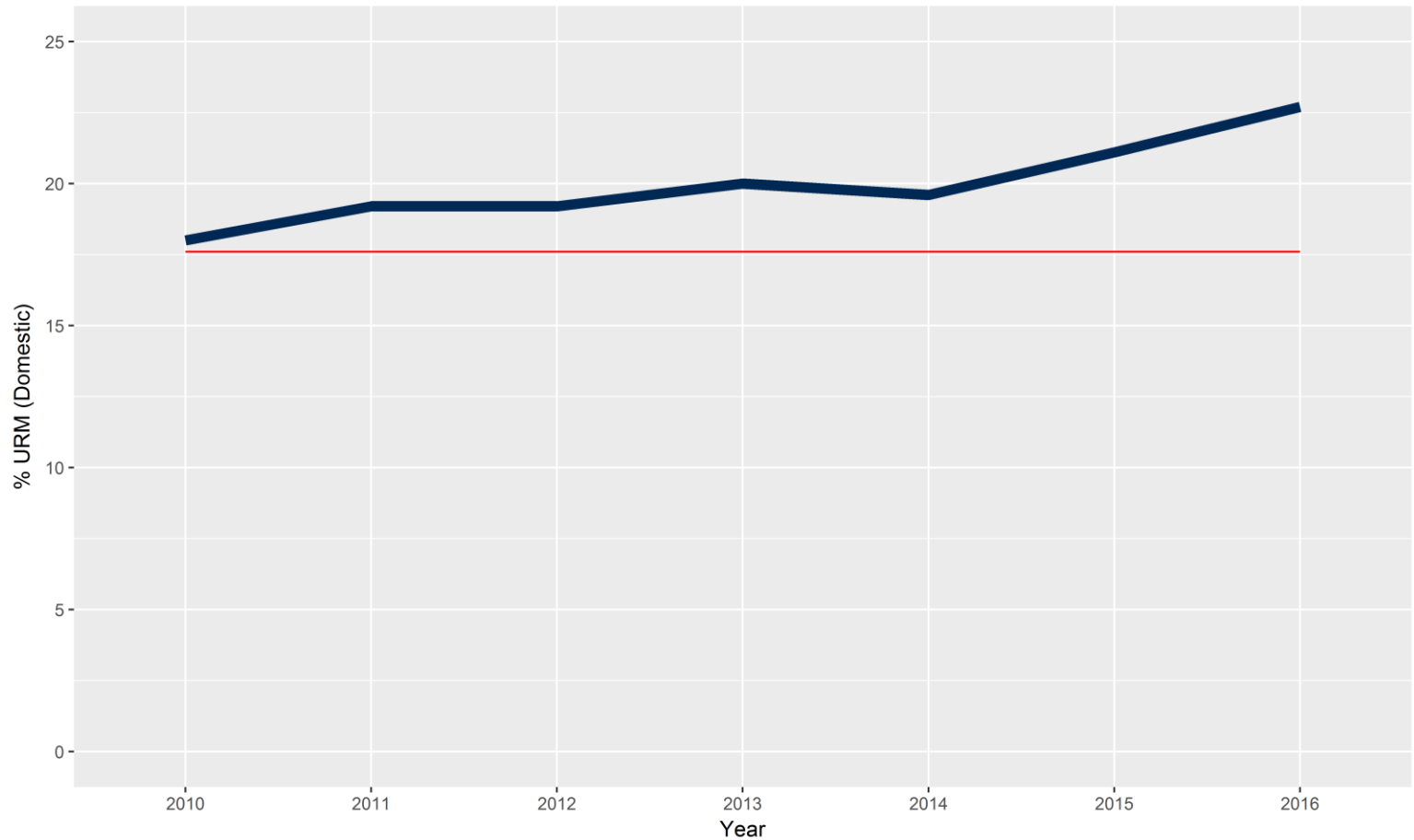
Percentage of Female Undergraduate Students

National Average = 21%

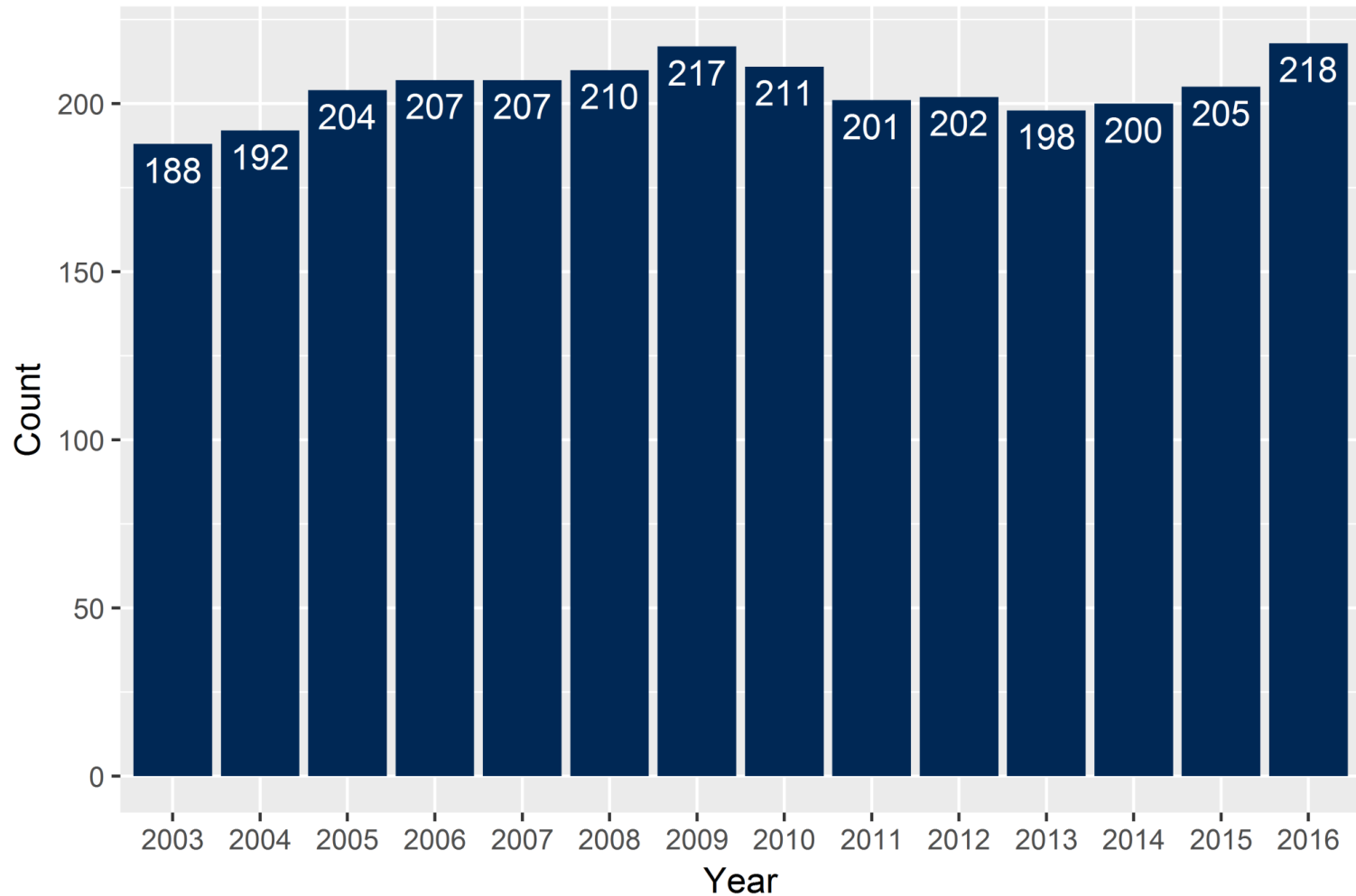


Percentage of URM Undergraduate Students

National Average = 17.6%



Faculty Headcount



Faculty Hiring

2015-2016

10 Total Faculty to be
Hired who Utilize CNM2

CNM2 Investment

- \$15 mil investment by campus
- \$2 mil investment by college

Approximate breakdown for hiring:

- 2 CHE
- 1 MSE – Roopali Kukreja
- 5 ECE
- 2 MAE



Jamal Levis
Assistant Professor, Electrical and Engineering
Ph.D., University of Florida (2010)



Karen Mason
Assistant Professor, Electrical and Engineering
Ph.D., University of Colorado (2009)



Alyssa Panitch
Assistant Professor, Electrical and Engineering
Ph.D., University of Wisconsin-Madison (2009)



Coleman Kronawitter
Assistant Professor, Electrical and Engineering
Ph.D., UC Berkeley (2010)



Priya Shah
Assistant Professor, Electrical and Engineering
Ph.D., UC Berkeley (2010)



Jason White
Assistant Professor, Electrical and Engineering
Ph.D., University of Connecticut (2009)



Heather Bischof
Assistant Professor, Civil
and Environmental Engineering
Ph.D., Stanford University (2010)



Colleen Bronner
Assistant Professor, Civil and Environmental Engineering
Ph.D., State University of New York, Buffalo (2010)



Alexander Forrest
Assistant Professor, Civil
and Environmental Engineering
Ph.D., University of British Columbia (2010)



Jonathan Herman
Assistant Professor, Civil
and Environmental Engineering
Ph.D., University of Illinois (2010)



Maureen Kinyua
Assistant Professor, Civil
and Environmental Engineering
Ph.D., University of Illinois (2010)



Alejandro Martinez
Assistant Professor, Civil
and Environmental Engineering
Ph.D., University of Illinois (2010)



Sabbie Miller
Assistant Professor, Civil
and Environmental Engineering
Ph.D., Stanford University (2010)



Veronica Morales
Assistant Professor, Civil
and Environmental Engineering
Ph.D., Stanford University (2010)



Holly Oldroyd
Assistant Professor, Electrical and Engineering
Ph.D., UC Santa Barbara (2010)



Katerina Ziotopoulou
Assistant Professor, Electrical and Engineering
Ph.D., UC Santa Barbara (2010)



Srabanti Chowdhury
Assistant Professor, Electrical and Engineering
Ph.D., UC Santa Barbara (2010)



Shuguang (Robert) Cui
Assistant Professor, Electrical and Engineering
Ph.D., University of Illinois (2010)



J. Sebastian Gomez-Diaz
Assistant Professor, Electrical and Engineering
Ph.D., Technical University of Catalonia, Spain (2010)



Lifeng Lai
Assistant Professor, Electrical and Engineering
Ph.D., Ohio State University (2010)



Heeman Rashtian
Assistant Professor, Electrical and Engineering
Ph.D., University of Illinois (2010)



David Doty
Assistant Professor, Electrical and Engineering
Ph.D., UC Santa Barbara (2010)



Kurt Eiselt
Assistant Professor, Electrical and Engineering
Ph.D., UC Santa Barbara (2010)



Cho-Jui Hsieh
Assistant Professor, Electrical and Engineering
Ph.D., University of Texas, Austin (2010)



Susan Gentry
Assistant Professor, Materials Science and Engineering
Ph.D., University of Michigan, Ann Arbor (2010)



Roopali Kukreja
Assistant Professor, Materials Science and Engineering
Ph.D., Stanford University (2010)



Seongkyu Lee
Assistant Professor, Materials Science and Engineering
Ph.D., University of Wisconsin (2010)



Xinfan Lin
Assistant Professor, Materials Science and Engineering
Ph.D., University of Wisconsin (2010)

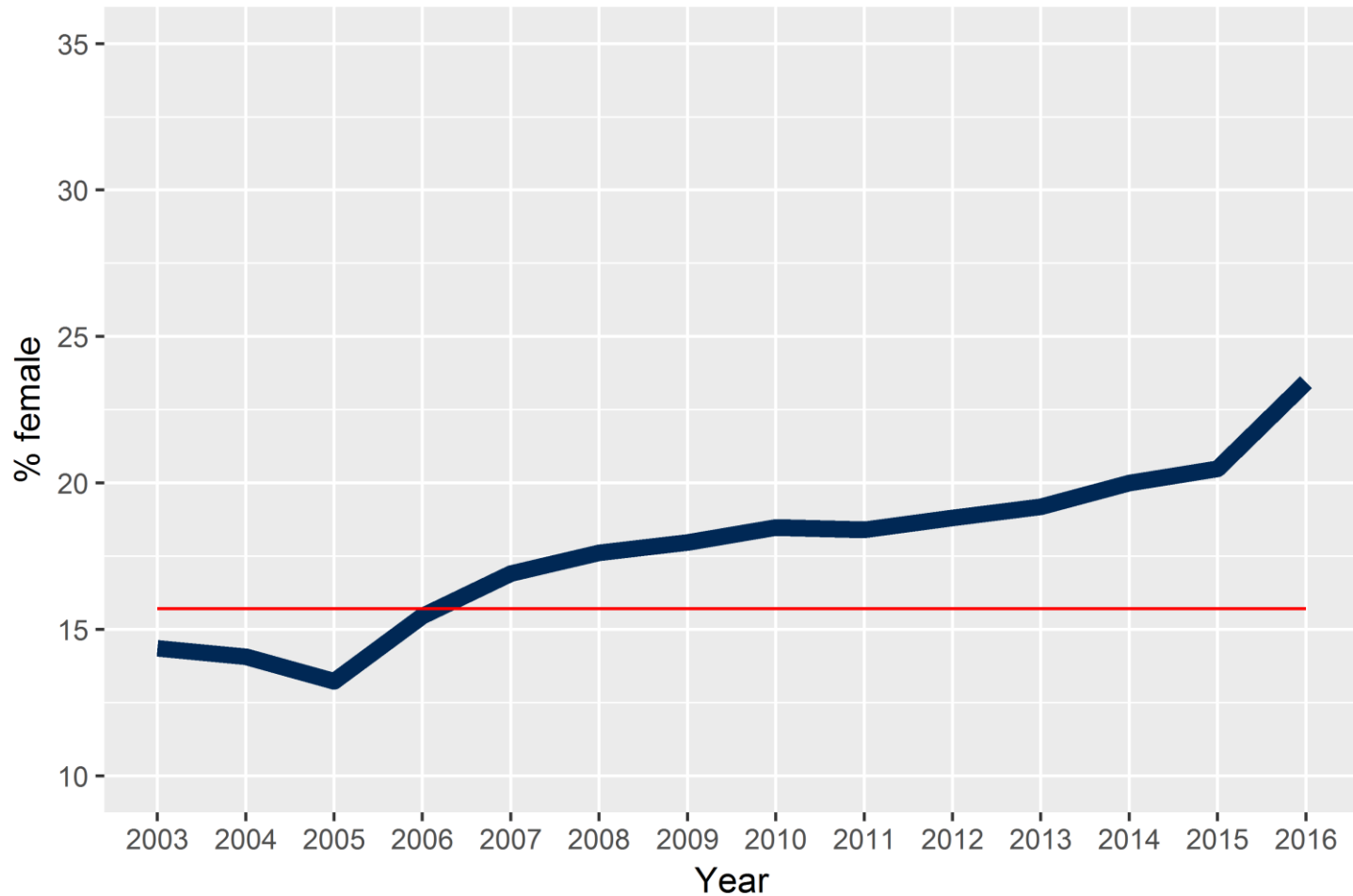


Jason Moore
Assistant Professor, Materials Science and Engineering
Ph.D., University of California, Davis (2010)



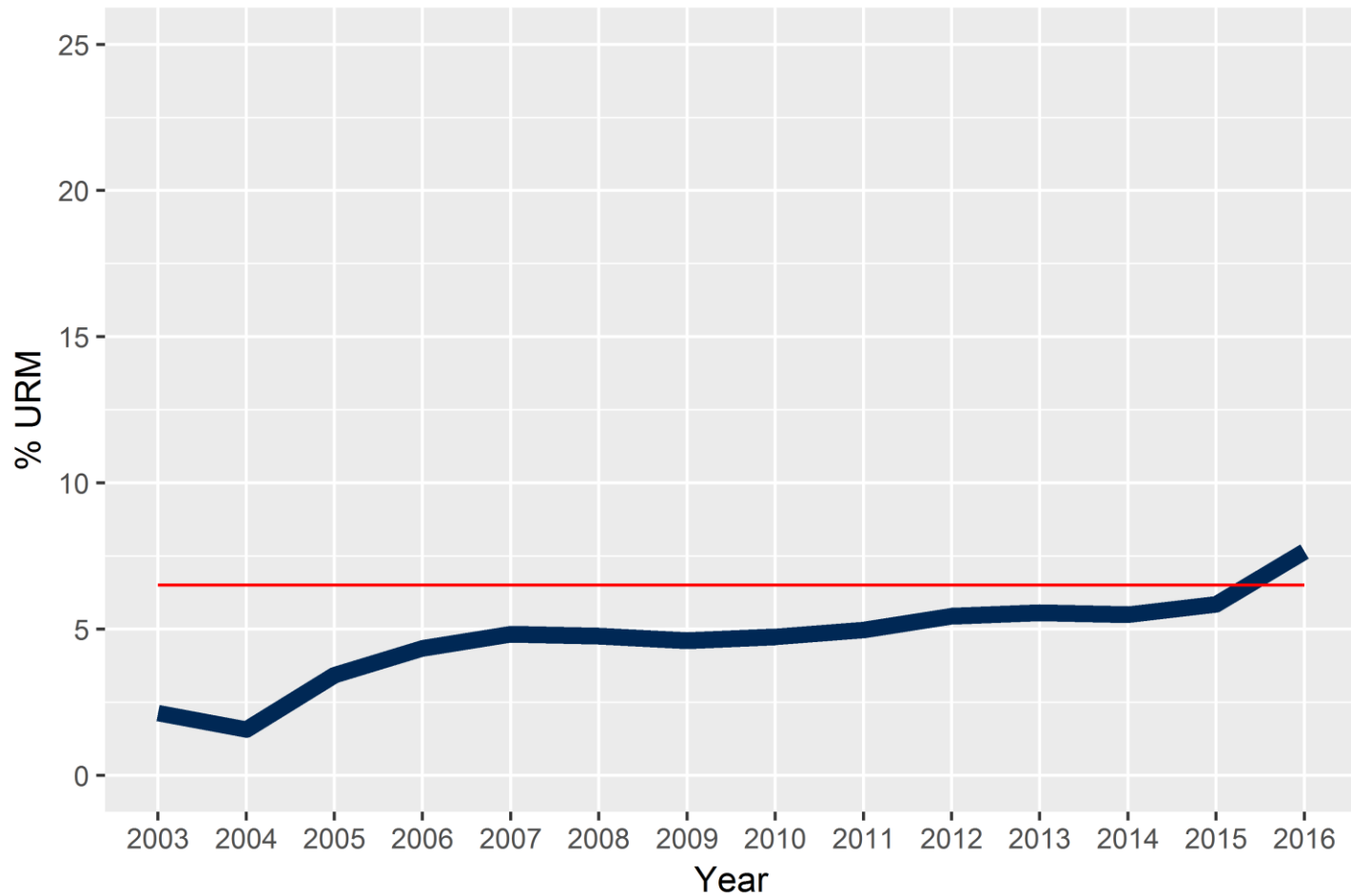
Percentage of Female Faculty

National Average = 15.7%



Percentage of URM Faculty

National Average = 6.5%



Faculty Hiring

2016-2017: 17 active searches, 9 of 17 hired to date

2017-2018: up to 10 hires projected



Target of Excellence Hire – Biomedical Engineering

Professor Steve George

Coming to UCD from Washington University in St. Louis
Tissue Engineering

Dr. Andre Daccache

Biological and Agricultural Engineering
Assistant Professor
Water Resources Management



Faculty Hiring



Dr. Sam King

Associate Professor Computer Science
Computer Security



Dr. Zhou Yu

Assistant Professor Computer Science
Natural Language Processing



Dr. Joshua McCoy

Assistant Professor Computer Science
Gaming Technologies



Dr. Jason Lowe-Power

Assistant Professor Computer Science
Computer Architecture, HPC

Faculty Hiring

Dr. Ambarish Kulkarni

Assistant Professor Chemical Engineering
Molecular Modeling



Dr. Sara Mahshid

Assistant Professor Chemical Engineering
NanoBio Engineering
CNM2 Faculty User

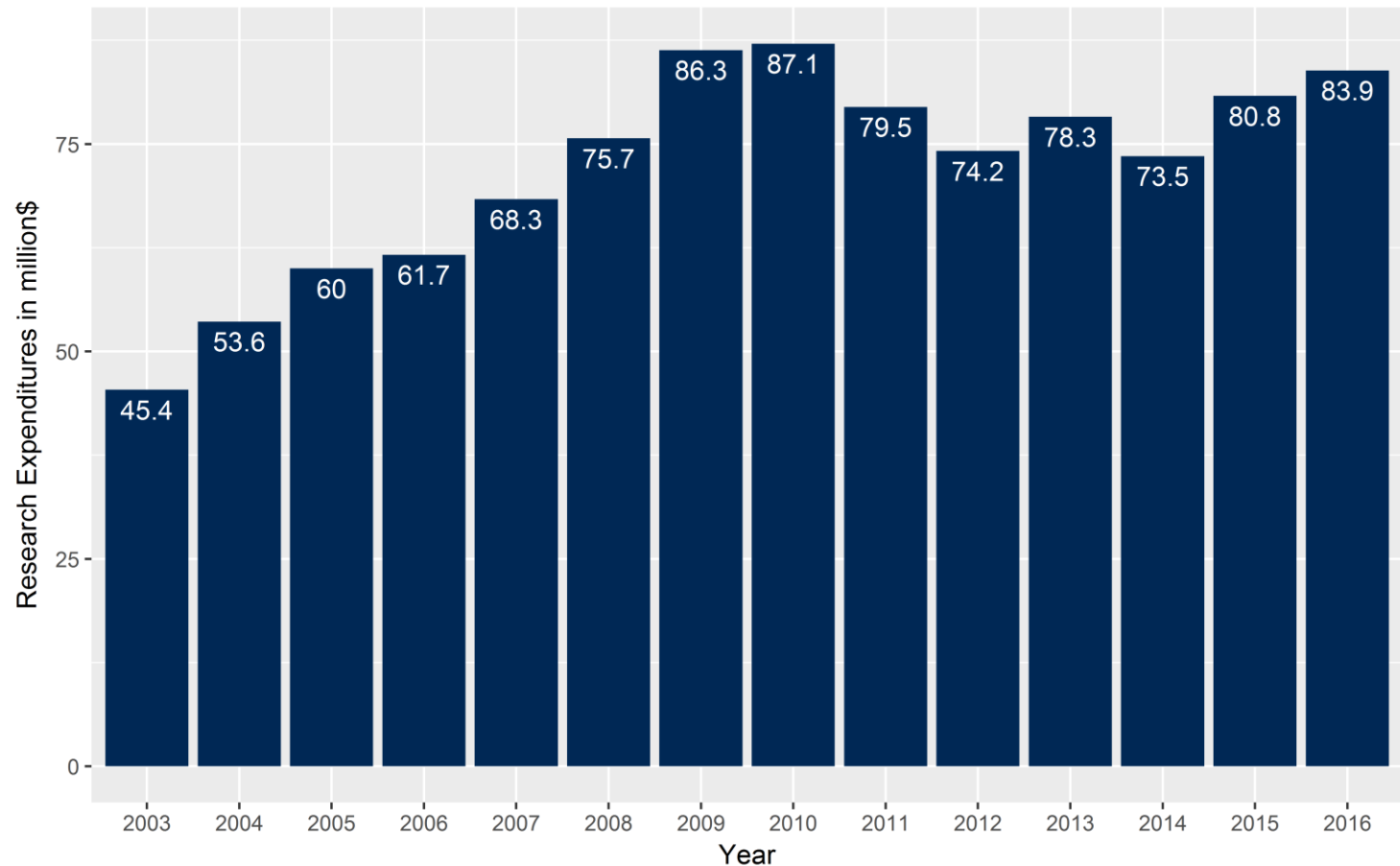


Dr. Jeremy Mason

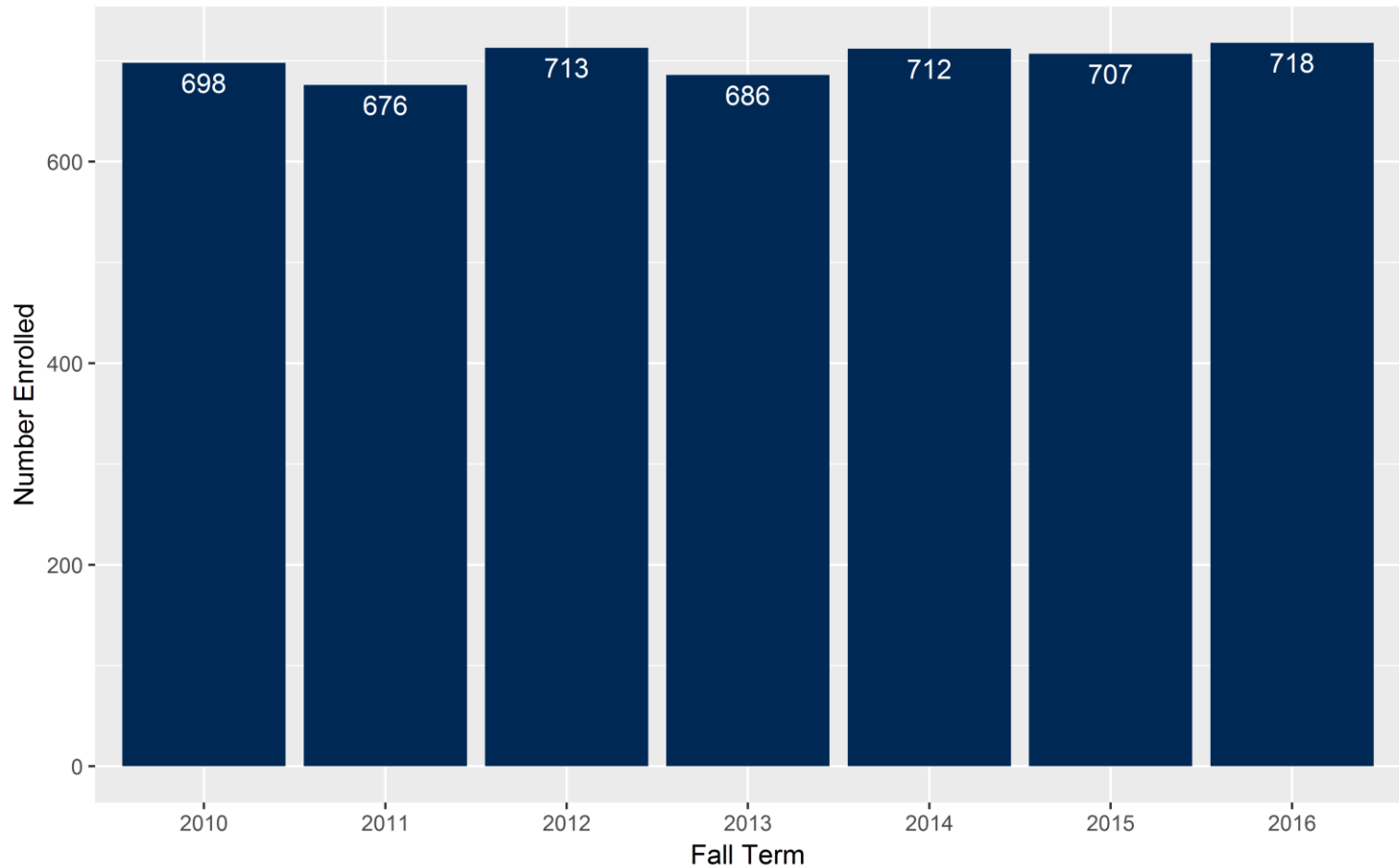
Assistant Professor Materials Science and Engineering
Computational Materials Science



Research Expenditures (External)

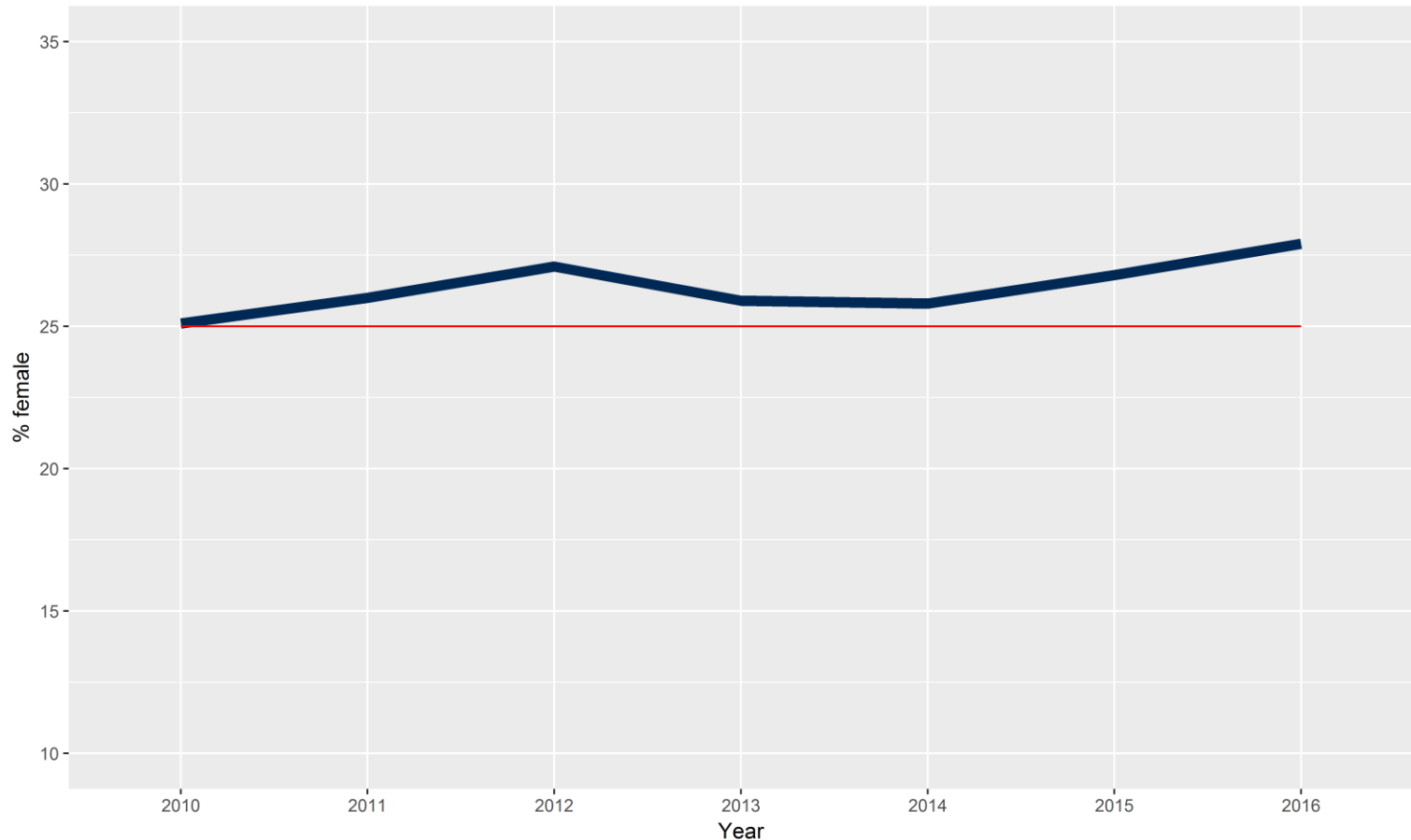


Number of PhD Students



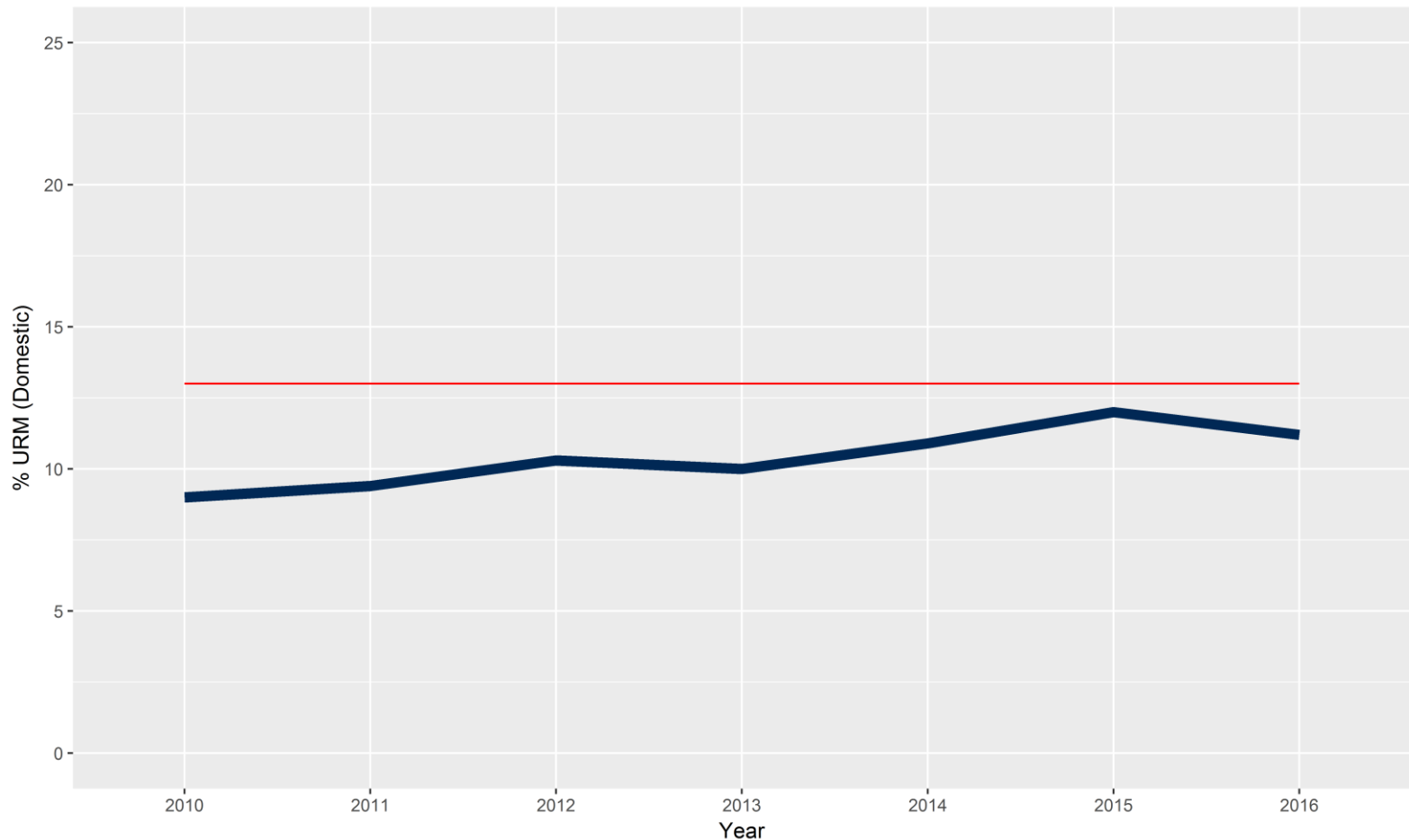
Percentage of Female Graduate Students

National Average = 25%



Percentage of URM Graduate Students

National Average = 13%



College & Campus News

New Chancellor Gary May

Starting August 1

Current Dean of Engineering, Georgia Tech



Development

Melinda Seevers

Assistant Dean for Development, College of Engineering
Starting July 1

BS Mechanical Engineering

TRW, Phoenix Design Engineering

USDA, Boise State University

University of Colorado

and a licensed private pilot....



Development

- 6 current staff
 - Melinda Seevers (new Assistant Dean to start before July 1, 2017)
 - Grace Greenwich
 - Greg Gibbs – Corporate Giving
 - Doug Wright
 - Sarah Hodge
 - Linda Tsang – Administrative Support
- Two open positions for 2017-2018
- Plan for two more positions for 2018-2019

Development Goals:

- Chaired Professorships and Graduate Fellowships
- Undergraduate Laboratory Upgrades
- Building Projects
- Alumni Engagement

Alumni Engagement

Distinguished Engineering Alumni Awards
and College Open House
February 23, 2017

Layton Han, *CEO, ADARA Media*

Bill Ballhaus, *CEO, Blackboard*

Elizabeth Loba, *Dean of Engineering, U Missouri*

Paul Johnson, *President, Colorado School of Mines*

Ahmed Darwish, *Chairman, Suez Canal Economic Zone*

Iman Oskoorouchi, *COO, TruAdvantage*



Upcoming Alumni Engagement Events

Distinguished Engineering Alumni Medal Celebration and
College Open House
January 19, 2018



DEC Meetings

October 25, 2017 UC Davis

February 8, 2018 San Ramon

May 2018 Location TBD

Upcoming Alumni Engagement Events

June 8, 2017

Engineering Design Showcase
and College Luncheon (prior to Showcase)



Development – Building Projects

- Engineering Student Design Center
 - Supporting all departments
 - Enabling design throughout the curriculum – every student, every major
 - Integrating Student Startup Center
 - Bainer Hall expansion from 9000 sq. ft. to 22,000 sq. ft.
 - \$19 million project
- Computational/Data Innovation Center
 - In discussions with lead donor prospect
 - \$50M, 62,500 sq. ft.
- Coffee Research Center
 - Renovation of Advanced Materials Research Laboratory (AMRL)
 - Cost estimate for renovation being generated by DCM

EXPANDED STUDENT DESIGN CENTER FACILITY



Student Startup Center Update



COURSES OFFERED

Starting and Prototyping
a Technology Venture

Entrepreneurship
Seminar

Introduction to
Entrepreneurship



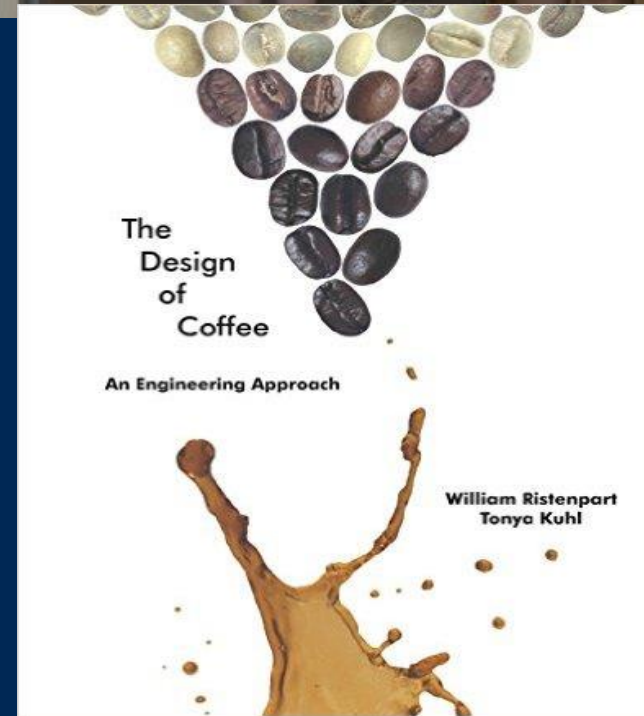
Creator Challenge Series 2017
design. engineer. create.

Coffee Center Update

Research funding from Breville

Gifts from Rizo-Lopez Foods, Probat, Bencafe, Peets, and Curtis

Chevron gift for classroom renovations for Design of Coffee Course



US News and WR Department Methodology

- 100% Peer Assessment Score
- Ranking by US Department Chairs/Heads

US News and WR

Department Methodology

Programs and Specialties	2018 Rank	2018 Score	2017 Rank	2017 Score
Biological/Agricultural Engineering	8	3.8	7	4.1
Civil Engineering	12	3.8	12	3.8
Environmental Engineering	15	3.4	15	3.6
Aero/Astronautical Engineering	23	3.2	30	2.8
Chemical Engineering	25	3.2	32	3.0
Biomedical Engineering/Bioengineering	25	3.3	19	3.4
Materials Engineering	35	2.8	25	3.1
Computer Engineering	36	3.2	31	3.2
Mechanical Engineering	36	3.1	35	3.2
Electrical/Communications Engineering	42	3.1	34	3.3

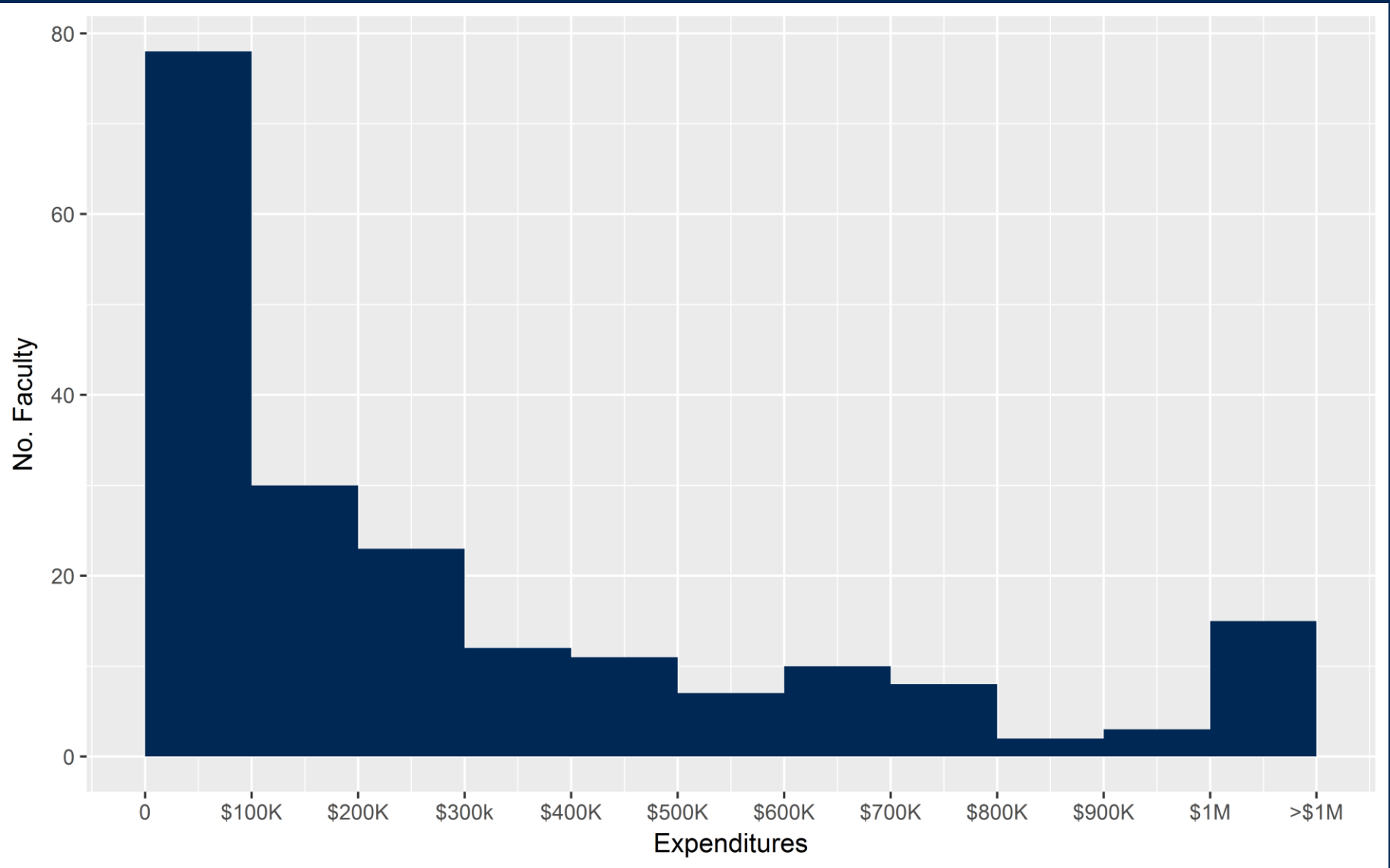
Highest Ranked

Biggest Gains – both up 7 spots

US News and WR College Methodology Our 2017 Ranking – #33

- 25% Peer Assessment Score (we are ranked #33 in this metric) 3.4 to 3.8
- 15% Total Research Expenditures (we are ranked #38) ~\$80 mil to ~\$100 mil
- 15% Industry Assessment Score (we are ranked #24) 3.8
- 10% Research Expenditures per Faculty Member (**we are ranked #46**)
- 7.5% Number of PhD Students per Faculty Member
- 7.5% Percent of Faculty in the National Academy of Engineering
- 6.75% Mean GRE Score of Entering Graduate Students
- 6.25% Number of PhDs Awarded
- 3.75% Number of MS Students per Faculty Member
- 3.25% Acceptance Rate for Graduate Admissions

Expenditures Per Faculty

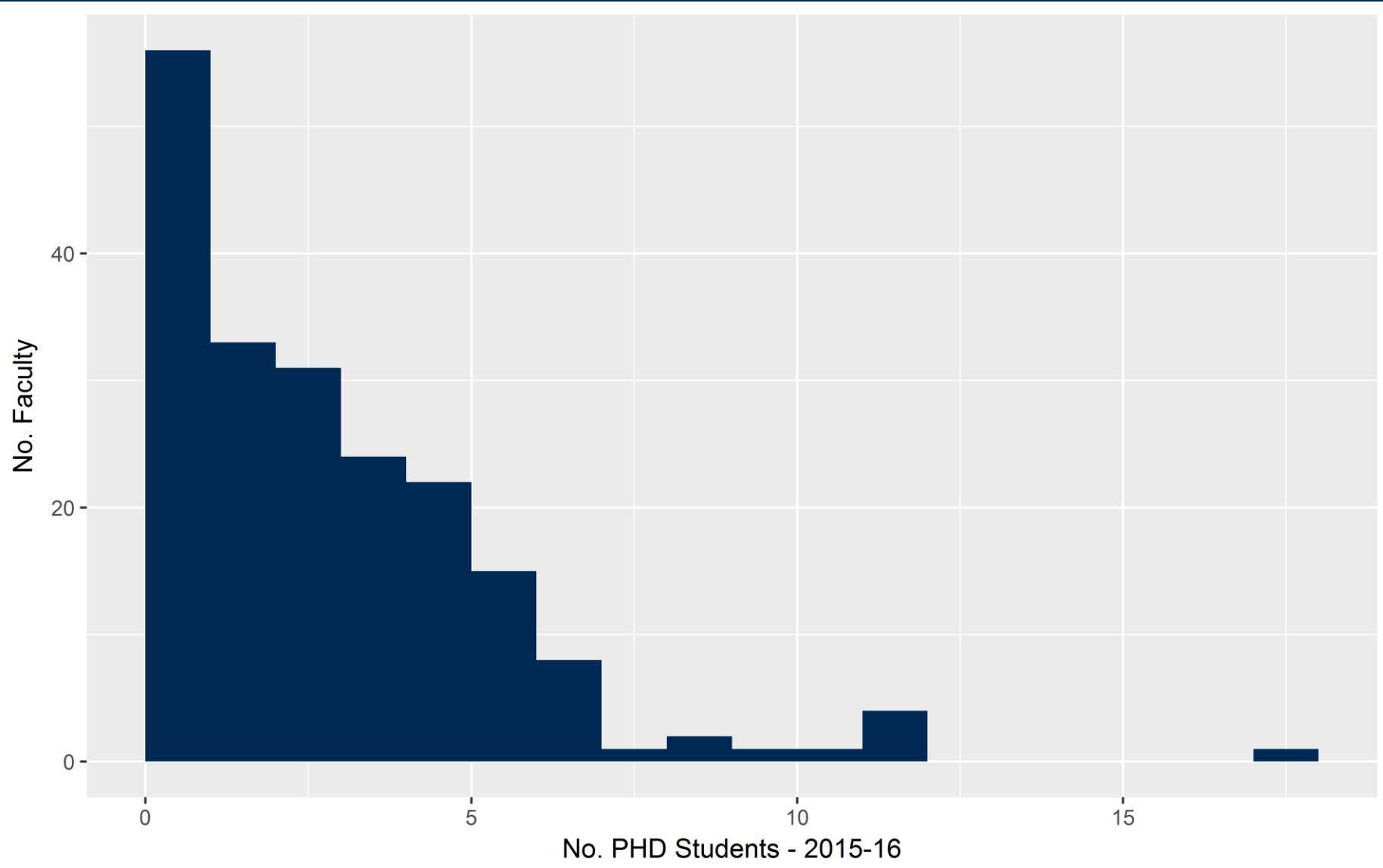


61 Full/Associate Professors less than \$100K per year

Comparison with Peer Schools

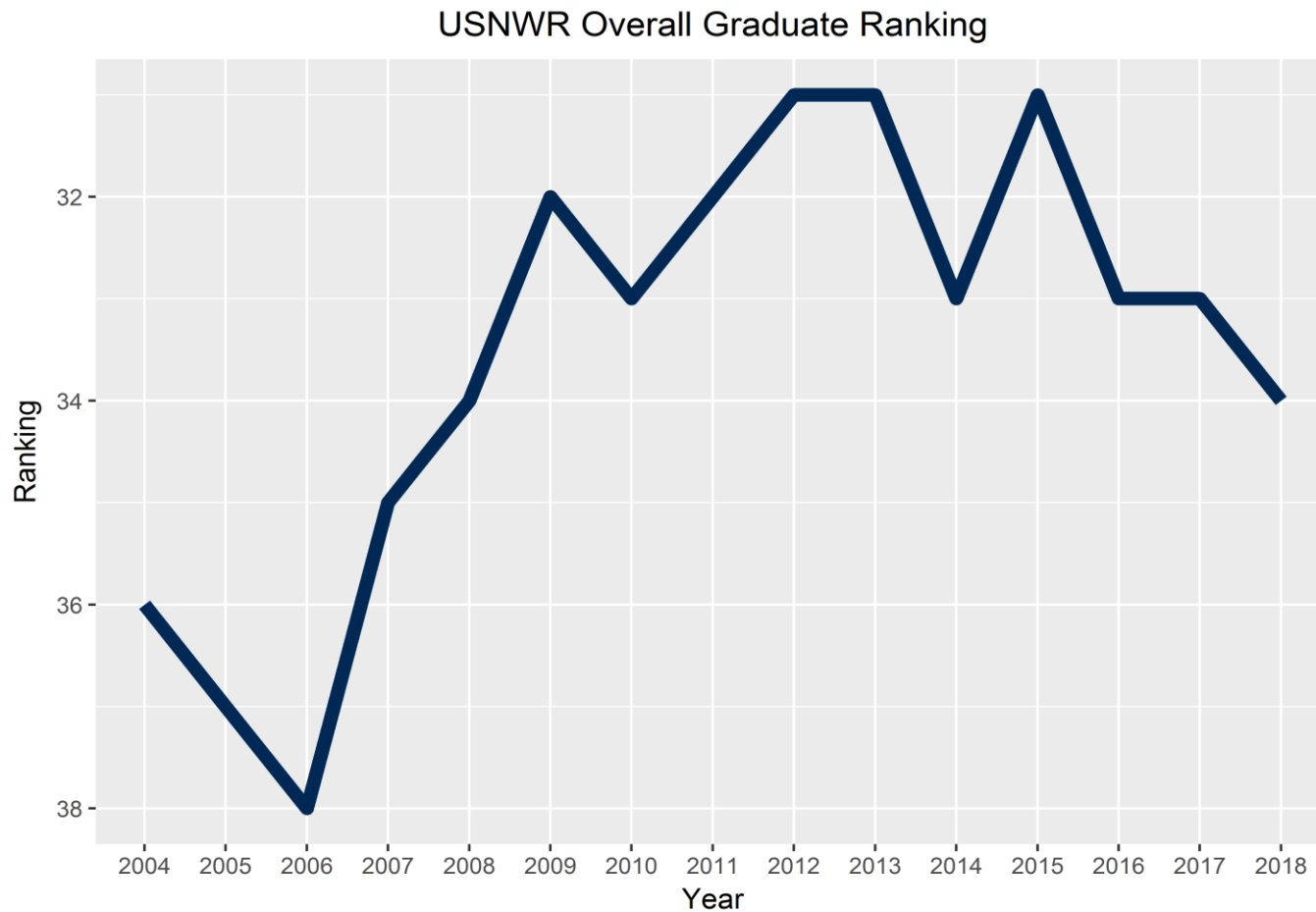
	Res/Faculty	Academic Peer Perception	
UC Davis	\$459,057	3.4	
VA Tech	\$531,645	3.8	TOP 25 school
U Washington	\$576,395	3.7	TOP 25 school
Purdue	\$642,635	4.2	TOP 10 school
U Michigan	\$741,966	4.6	TOP 10 school
UC Berkeley	\$821,578	4.7	TOP 10 school

PhDs Per Faculty



32 Full/Associate Professors have 0 PhD Students

Graduate US News & World Report Ranking



RANKINGS

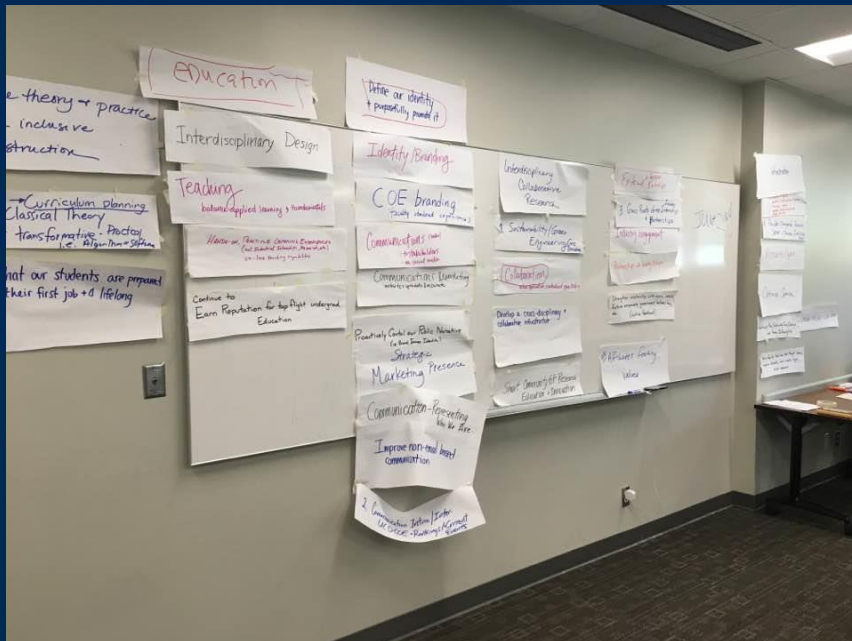
#1 Massachusetts Institute of Technology
#2 Stanford University
#3 University of California, Berkeley
#4 California Institute of Technology
#5 Carnegie Mellon University
#6 University of Michigan
#7 Georgia Institute of Technology
#7 University of Illinois
#9 Purdue University
#10 University of Texas, Austin
#11 Texas A&M University
#12 Cornell University
#12 University of Southern California
#14 Columbia University
#14 University of California, Los Angeles
#17 University of California, San Diego

#18 Princeton University
#19 Northwestern University
#19 University of Pennsylvania
#21 Johns Hopkins University
#21 Virginia Tech
#23 University of California, Santa Barbara
#24 Harvard University
#24 University of Maryland, College Park
#24 University of Washington
#27 North Carolina State University
#27 Penn. State University
#27 University of Minnesota
#30 Duke University
#31 Ohio State University
#31 Rice University
#33 University of California, Davis

Strategic Planning

Outstanding Engagement of Stakeholders

42% faculty
68% staff
36% undergraduate students
47% graduate students
4% alumni

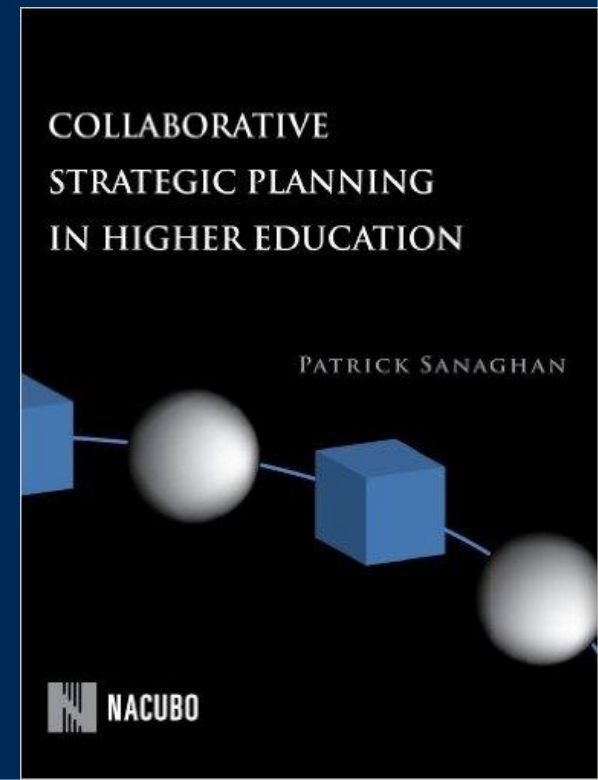


Over 3000 respondents
Over 300 pages of survey responses

Strategic Themes

- Enhance interdisciplinary, collaborative research
- Define our identity and purposefully promote it
- Increase hands-on, practical learning experiences
- Cultivate external partnerships
- Improve and expand infrastructure

Future Strategic Planning Sessions
June 2 & October 6



Closing Comments

- Number of undergraduate students and degrees awarded have significantly increased
- Faculty numbers and research expenditures are increasing; this trend definitely needs to continue, but faculty startup and renovation costs are untenable due to shortage of funds
- Diversity of our faculty and undergraduate students has increased as well as our undergraduate national ranking
- Engineering Student Design Center project is our #1 priority for our undergraduate program
- Diversity in our graduate student population needs attention as well as our college's national standing
- Need to enhance national visibility of our college and faculty – identified as key theme of our strategic plan



UC DAVIS

COLLEGE OF ENGINEERING

Engineering Undergraduate Office

- Salary = \$768,358
- Benefits = \$361,226
- Expenses = \$82,838
- Total = \$1,212,422

FTE = 9.1

- Jim Schaaf, Associate Dean (0.85 FTE)
- David Spight
- Terri Zamora
- Mary Ramirez
- Tanya Culliver-Whitlow
- Jordan Dade
- Alin Wakefield
- Julie Bural
- Nancy Davis
- Laura Hackett (0.25 FTE)

Engineering Shared Services

HR/Payroll and Purchasing

- Salary = \$683,035
- Benefits = \$349,349
- Expenses = \$51,542
- Total = \$1,083,926

FTE = 11.1

- Lisa Gaby
- Melanie Christensen
- Denise Bray
- Melanie Burt-Schipke
- Lucy Whyte
- Pia Flory
- Theresa Mcwayne
- Diane Peterson
- Kathy Sanchez
- Vacant (Sondra Salazar)
- Maryann Chavez
- Jeff Adams (.10 FTE)

Information Technology

- Salary = \$902,927
- Benefits = \$427,529
- Expenses = \$645,544
- Total = \$1,976,000

FTE = 9.0

- Steve Pigg
- Ken Jones
- Babak Moghadam
- Dean Bunn
- Heidi Arnold
- Jackie Simmons
- Ben Clark
- John Kralik
- Chris Herring

Dean's Office Administration

- Salary = \$780,618
- Benefits = \$388,582
- Expenses = \$269,021
- Total = \$1,438,221

FTE = 4.5

- Jennifer Curtis, Dean
- Felix Wu, Associate Dean (.50 FTE)
- Jessie Catacutan, Assistant Dean
- Manju Kaul
- Regan Scott-Chin

Development

- Salary = \$761,099
- Benefits = \$335,418
- Expenses = \$103,326
- Total = \$1,199,843

FTE = 7.0

- Melinda Seevers, Assistant Dean
- Greg Gibbs
- Grace Greenwich
- Doug Wright
- Sarah Hodge
- Linda Tsang
- Two vacant slots (0.5 FTE each)

Research and Graduate Studies

- Salary = \$234,134
- Benefits = \$71,293
- Expenses = \$36,922
- Total = \$342,349

FTE = 1.62

- Jean VanderGheynst, Associate Dean (0.75 FTE)
- Kim Reinking (0.87 FTE)

Facilities

- Salary = \$602,799
- Benefits = \$256,938
- Expenses = \$117,410
- Total = \$977,147

FTE = 4.59

- Case van Dam, Associate Dean (0.75 FTE)
- Justin Hall
- Scott Cooling
- Safety Officer (vacant)
- Stephani Shone (0.84 FTE)

Student Design Center (formerly EFL)

- Salary = \$397,734
- Benefits = \$153,504
- Expenses = \$92,690
- Total = \$643,928

FTE = 4.0

- Mike Akahori
- David Kehlet
- Shawn Malone
- Sherry Batin

Administrative Support and Events

- Salary = \$249,657
- Benefits = \$129,323
- Expenses = \$66,193
- Total = \$445,173

FTE = 4.0

- Carrie Chown
- Francesca Ross
- Elsa Rojas-Perez
- Rachel Geier

Marketing and Communications

- Salary = \$169,431
- Benefits = \$78,886
- Expenses = \$129,520
- Total = \$377,837

FTE = 2.0

- Kelley Weiss
- Bonnie Dickson

CNM2

Center for Nano and Micro Manufacturing

- Salary = \$688,494
- Benefits = \$325,566
- Expenses = \$347,586
- Total = \$1,361,646

FTE = 7.0

- Corey Wolin
- Ed Myers
- Yusha Bey
- Vacant (Rijuta Ravichandran)
- Chan Ho Kim
- Paula Lee
- Laboratory Director (vacant)

Reports from Standing Committees

Committee on Undergraduate Educational Policy

Jeannie Darby, Chair

Presented by: Jim Schaaf

Awards Committee

Michael Zhang, Chair

Research and Library Committee

Boris Jeremic, Chair

Reports from Standing Committees continued...

Committee on Graduate Study

Chris Cappa, Chair

Committee on Information Technology and Innovation Services

Matt Bishop, Chair

Committee on Student Recruitment, Development, and Welfare

Jason White, Chair

Order of Business continued...

4. Special orders (none)
5. Petitions of students (none)
6. Unfinished business (none)
7. New business (none)

COE Standing Committees 2017/18

FACULTY EXECUTIVE COMMITTEE

Ken Giles	BAE
Laura Marcu	BME
Jason DeJong	CEE
Greg Miller (Chair)	CHE
TBD	CS
Chen-Nee Chuah	ECE
Nesrin Sarigul-Klijn	MAE
Subhash Risbud	MSE

COE Standing Committees 2017/18

COMMITTEE ON STUDENT RECRUITMENT, DEVELOPMENT & WELFARE

Zhiliang Fan	BAE
Karen Moxon	BME
Dawn Cheng	CEE
Jason White	CHE
Norm Matloff	CS
Juan Sebastian Gomez-Diaz	ECE
Barbara Linke	MAE
Susan Gentry	MSE

COE Standing Committees 2017/18

COMMITTEE ON UNDERGRADUATE EDUCATIONAL POLICY

Tina Jeoh	BAE
Vivek Srinivasan	BME
Jeannie Darby	CEE
Nael El-Farra	CHE
Patrice Koehl	CS
Josh Hihath	ECE
Ben Shaw	MAE
Ricardo Castro	MSE

COE Standing Committees 2017/18

AWARDS COMMITTEE

Jean VanderGheynst	BAE
Kent Leach	BME
Michael Zhang	CEE
Spyros Tseregounis	CHE
Karl Levitt	CS
Raj Amirtharajah	ECE
Vinod Narayanan	MAE
Subhash Mahajan	MSE

COE Standing Committees 2017/18

RESEARCH & LIBRARY COMMITTEE

Stavros Vougioukas	BAE
Marc Facciotti	BME
Boris Jeremic	CEE
Adam Moule	CHE
Yong Jae Lee	CS
Soheil Ghiasi	ECE
Masa Soshi	MAE
Sabyasachi Sen	MSE

COE Standing Committees 2017/18

COMMITTEE ON GRADUATE STUDY

Niels Jensen	DAS
Ruihong Zhang	BAE
TBD	BME
Chris Cappa	CEE
Ahmet Palazoglu	CHE
John Harvey	TTP
Kwan-Liu Ma	CS
TBD	ECE
Roger Davis	MAE
Yayoi Takamura	MSE

COE Standing Committees 2017/18

COMMITTEE FOR INFORMATION TECHNOLOGY & INNOVATION SERVICES

David Slaughter	BAE
Yong Duan	BME
Mike Kleeman	CEE
Roland Faller	CHE
Matt Bishop	CS
John Owens	ECE
Seongkyu Lee	MAE
Klaus van Benthem	MSE

Meeting Minutes

- Annual Faculty meeting began at 3:05 p.m. and adjourned at 4:25 p.m.
- 45 COE faculty members attended the meeting

May 12, 2016

To: The Faculty of the College of Engineering

FR: Jeannie Darby

Chair, Undergraduate Educational Policy Committee (UGEPC)

RE: Annual report of the Undergraduate Educational Policy Committee, Spring 2017

The Undergraduate Committee on Educational Policy met 7 times during the 2016-2017 academic year, and will meet two more times before the end of the quarter (5/15/17 and 6/12/17). The following actions were taken by this committee:

Degree Lists:

Received the degrees list for Summer 2016, Fall 2016, and Winter 2017.

Sample Transfer Grid:

The transfer grid for community college transfer students was given to departments to revise to conform to course changes (will be approved at the 5/15/17 meeting).

Change of Major Requirements for Mechanical Engineering and Biomedical Engineering majors:

No request has yet come to the Committee to continue exception to policy for AY2017-18. This exception has been to require a 2.8 GPA for the various courses considered for the change of major; for most majors the GPA required is 2.0. These courses include MAT21A, 21B, 21C, CHE2A, PHY9A, as well as all math, science, and engineering courses required for the intended major.

Dismissal Report

A dismissal report (for AY 2014-15) will be reviewed by the Committee at the June meeting.

New Major:

The Environmental Engineering major was approved and will be open to students as of Fall 2017.

New Courses, Changes and Cancellations:

Reviewed and approved 45 new, changed, and cancelled courses.

New courses: BIM 125, 140L, 143L, 144, 170, 171; ECI 100, 140A, 140B, 140C, 140D, 193A, 193B

Curriculum Changes:

Curriculum changes for the 2017-2018 academic year were approved for the following programs:

Aerospace Science & Engineering
Biochemical Engineering
Chemical Engineering
Civil Engineering
Computer Engineering
Computer Science & Engineering
Electrical Engineering
Materials Science & Engineering
Mechanical Engineering

Changes for the 2017-2018 academic year were approved for the following minors:

Construction Engineering & Management

The Committee reviewed student petitions as follows:

Reviewed and approved 28 automatic exceptions to major requirements or policy

Reviewed 13 student change of major petitions. 9 were approved, 4 were denied

Reviewed 10 student petitions for exception to major requirements or policy. All 10 were approved.

Respectfully submitted,

T. Jeoh (BAE)
T. Passerini (BME)
N. El-Farra (CHE)
J. Darby, Chair (CEE)
P. Rogaway (CS)
K. Wilken/J. Hihath (ECE)
B. Shaw (MAE)
D. Krol/R. Castro (MSE)

REPORT OF THE AWARDS COMMITTEE

FY 2016/17

The committee met in early November to review committee workload for the academic year. Gloria Hayes, Director of National and International Faculty Awards, met with committee members to discuss the award opportunities for engineering faculty. Gloria provided the committee member with two lists of awards for review and consideration. Committee members were asked to share this information with their respective department chairs and to encourage nominations.

The committee met again in mid-February to review the seven nominations submitted from various departments for the Zuhair A. Munir Best Dissertation Award. The committee chose Dr. Eric Berg (BME) as the awardee, and selected Dr. Pallavi Daggumati (ECE) for honorable mention.

The committee will meet again May 19 to review the eligibility criteria and method to streamline review process. The committee will meet one last time on May 26 to discuss nomination packets and recommend recipients for the four COE Faculty Awards to Dean Curtis for consideration.

In addition to the Munir Award and the four COE Faculty Awards, the committee was also involved with six other awards. Provided below is the list of awards for reference:

Award	Recommended nominee(s)
APEC Aspire Prize	Sabbie Miller (CEE)
Lemelson MIT Prize	Tingrui Pan (BME)
UC Davis Medal	William Chancellor (BAE)
American Association for the Advancement of Science (AAAS)	Jerry Woodall (ECE)
Blavatnik Awards for Young Scientists	Chris Cappa (CEE)
L'Oreal-UNESCO For Women in Science Nominations	Tina Jeoh (BAE) Alyssa Kendall (CEE)

Graduate Study Committee

Report to the Faculty

AY 2016-2017

Committee Members: Raj Amitharajah, Chris Cappa (Chair), Roger Davis, John Harvey, Niels Jensen, Alissa Kendall, Kent Leach, Kwan-Liu Ma, Ahmet Palazoglu, Yayoi Takamura, Ruihong Zhang, Jean VanderGheynst (*ex-officio*).

The Graduate Study Committee met and discussed the following items:

Graduate Academic Certificate in Engineering Education: Prior proposal for a designated emphasis program was revised to propose a Graduate Academic Certificate (GAC) in Engineering Education. Proposal is attached. (Appendix A)

Masters Enrollment Incentive Plan (MEIP): A new funding model to foster an increase in enrollment of MS students was proposed by the Office of Graduate Studies with the option for programs to opt-in or out of the plan. The MEIP program significantly increases the return of tuition to the College based on an increase in the number of MS students enrolled in programs that opt in. A Memorandum of Understanding regarding the distribution of these funds between the Graduate Studies Committee and the Dean's Office was signed. The proposal, the MOU, and a list of those programs that opted in are in Appendix B.

TOPS: Funding provided on an annual basis from UCOP (\$93, 931) has not changed over the life of the program and the number of fellowships the annual funds support currently stands at six. This year, because of a surplus of funding from the MS Pilot program, we will have funds to make 11 awards, but the number of awards will decrease in future years as the surplus is depleted and GSR salaries and fees and tuition rise. To increase the diversity of the applicant pool and to expedite selection of TOPS fellows so these can be used as recruitment tools, future TOPS applicants will apply at the time of admission using the OGS internal fellowship application and will be selected by a Dean's Office review process that will include any program advisers who wish to participate.

Diversity: PowerPoint with updated data was received. (Appendix C)

Qualifying Exam Committee Size: There does not appear to be a system-wide requirement for the size of a QE committee. UC Davis Graduate Council policy indicates five members, but this is not codified in the UC Davis Academic Senate regulations. Concerns regarding the difficulty that students have scheduling QE exams because of faculty availability have increased. A proposal to amend the campus policy to allow individual graduate programs to set the size of the QE committee (minimum 3) was forwarded to the faculty executive committee (FEC). The FEC was not in support of this proposal. The GSC will revise the proposal to address the concerns of the FEC and resubmit in academic year 2017-18. The letter to the FEC and its response can be found in Appendix D.

Graduate Engineering Courses Common to More than One Program (ENG 2XX): The committee is reviewing a proposal to develop ENG 2XX (similar to ENG 100 series courses) that would be used by more than one program. See proposal in Appendix E.

Appendix F:
Dean's Distinguished Graduate Fellowship Proposal

UC DAVIS

GRADUATE STUDIES



Proposal: Create a New, Multi-year, Graduate Student Fellowship Program

01/31/2017

Multi-year Funding for Graduate Students

- Helps in enhancing the quality of our graduate programs through the recruitment of excellent students
- Helps in achieving excellence through diversity by providing competitive financial offers
- Assurance of longer term funding helps in providing a better learning environment for the students

Proposal

Graduate Studies is proposing to revise two current matching initiative fellowship programs that have been static since 2005-06 and provide additional matching funds to create a new, multi-year, fellowship program.

Programs to revise:

- Graduate Scholars Fellowship (GSF)
- Dean's Graduate Scholars Fellowship Program (DGSA)

Current Fellowship Programs

Graduate Scholars Fellowship

Each GSF provides a stipend of \$25,200 and full Tuition & Fees of approximately \$18,000 for one year. The current cost-sharing agreement for the GSF is as follows:

- Graduate Studies covers \$17,700 of the stipend and full Tuition & Fees ≈\$35,700
- The Dean's Office covers \$7,500 of the stipend
- If applicable, the individual graduate program is expected to fund the Nonresident Supplemental Tuition (NRST) for any student awarded a GSF (\$15,102).

At an average, about 10 one-year funding is providing through this matching as GSF.

Average commitment during the past few years: GS (\$400K), Deans (~150K), Programs (~\$350K)

Current Fellowship Programs

Deans Graduate Support Allocation Fellowship Program

Funds from the Dean's Graduate Support Allocation (DGSA) Program are used by the graduate programs to provide Tuition & Fee fellowships, Nonresident Supplemental Tuition fellowships, or stipends. This program essentially mimics and augments the Graduate Program Fellowship Allocation (GPFA).

- This initiative was conceived to increase student support by increasing the buying power of Dean's Office contributions
- Originally, prior to 2006-07, the DGSA program was a \$3 million annual program. However, a reduction of Graduate Studies' budget limited our matching contribution to \$500,000. Our lowered contribution resulted in the participating Dean's Office reducing their match to an equivalent reduced level.
- The funding total of the DGSA program has been flat since 2006-07 at an annual total of \$1.1 million. (~\$500K from GS and ~\$600K from the Deans)

New, Multi-year, Graduate Scholars Fellowship Program

Graduate Studies is proposing to redirect the funding from the GSF and DGSA, augment it, and create a new Multi-year Graduate Scholars Fellowship program.

The goals of the new program are:

- Improve the recruitment of top applicants via a multi-year fellowship
- Increase student support via collaboration and matching initiatives
- Streamline student support by combining two programs into one

The new Multi-year Graduate Scholars Fellowship will be modeled after the NSF Graduate Research Fellowship Program (NSF GRFP), in that it will be awarded as a five year fellowship with three “Tenure Years” of financial support and two optional “Reserve Years” in which no funding is provided. The three years of funding must be used in a five year period.

New, Multi-year, Graduate Scholars Fellowship Program

New Program Cost

The cost of each new GSF fellow will be as follows:

- 3 years of stipend at \$25,000 = \$75,000
- 3 years of full Tuition & Fees (approximately \$18,000 per year) = \$54,000
- Up to 3 years of NRST, as necessary
 - One year for US Citizens who are not CA residents = \$15,102
 - 3 years for Nonresident Alien students = \$45,306

While 24 of the last 30 (80%) GSF fellows were not CA residents their first year, only two were not US Citizens. This puts the average total cost of each new three-year fellow at approximately \$150,000.

With a target annual cohort of about 23 new students, after three years the annual cost of the program will be approximately \$3,450,000 per year.

New, Multi-year, Graduate Scholars Fellowship Program

New Matching Component Request

We propose the cost-sharing agreement for the new GSF be a one to two split:

- \$50,000 per fellow from each Dean's Office
- \$100,000 from Graduate Studies and the Chancellor/Provost.

For this new program, we propose to cover any necessary NRST and thereby eliminate the previously required matching funds from each graduate program. Eliminating the graduate program contribution will also partially ameliorate the reduction in funding as a result of redirecting the DGSA funds.

In order to achieve the goal of increasing student support, we are asking the Deans to contribute about 1.5 times the amount they've historically been contributing to the DGSA program.

- Current (16-17) annual Deans' contribution to GSF and DGSA = \$726,450
- Proposed new annual contribution = \$1,150,000

Graduate Studies' contribution will increase from \$900,000 to \$2,300,000

GRADUATE STUDIES

New, Multi-Year, Graduate Scholars Fellowship Program

New Matching Component Request

Graduate Studies will offer minimum of 34 fellowships annually with the expectation that 23 students will accept these offers. If necessary, offers will continue to be made until all fellowships are awarded.

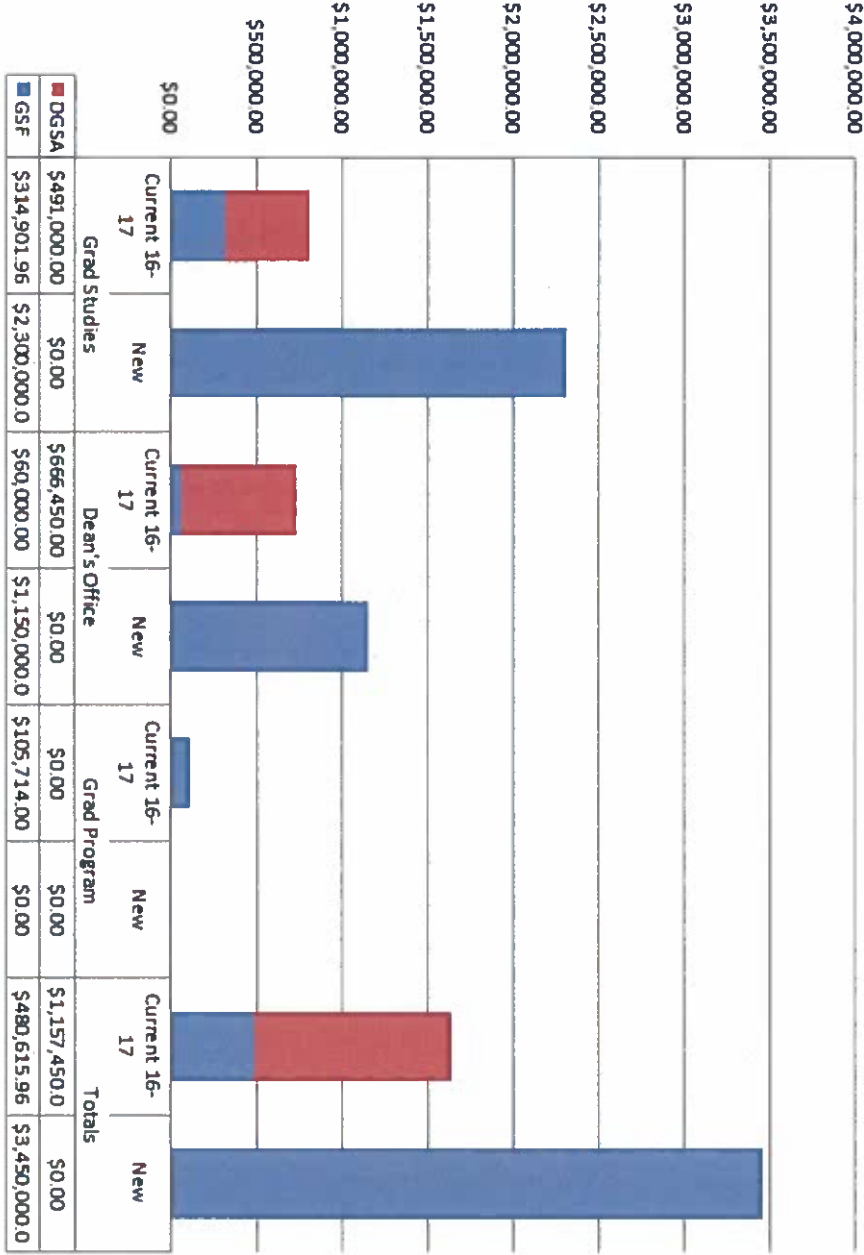
Lead Dean	Current annual DGSA Match	Proposed annual new GSF Match	Annual # of Nominations	Annual # of new GSF Offers	Target # of annual new GSF Awards
C&ES	\$124,000.00	\$200,000.00	17	6	4
CBS	\$141,124.00	\$200,000.00	9	6	4
EDUC	\$20,000.00	\$50,000.00	1	1	1
ENGR	\$50,000.00	\$200,000.00	16	6	4
L&S:HARCS	\$116,326.00	\$100,000.00	13	3	2
L&S:MPS	\$60,000.00	\$150,000.00	12	5	3
L&S:SS	\$125,000.00	\$150,000.00	11	5	3
SOM	\$0.00	\$50,000.00	2	1	1
VETMED	\$30,000.00	\$50,000.00	3	1	1
Total	\$666,450.00	\$1,150,000.00	84	34	23

The 84 nominations and 23 fellowships are allocated among the various lead deans based upon their number of programs and their last three years average enrollments.

New, Multi-year, Graduate Scholars Fellowship Program

New Matching Component Request

New GSF Proposal



The review process for the College of Engineering Dean's Distinguished Graduate Fellowships

Approved by GSC on:

Basic Structure:

- All programs nominate four applicants, ranked 1-4 (1 = highest)
- Nominations are due to CoE on the same day that Grad Studies requires program nominees (typically around Feb. 5)
- All programs participate in reviews of nominees (see below)
- No program can review their own nominees
- Reviews are completed within ~1 week of due date

Scoring Nominees:

The overall score will be a combination of GPA, Scaled Program Rank and Reviewer scores

$$\text{Overall Score} = \frac{\text{GPA Score} + 2 \times \text{Program Rank Score} + 3 \times \text{Reviewer Score}}{6}$$

- **GPA:** The undergraduate GPA will be used, from the students primary institution. Assumes 4-pt scale

$$\text{GPA Score} = \text{GPA}$$

- **Program Rank:** Account for differences in program size through scaling of the program rank. The top ranked person from each program is treated equally. The program rank formula is

$$\text{Program Rank Score} = 4 \cdot \exp\left(-\frac{7[\text{Rank} - 1]}{\text{Size}}\right)$$

where, Size = program size (PhD + MS)

- **Reviewer Scores**
 - Evaluate based on prior accomplishments, potential for success and contribution to program diversity as determined from the student's record and statements of purpose and letters of recommendation
 - Reviewers are GSC faculty
 - Three reviewers per nominee
 - Approximately 12 packages per reviewer (faculty will be provided access via GARD)
 - Score nominees from 1 to 4 (4 is best)
 - Reviewers should aim to use the entire range when scoring nominees

Appendix E:
ENG 2XX Proposal

Proposal to Create ENG 2xx Series of Graduate Classes

There are several courses within the various departments of CoE that apply to more than a single department and could be offered on a broader basis. Courses in "generic" cross-departmental subjects such as:

- Engineering Math
- Numerical Methods
- Computer Programming
- Parallel Computing
- Micro/Nano Engineering
- Solid Mechanics and Materials
- Others?

could be offered at the CoE level rather than multiple departments each offering similar courses.

Advantages

The advantages of creating such an ENG2xx series of courses would include:

- Increased enrollment
- Broader applications
- More efficient use of faculty resources. Eliminates duplicative resources (faculty, rooms, etc)
- Eliminates the need to cross-list some courses

Challenges

The challenges of creating such an ENG2xx series of courses might be:

- How to bookkeep/schedule the courses. Is this done within CoE perhaps by the GSC or some other means?
- Who gets credit for teaching the course (usually the department whose professor teaches the course)
- What professors are listed as being able to teach a course and coordinating

Pilot Courses

Two pilot courses could be offered on a trial basis to determine effectiveness and issues:

- Introduction to Partial Differential Equations in Science and Engineering (MAE 298 – Hafez)
- Micro- and Nano-technology in Life Sciences (EEC/EMS/ECH 245 – Seker)
- Engineering Experimentation and Uncertainty Analysis (MAE 207 – C. Davis, Shaw, Jensen)

Possible Courses for ENG 2xx Series

Courses should pertain to subjects that are more generic and of interest to students in multiple departments. If pre-requisites apply, the pre-requisite courses should include courses from multiple departments. Courses should be graduate courses currently given in the College of Engineering. The following is a preliminary list of possible courses that have inter-departmental interest among graduate students. Courses can be added or removed from this list based upon consensus of departments.

Engineering Math

ECH259	Advanced Engineering Math
MAE298	Partial Differential Equations in Science and Engineering
ECS230	Applied Numerical Linear Algebra

Engineering Algorithms and Numerics

ECS122A	Algorithm Design
ECS231	Scientific Computation
ECS222A	Analysis of Algorithms
ECI212A	Finite Element Procedures in Applied Mechanics
ECS223	Parallel Algorithms
ECS240	Programming Languages
ECS220	Theory of Computation
ECS289K	Scientific Computing
ECS260	Software Engineering
ECS154	Optimization
MAE267	Parallel Computations in Fluid/Thermal Sciences
MAE219	Introduction to Scientific Computing in Solid and Fluid Dynamics
MAE239	Advanced Finite Elements and Optimization
MAE240	Computational Methods in Nonlinear Mechanics
MAE254	Engineering Software Design
ECI249	Design and Optimization

Computer Engineering

EEC270	Computer Architecture
ECS201A	Computer Architecture
ECS152A	Computer Networks
ECS171	Machine Learning
MAE253	Network Theory and Applications

Energy Systems

MAE218	Advanced Energy Systems
EBS216	Energy Systems
EBS289D	Energy Systems

Robotics and Control

EEC255	Robotic Systems
MAE272	Theory and Design of Control Systems
MAE225	Spatial Kinematics and Robotics
MAE272	Theory and Design of Control Systems

Engineering Experimentation

MAE207	Engineering Experimentation and Uncertainty Analysis
EBS265	Design and Analysis of Engineering Experiments

Material Science

ECI206	Fracture Mechanics
MAE250C	Mechanical Performance of Materials

MEMS/NANO

MAE229	Design and Analysis of MEMS
MAE271	Advanced Design and Analysis of Micromechanical Systems
ECH245	Micro- and Nano-technology in Life Sciences

Fluid Mechanics and Mass Transfer

ECS253A	Advanced Fluid Mechanics
ECH253C	Advanced Mass Transfer
MAE210AB	Advanced Fluid Mechanics

Appendix D:
Qualifying Exam Committee Size

To: Nicole Baumgarth, Chair, Graduate Council
 From: Chris Cappa, Chair, College of Engineering Graduate Studies Committee
 Re: Policy Regarding Qualifying Exams

11 March, 2017

Dear Nicole,

Current UC Davis policy (CG2005-02) requires that qualifying exams at UC Davis will include a minimum of five members. This minimum number of QE members is not imposed by UC policy. The minimum number of QE committee members varies between UC campus, with:

- 3 members: UC Merced ([link](#))
- 4 members: UC Berkeley ([link](#)), UC Santa Cruz ([link](#)), UCSF ([link](#))
- 5 members: UC Davis ([link](#)), UCSD ([link](#)), UC Riverside ([link](#)), UC Irvine ([link](#))

We ask that Graduate Council revise the QE Policy (GC2005-02) to reduce the minimum number of QE committee members to either 3 or 4, delegating authority to programs to determine whether their preferred number greater than or equal to this minimum. For example, UC Davis could adopt a policy similar to that at UC Berkely, which allows that:

“Degree granting programs can require either a four- or five-member Qualifying Examination Committee. Whichever option they choose must apply to all students in the degree program and be on record in the Graduate Division.”

The motivation for this proposed change is multifold. First, demands on faculty time continue to increase. This makes it increasingly difficult for QE’s to be scheduled in a timely manner, placing a burden on both the faculty and, especially, the students involved. While new policy allowing for one committee member to participate remotely has eased the burden somewhat in terms of scheduling, it does not fundamentally address the issue of faculty workload. Related, excessive challenges in scheduling contribute unnecessarily to what is already a stressful experience for students. In addition, challenges in scheduling have potential negative financial implications for students and faculty, especially for international students, since delays in advancing to candidacy impact NRST and, potentially, time to degree. Such non-academic reasons for delay of the QE should be avoided. Further, challenges in scheduling can encourage QE members to be chosen based on availability, rather than for academic reasons.

Second, the current policy states that the QE committee should “make every reasonable effort to reach a unanimous conclusion,” and unanimous conclusions are the most common outcome. Given the motivation for unanimous conclusions, there is no inherent need to have an odd number of committee members to e.g. break a tie. Additionally, anecdotally it seems that there is rarely need for five people on a committee. Fewer would do just as thorough a job, and possibly a more thorough job because there would not be a need to spread the limited time across so many people. Third, anecdotal evidence suggests that some of the scheduling challenges are leading to an increasing unwillingness by faculty to give a student a “no pass” on their first QE effort. Decisions regarding outcome are better determined for pedagogical, as opposed to logistical, reasons. A decrease in the minimum number of QE members would alleviate some of the logistical pressure. Fourth, faculty currently receive little recognition for



FACULTY EXECUTIVE COMMITTEE
COLLEGE OF ENGINEERING

ONE SHIELDS AVENUE
DAVIS, CALIFORNIA 95616

March 21, 2017

TO: Prof. Chris Cappa
Chair, COE Graduate Studies Committee

FR: Anh-Vu Pham
Chair, FEC Engineering

RE: Policy regarding qualifying exams

The College of Engineering Faculty Executive Committee (COE FEC) has reviewed and discussed matters related to the Graduate Studies Committee's (GSC) request to the Graduate Council to revise the qualifying exam (QE) policy to reduce the minimum number of QE committee members from five down to three or four. The FEC feels that the benefits to having five QE committee members are: 1) a wide range of opinions and feedback to students from a diverse group; 2) opportunities for students to interact with faculty they may not otherwise encounter; and 3) perhaps, opportunities for faculty to become familiar with each other's work.

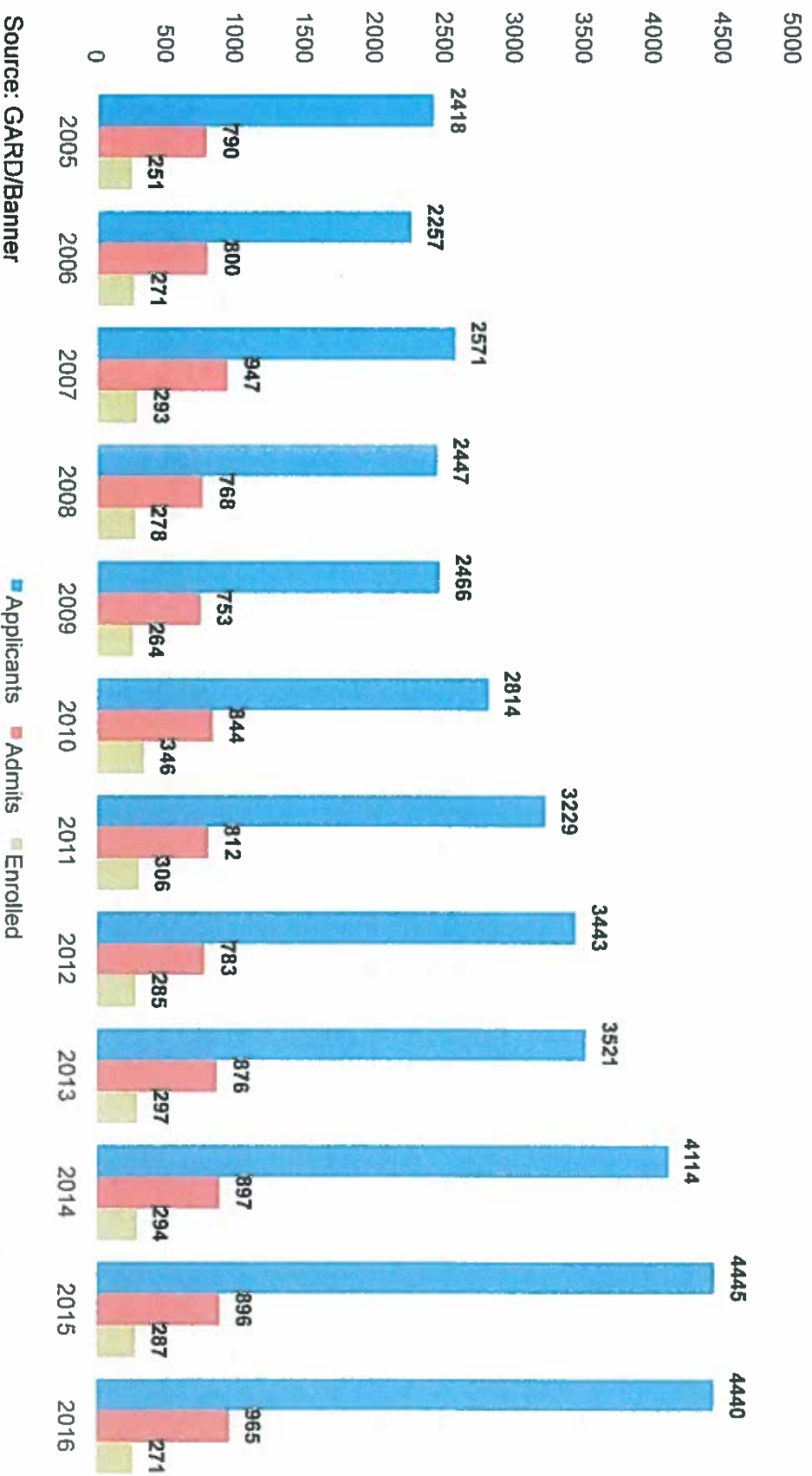
The FEC feels that issues related to scheduling difficulties can be alleviated by students planning ahead. In addition, the FEC recommends the COE GSC discuss the QE exams where a major advisor is or is not a member of the QE committee. In the case where a major advisor is a member of the QE committee, students get feedback from only four other faculty members instead of five. The FEC feels that stronger reasoning and data are needed to support the need for this change.

Appendix C:
Diversity Presentation Fall 2016

Graduate Admissions Trends

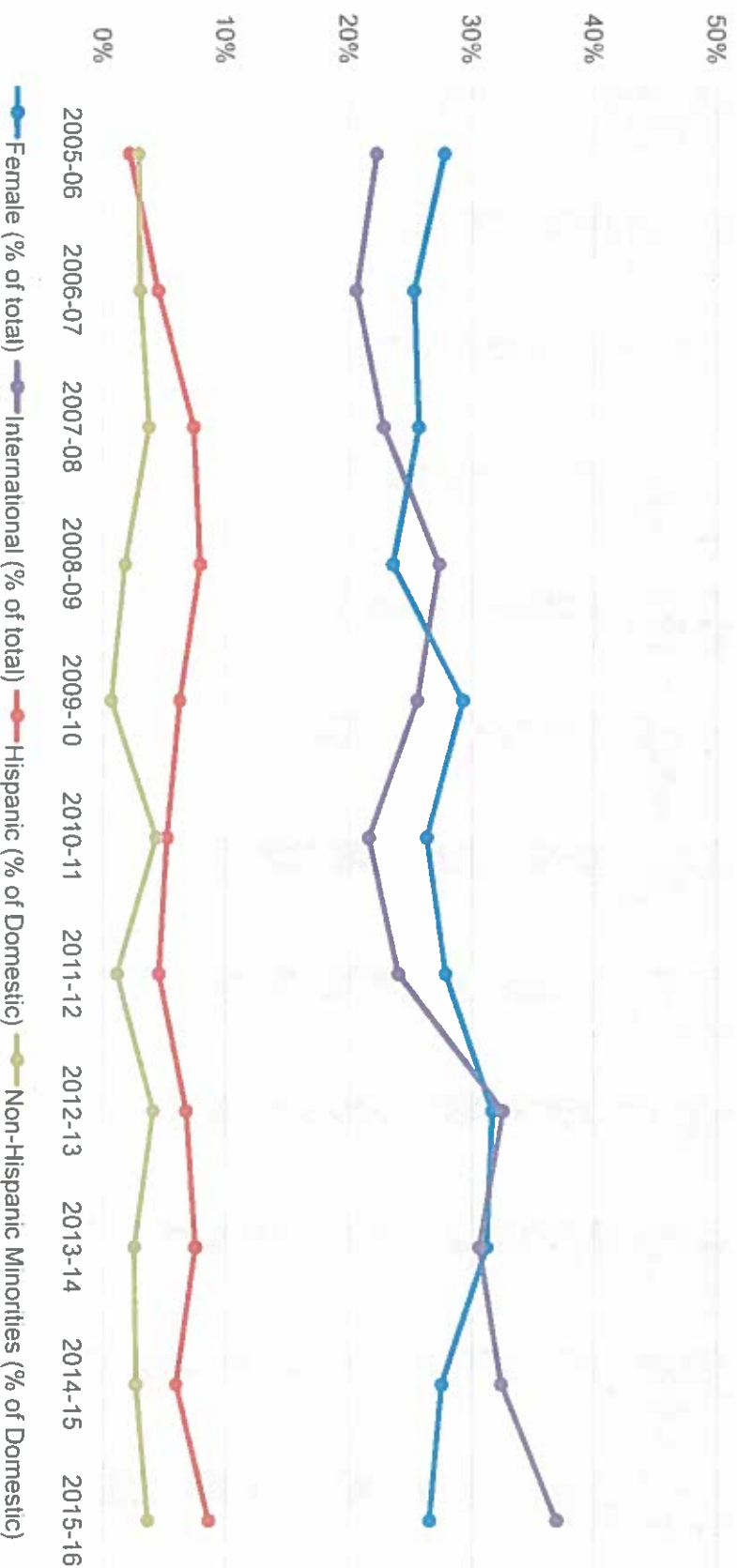
Appendix C

Graduate Admissions in the College of Engineering



Trends: Master's Degrees

Women, International, and Underrepresented Minority Students
Master's Degrees Awarded by Fiscal Year in the College of Engineering

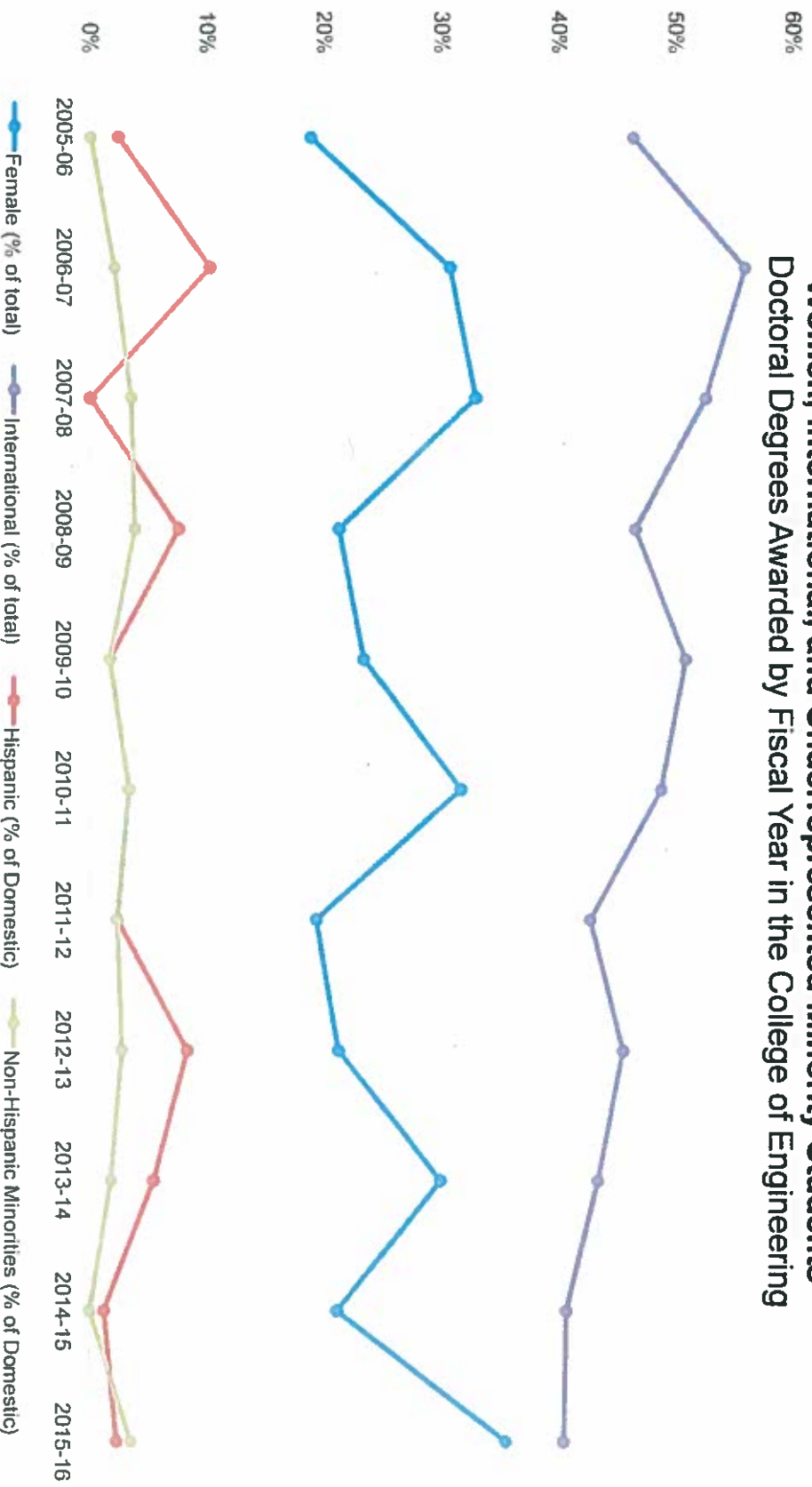


Beginning Fall Quarter 2010, the ethnicity standards defined by the Department of Education changed. Incoming students were categorized using the new standards, however the campus chose not to re-survey existing students. Hispanic/Latino American includes individuals of any race(s) who identify as Hispanic or Latino. Two or more races include any combination of two or more races that are not Hispanic/Latino ethnicity.

Trends: Doctoral Degrees

Appendix C

Women, International, and Underrepresented Minority Students
Doctoral Degrees Awarded by Fiscal Year in the College of Engineering

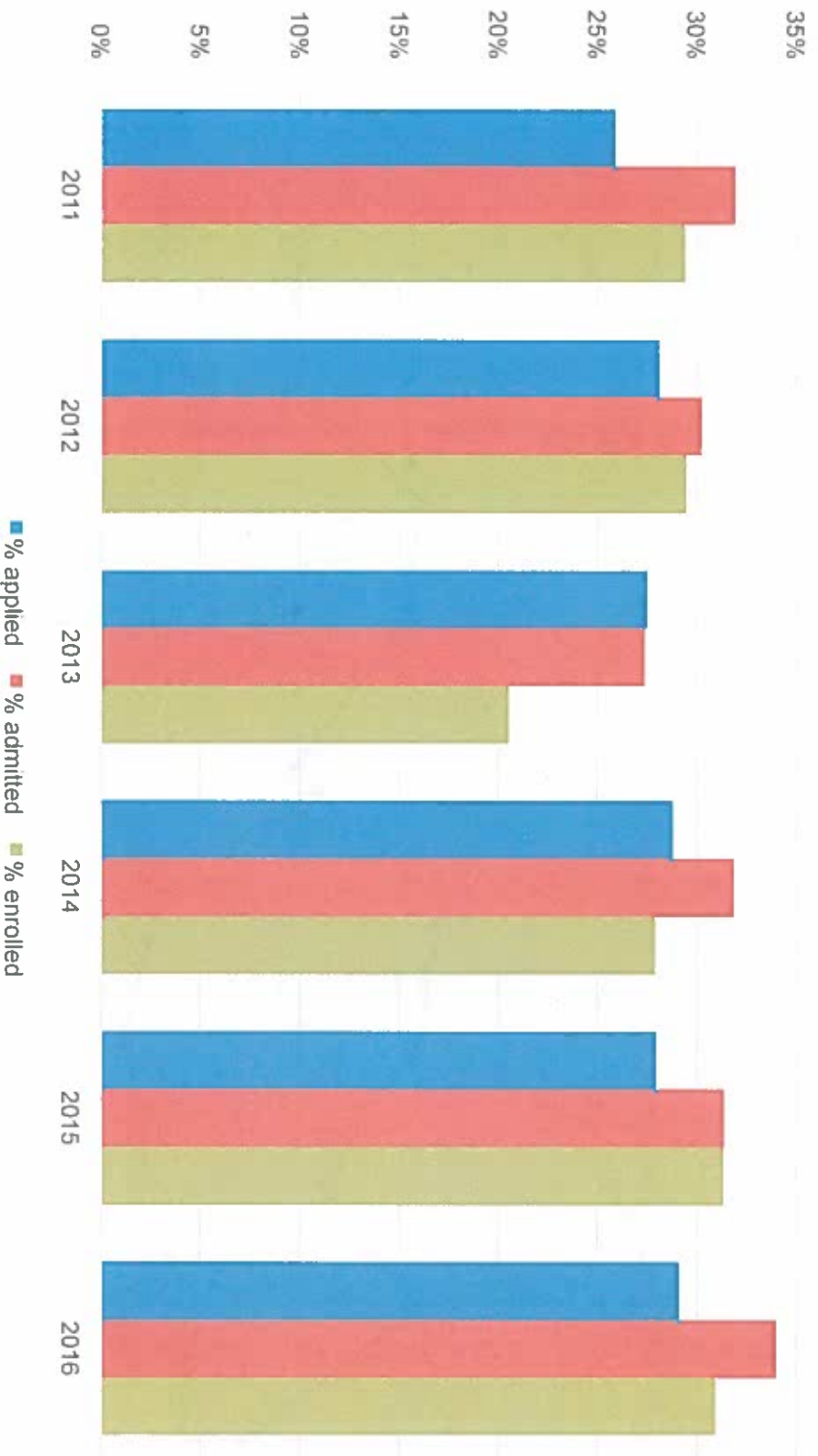


Beginning Fall Quarter 2010, the ethnicity standards defined by the Department of Education changed. Incoming students were categorized using the new standards, however the campus chose not to re-survey existing students. Hispanic/Latino American includes individuals of any race(s) who identify as Hispanic or Latino. Two or more races include any combination of two or more races that are not Hispanic/Latino ethnicity.

Graduate Applicant Gender

Appendix C

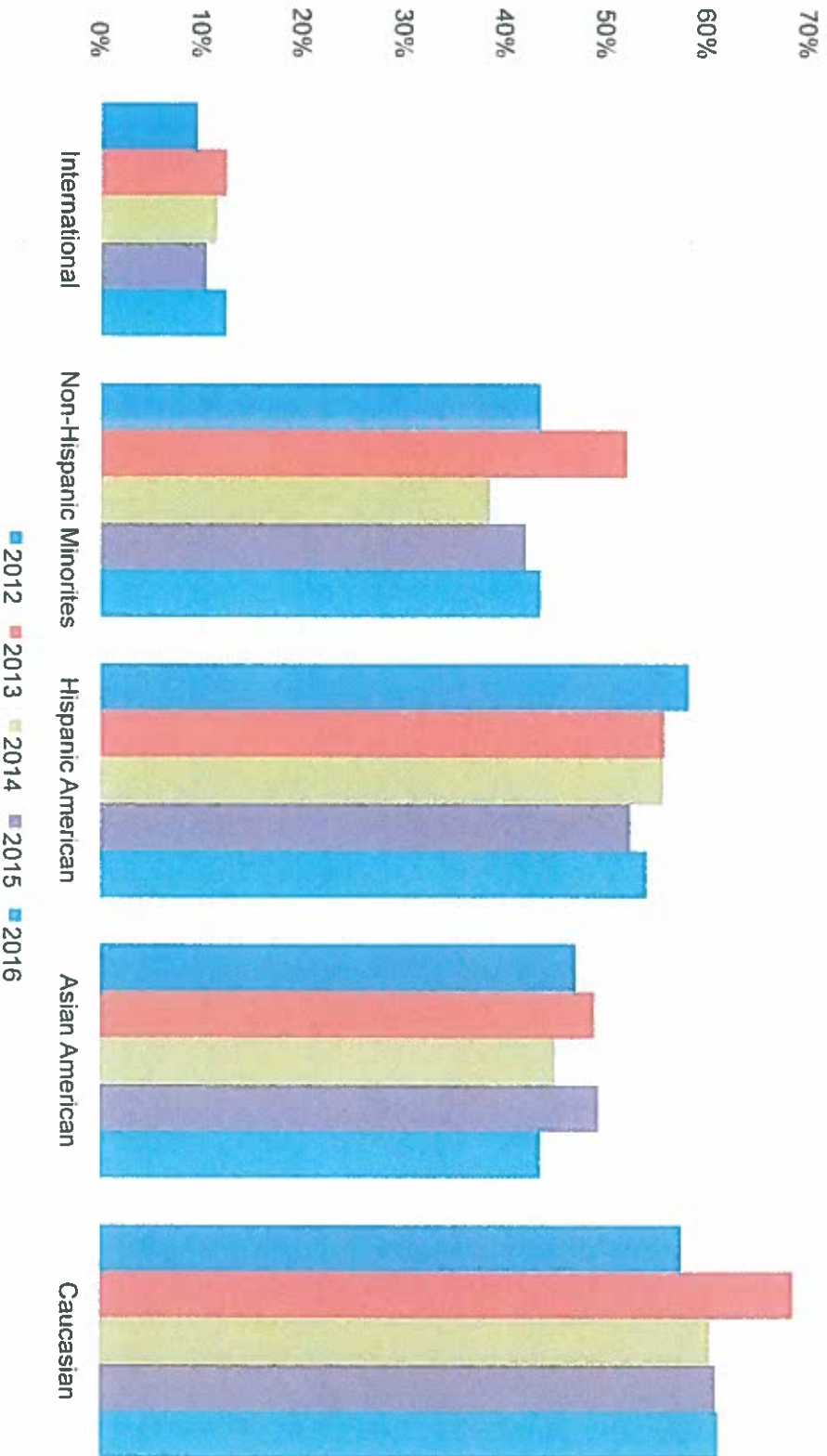
Percentage of Women Applicants, Admits and Enrolled



Source: GARD/Banner

Graduate Take Rate by Gender/Ethnicity

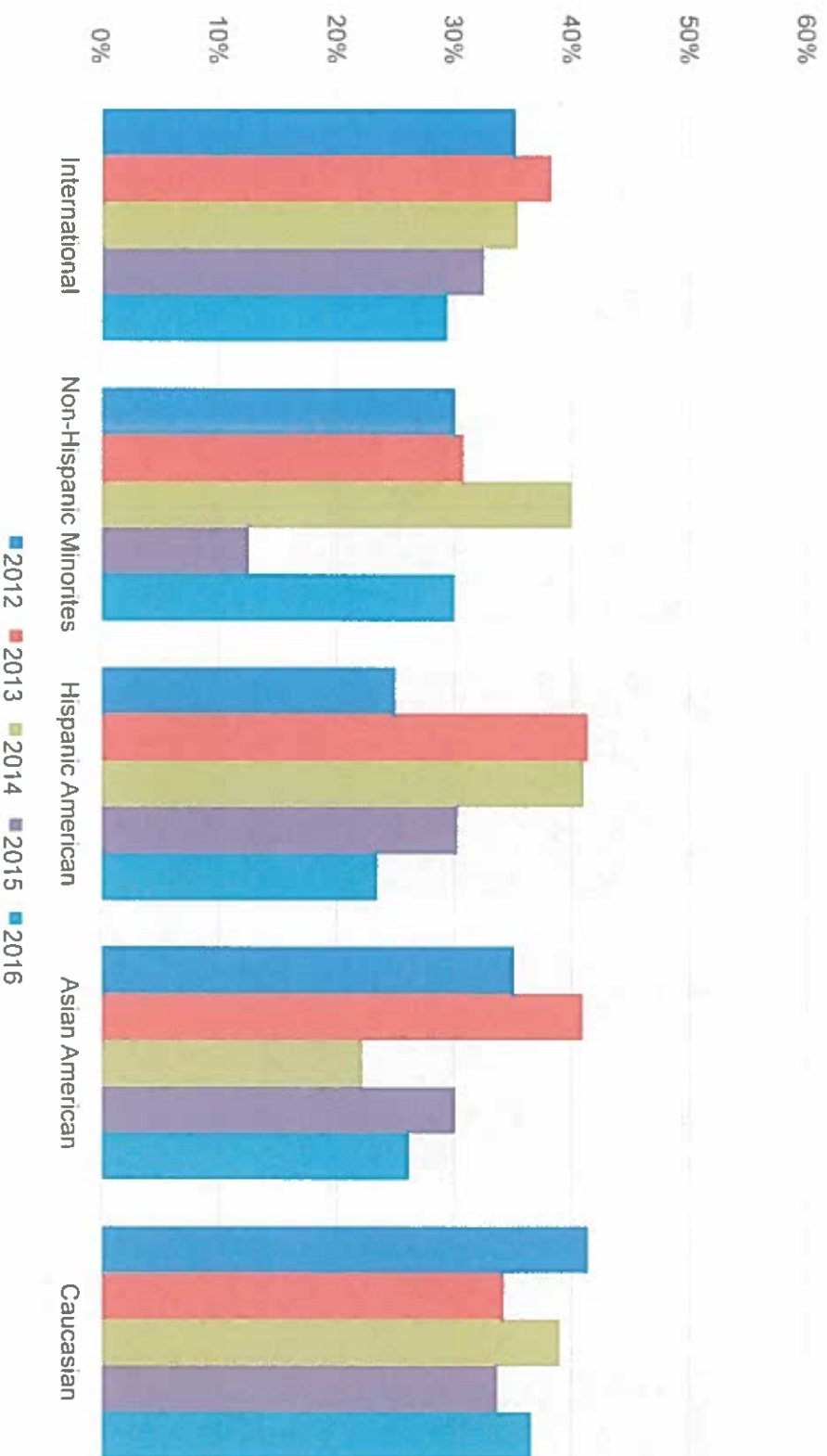
Take Rate of Men (Admits/Applicants)



Source: GARD/Banner

Graduate Yield by Gender/Ethnicity

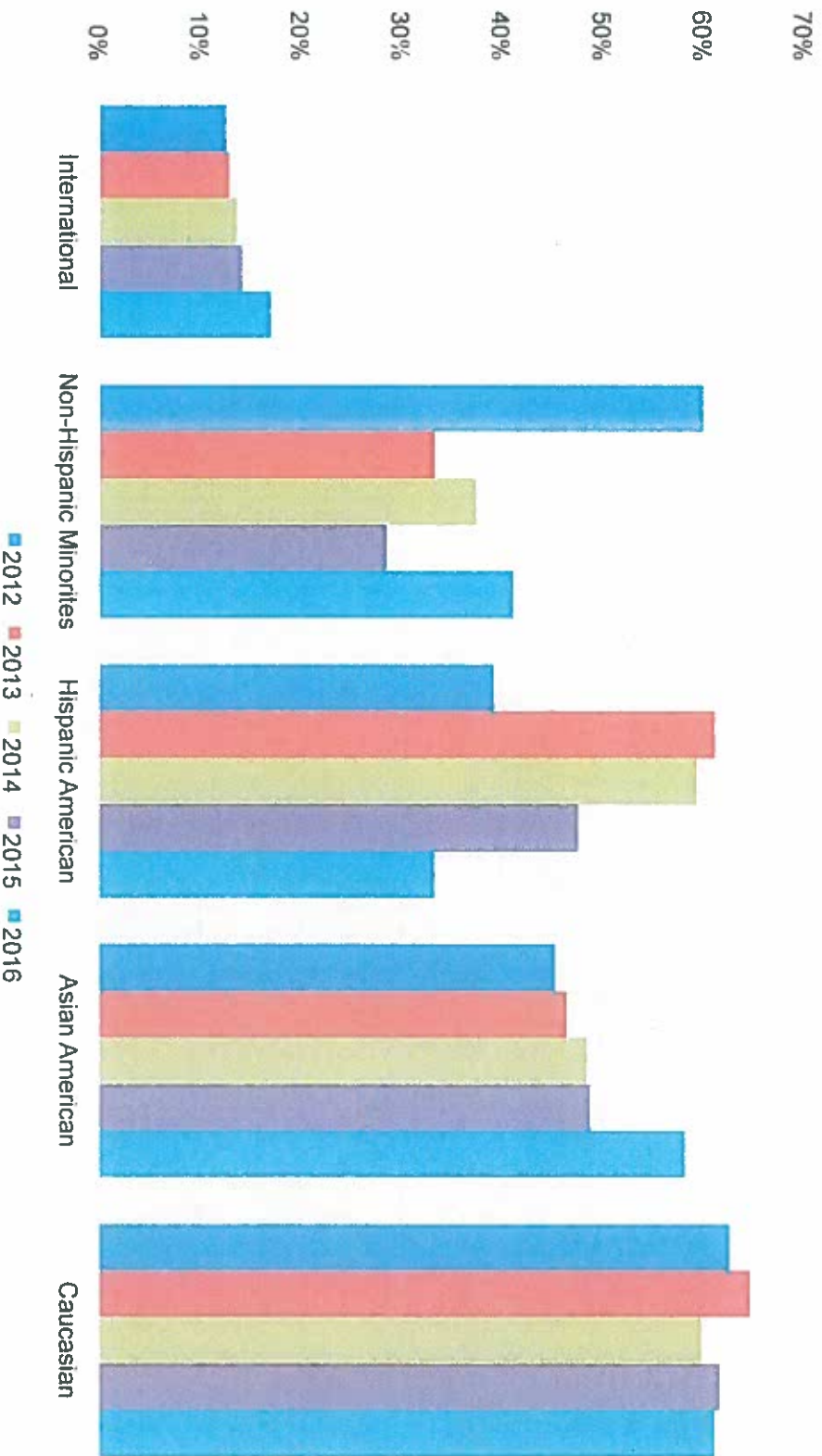
Percent Yield of Men (Enrolled/Admitted Applicants)



Source: GARD/Banner

Graduate Take Rate by Gender/Ethnicity

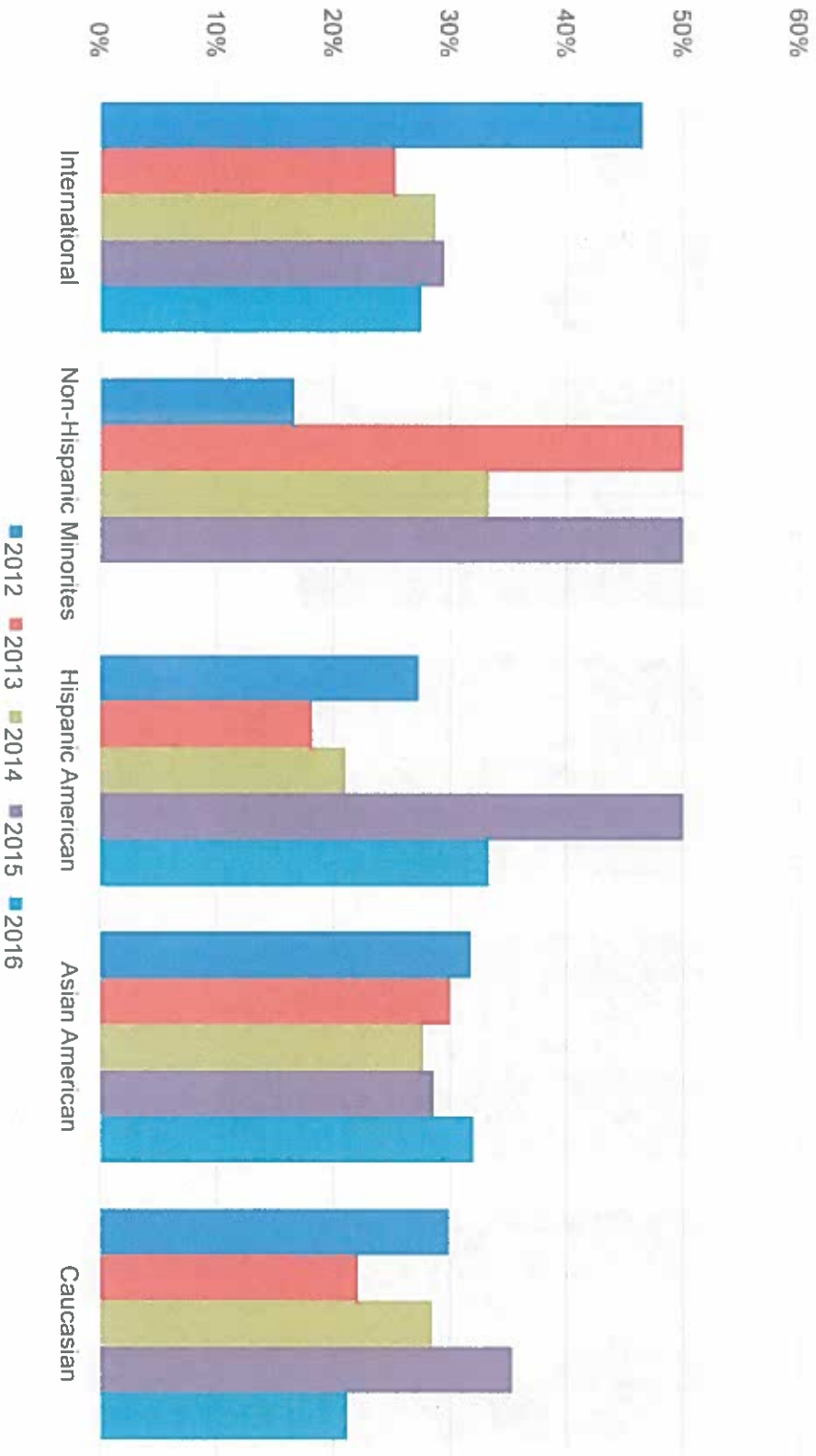
Take Rate of Women (Admits/Applicants)



Source: GARD/Banner

Graduate Yield by Gender/Ethnicity Appendix C

Percent Yield of Women (Enrolled/Admitted Applicants)

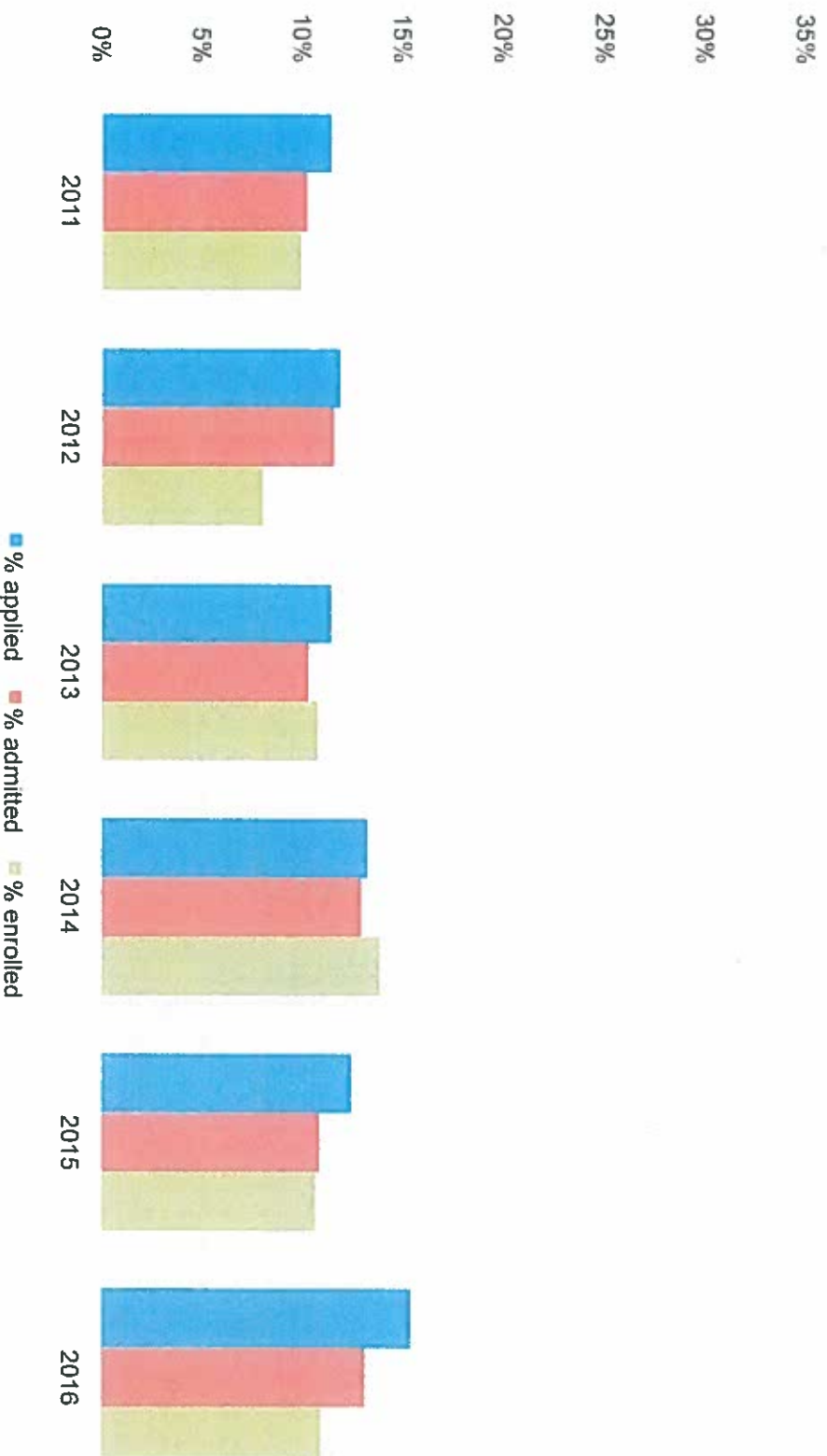


Source: GARD/Banner

Graduate Minority Applicants

Appendix C

Percentage of Minority Applicants, Admits and Enrolled (Domestic only)



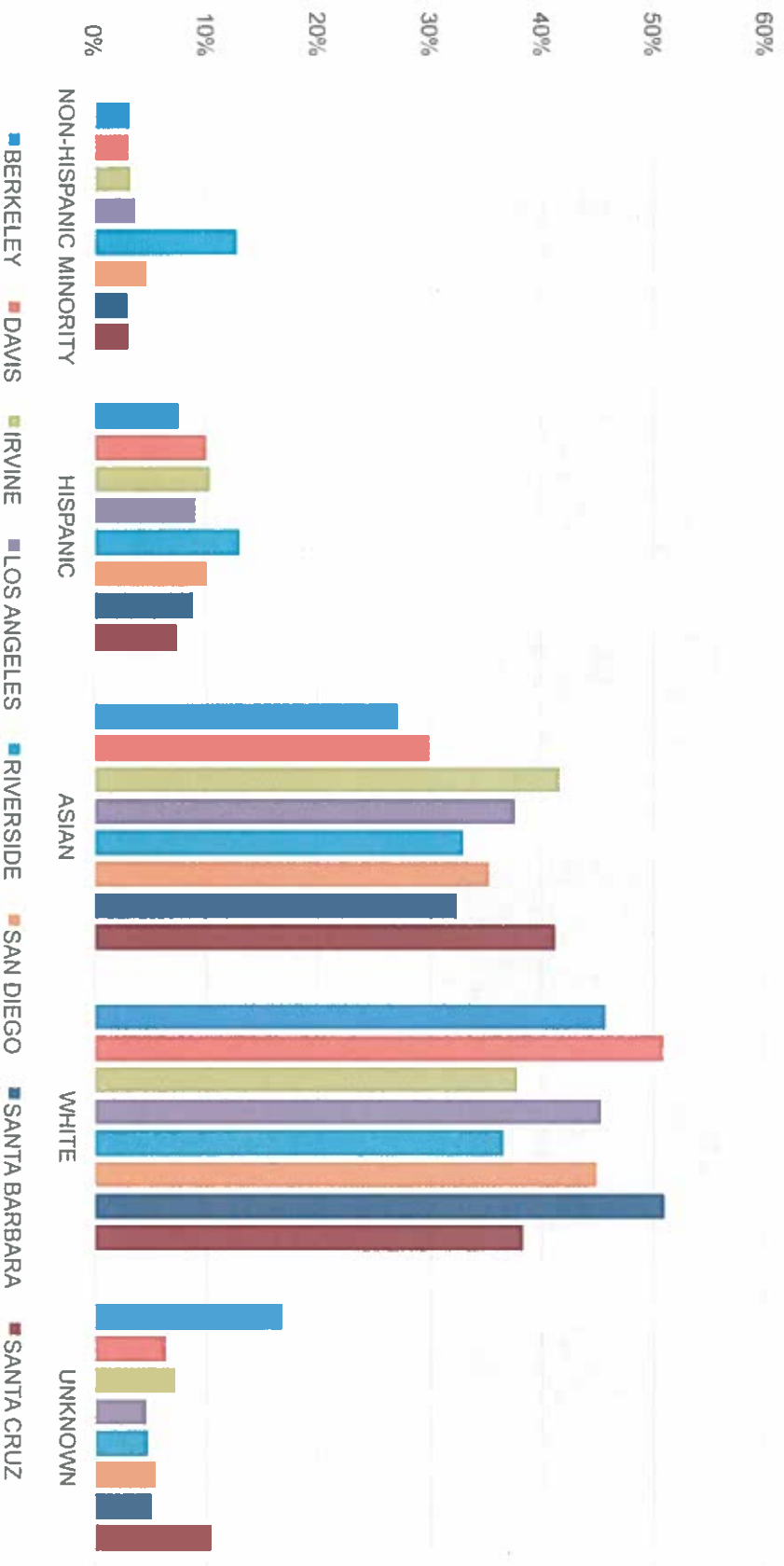
"Minority" includes students who identify as African-American/Black, American Indian/Alaska Native, Hispanic/Latino, or Pacific Islander.

Source: GARD/Banner

Graduate Domestic Applicants Across UCs (2015)

Appendix C

Percentage of Domestic Applicants by Ethnicity

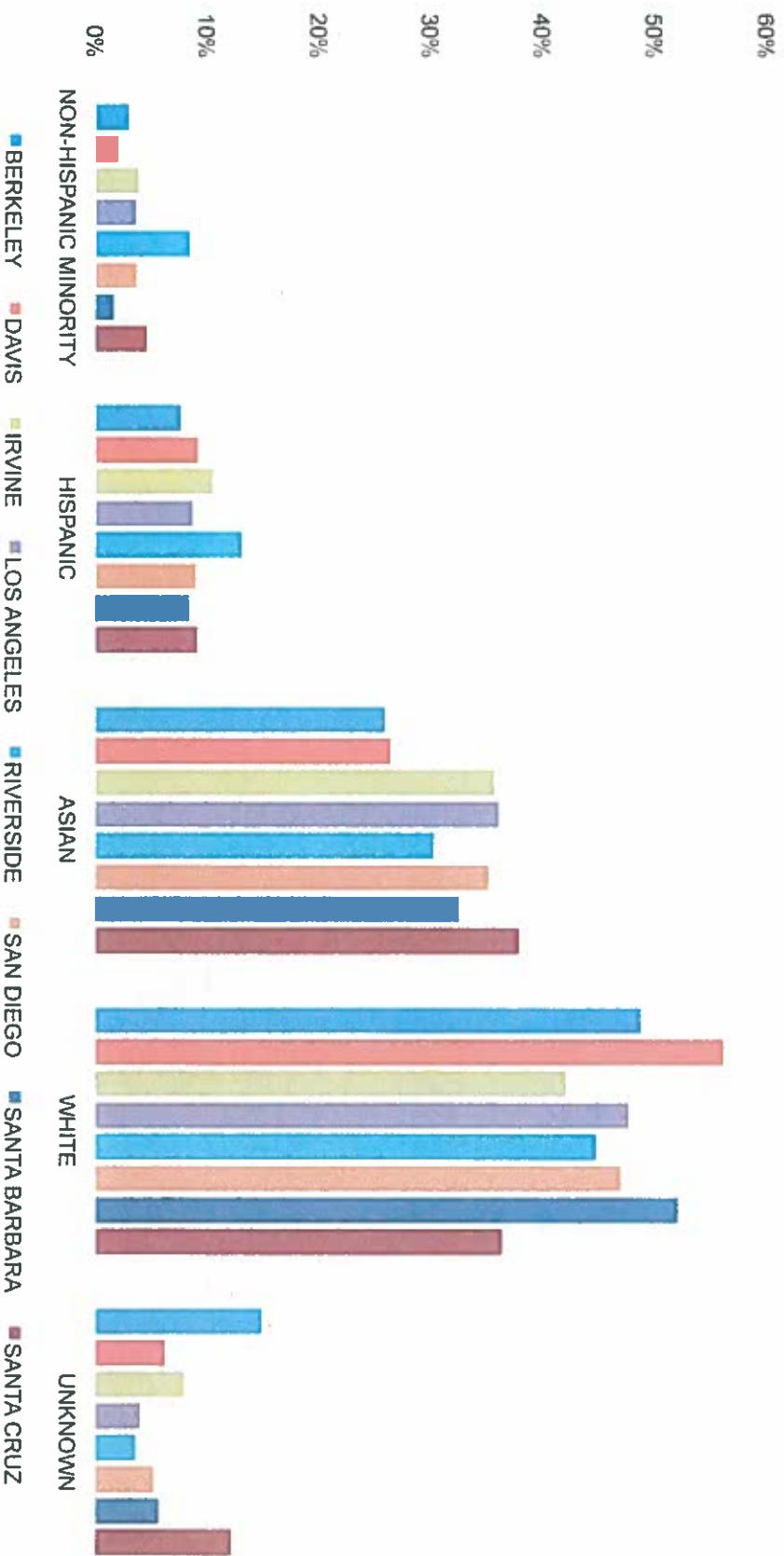


Source: UCOP Corporate Student System

Graduate Domestic Admits Across UCs (2015)

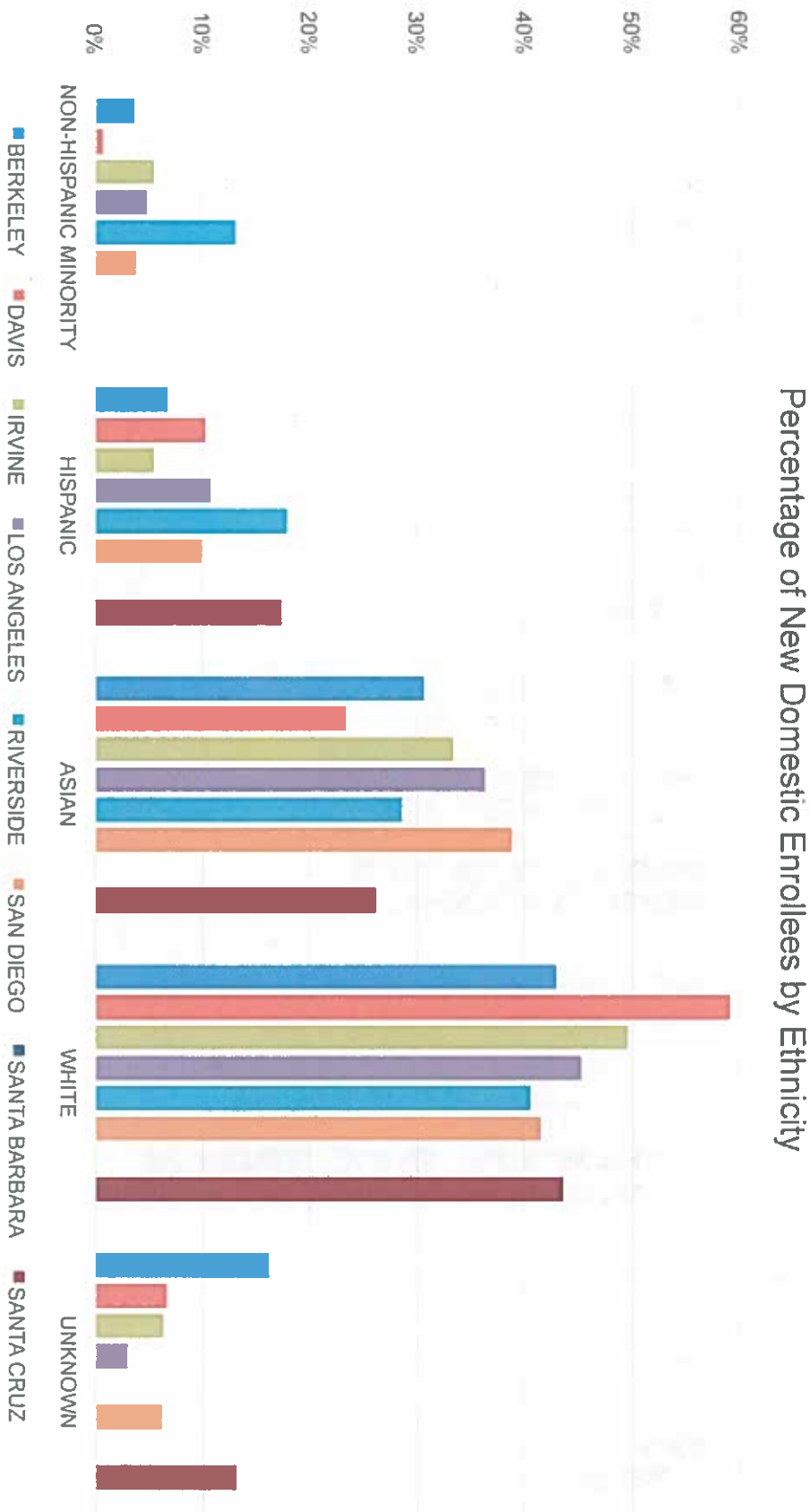
Appendix C

Percentage of Domestic Admits by Ethnicity



Source: UCOP Corporate Student System

Graduate Domestic New Enrollees Across UCs (2015)

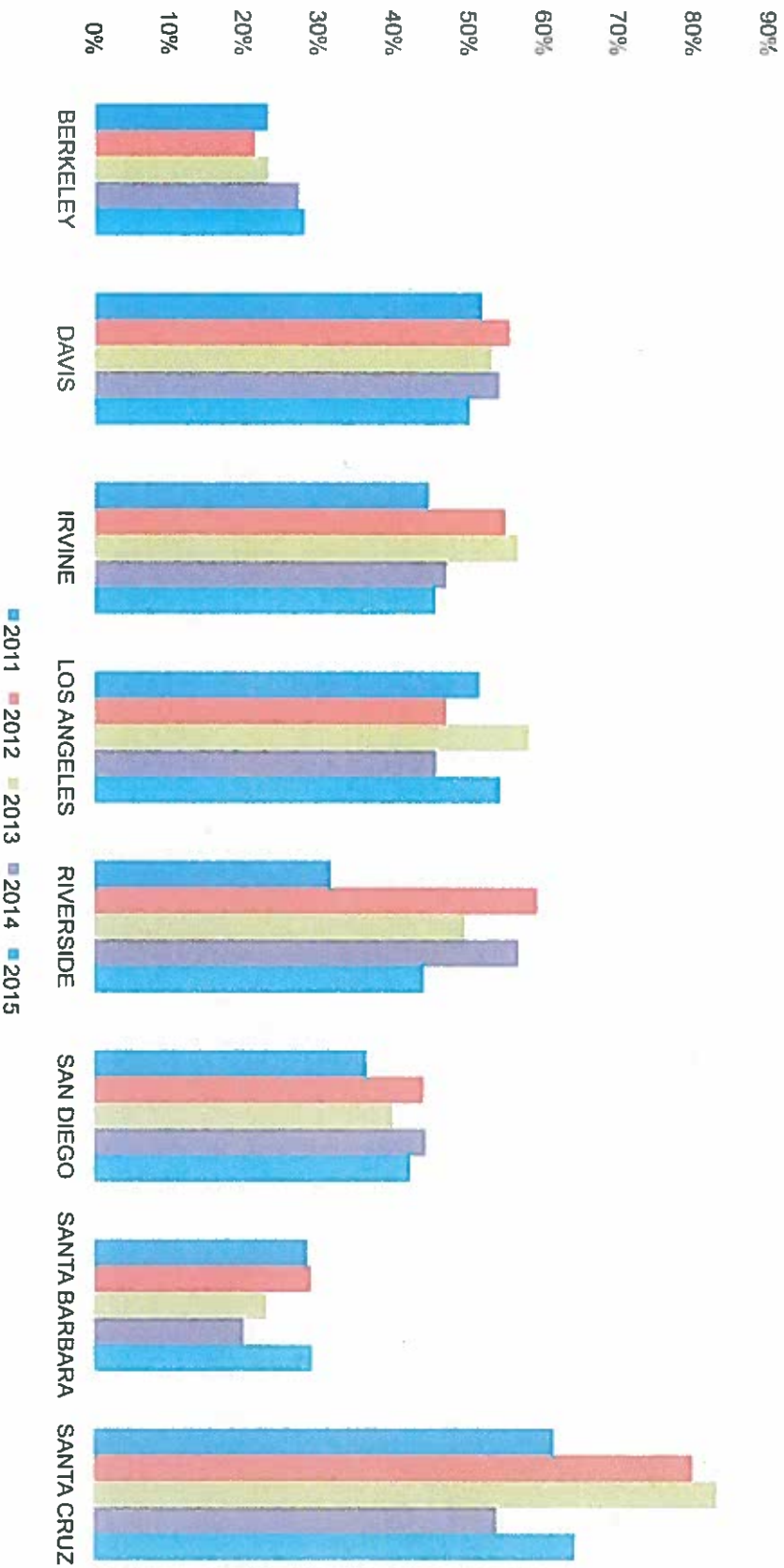


Source: UCOP Corporate Student System



Graduate Minority Take Rate Across UCs

Take Rate of Minorities (Admitted/Applied)

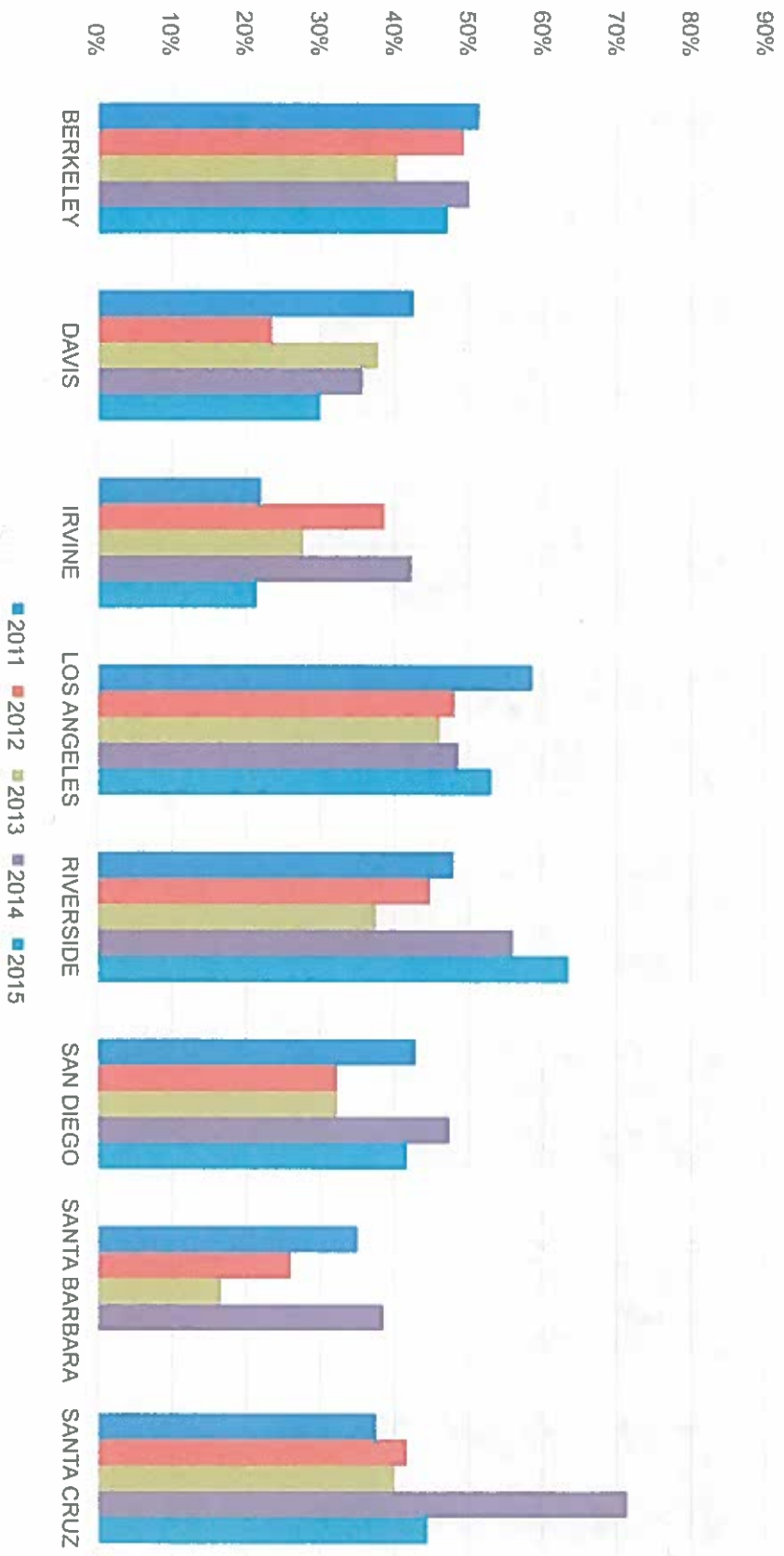


"Minority" includes students who identify as African-American/Black, American Indian/Alaska Native, Hispanic/Latino, or Pacific Islander.

Source: UCOP Corporate Student System

Graduate Minority Yield Across UCs

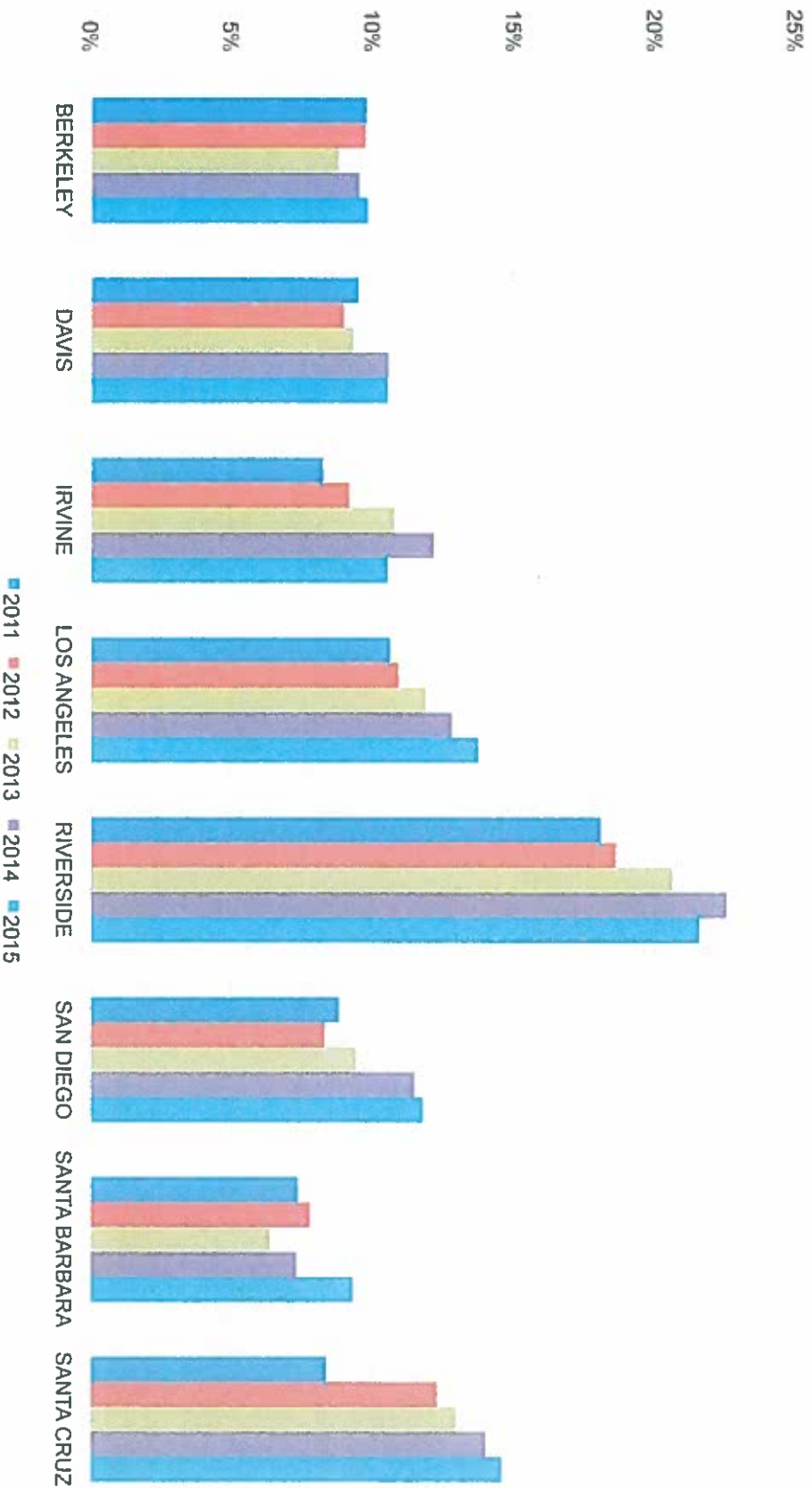
Percent Yield of Minorities (Enrolled/Admitted)



"Minority" includes students who identify as African-American/Black, American Indian/Alaska Native, Hispanic/Latino, or Pacific Islander.

Source: UCOP Corporate Student System

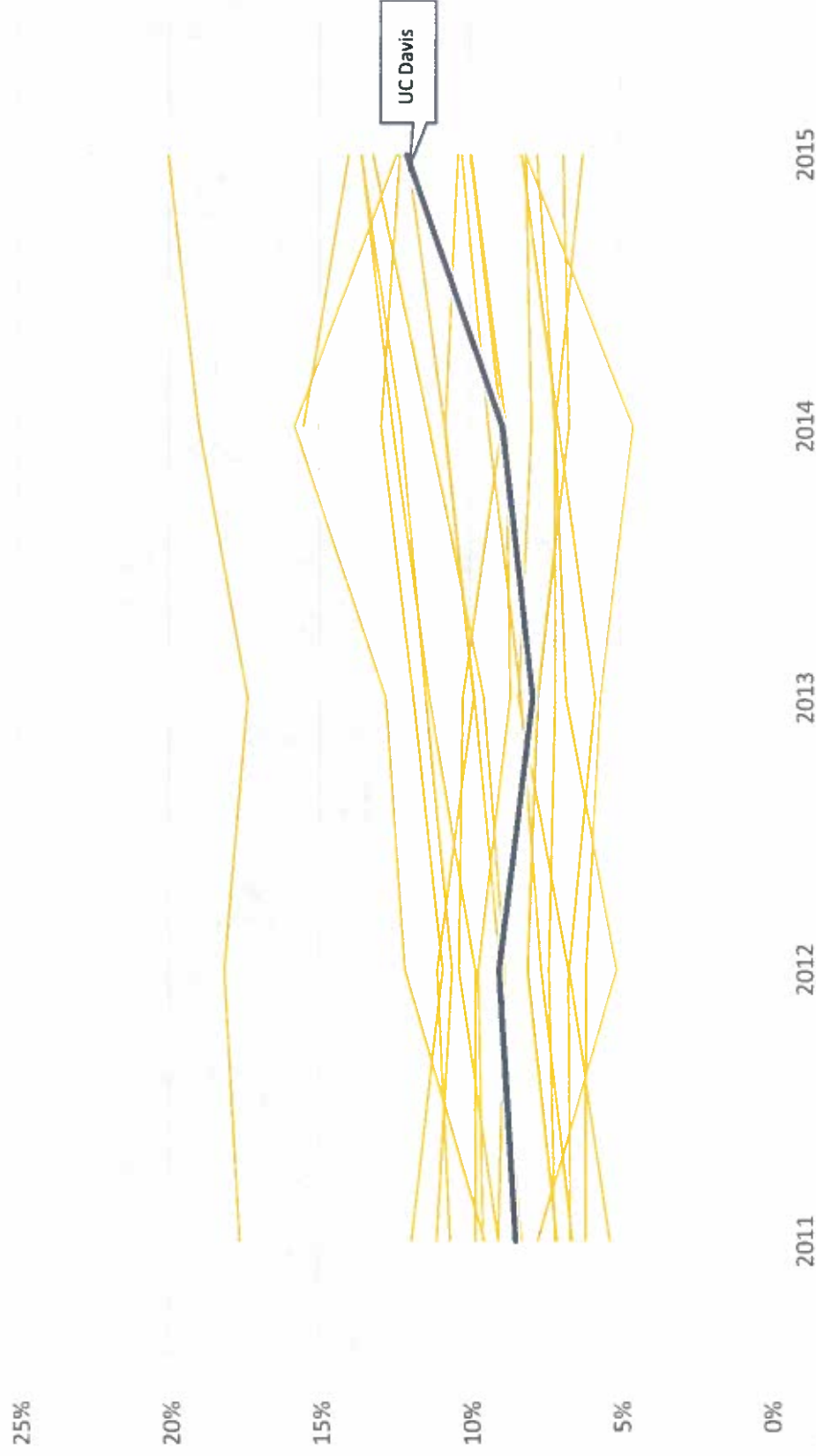
Graduate Minority Enrollment Across UCs



"Minority" includes students who identify as African-American/Black, American Indian/Alaska Native, Hispanic/Latino, or Pacific Islander.

Source: UCOP Corporate Student System

Graduate Minority Enrollment Across Top 20 Public Universities (USNWR)

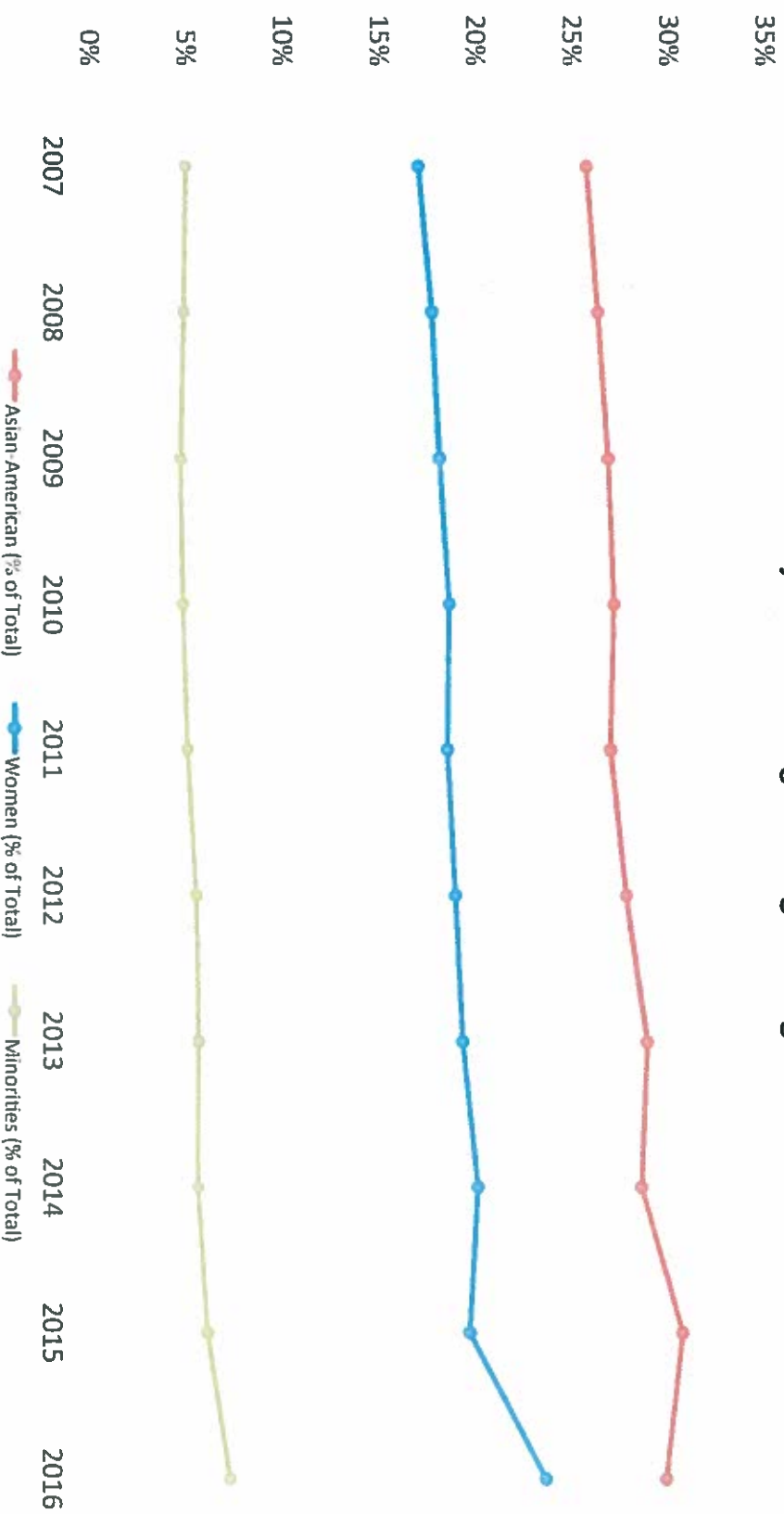


"Minority" includes students who identify as African-American/Black, American Indian/Alaska Native, Hispanic/Latino, or Pacific Islander.

Source: ASEE Data Mining Tool

Trends: Faculty Headcount

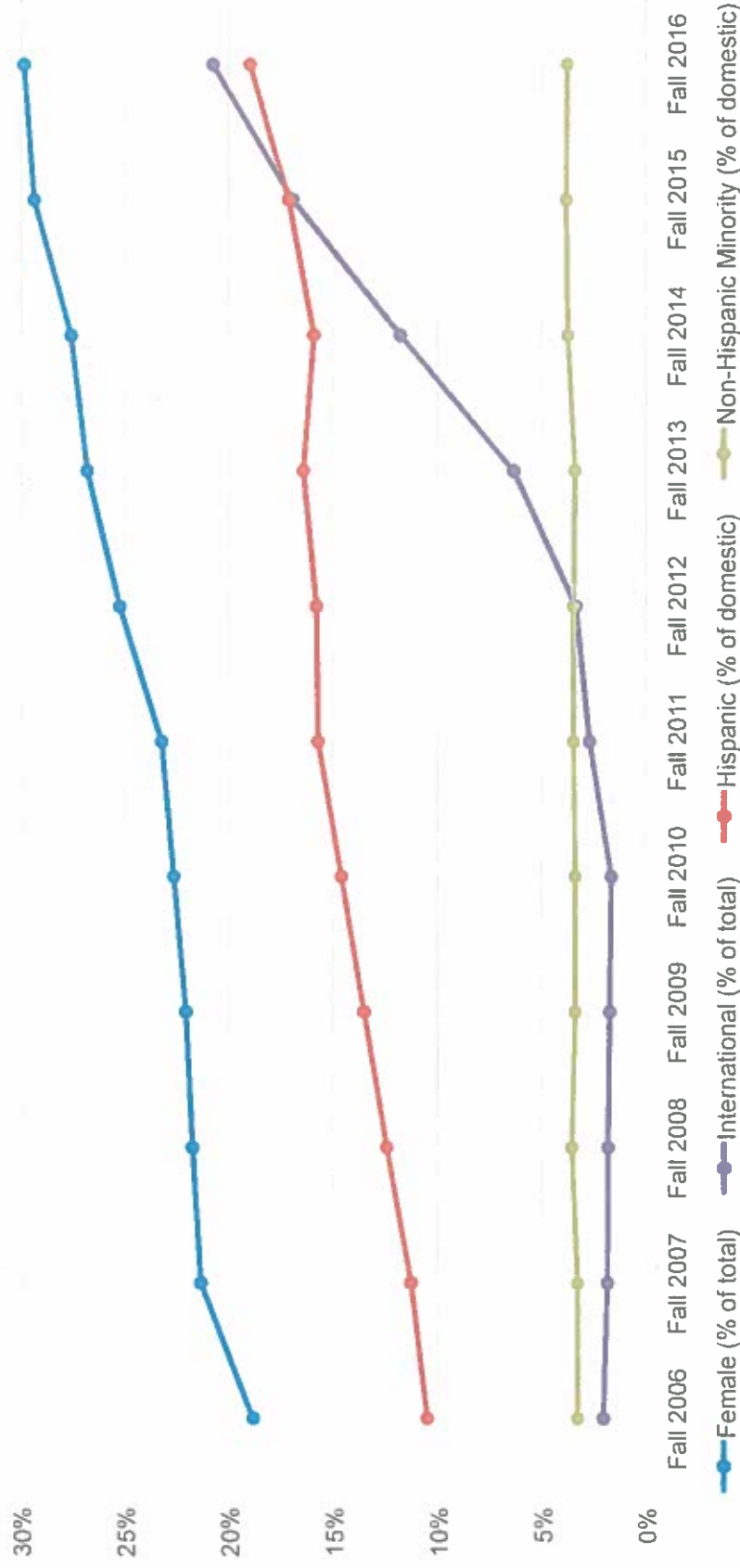
Asian-American, Women and Underrepresented Minorities*
Faculty in the College of Engineering



*Minorities include African-Americans, Native Americans, and Chicano/Latino/Hispanic-Americans

Trends: Undergraduate Student Enrollment

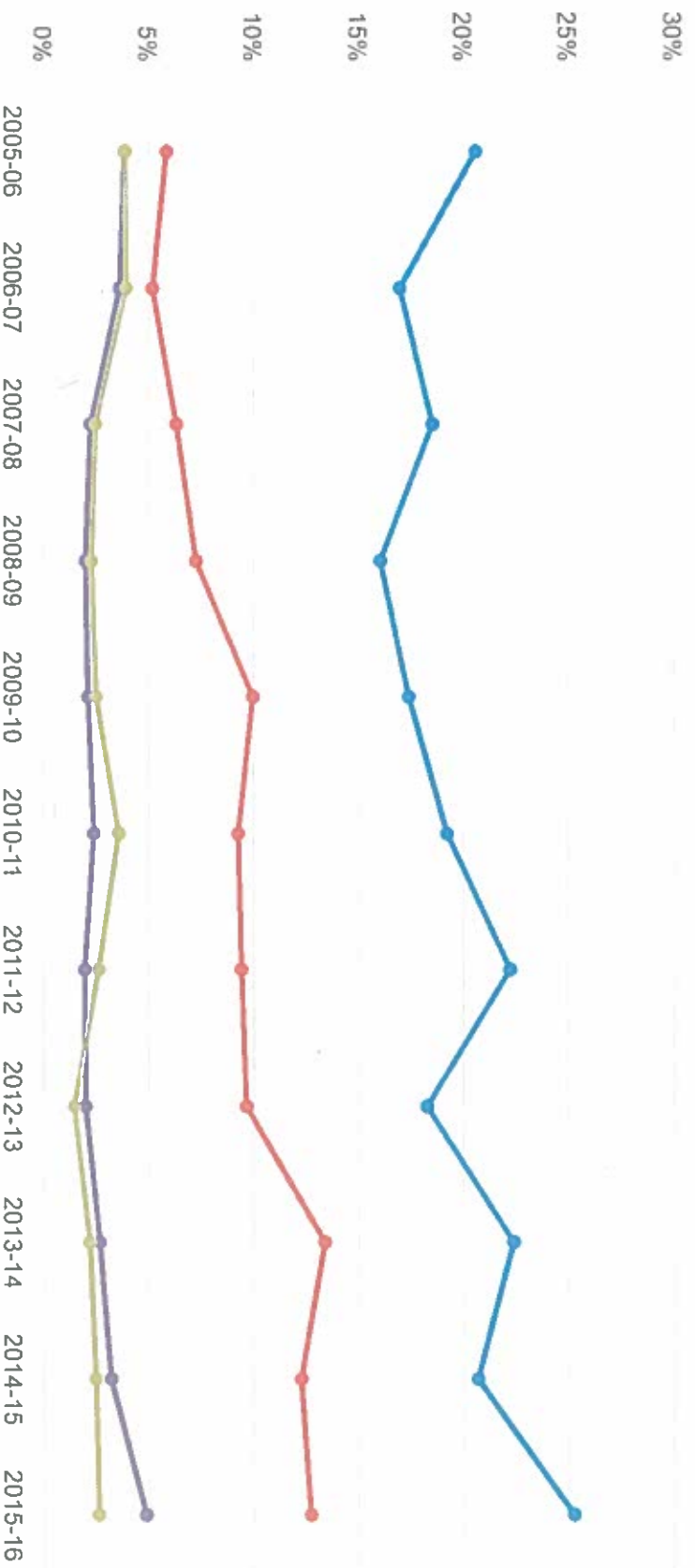
Percentage of Undergraduate Women, International Students, and Underrepresented Minorities Enrolled by Year



Beginning Fall Quarter 2010, the ethnicity standards defined by the Department of Education changed. Incoming students were categorized using the new standards, however the campus chose not to re-survey existing students. Hispanic/Latino American includes individuals of any race(s) who identify as Hispanic or Latino. Two or more races include any combination of two or more races that are not Hispanic/Latino ethnicity.

Trends: Undergraduate Student Degrees

Percentage of Undergraduate Degrees Awarded to Women, International Students, and Underrepresented Minorities by Year



Beginning Fall Quarter 2010, the ethnicity standards defined by the Department of Education changed. Incoming students were categorized using the new standards, however the campus chose not to re-survey existing students. Hispanic/Latino American includes individuals of any race(s) who identify as Hispanic or Latino. Two or more races include any combination of two or more races that are not Hispanic/Latino ethnicity.

Appendix B:
Masters Enrollment Incentive Plan (MEIP)



KENNETH C. BURTIS
Interim Provost and Executive Vice Chancellor

OFFICE OF THE PROVOST AND EXECUTIVE VICE CHANCELLOR
ONE SHIELDS AVENUE
DAVIS, CALIFORNIA 95616-8558
TELEPHONE: (530) 752-4964

October 4, 2016

DEANS

Re: Master's Enrollment Incentive and Program Development Mini-Grants

Dear Colleagues,

As you know, over the past year we have engaged in a number of conversations about the importance of increasing our graduate student enrollment and what opportunities and incentives could support this effort. By various measures, our graduate student enrollment at both the doctoral and master's level is significantly lower than that of many of our comparison institutions and other UC campuses. We also know that there is significant demand for some of our programs. Increasing our graduate student enrollment is not only consistent with our mission, but helps us support our undergraduate teaching and research missions through teaching assistants and graduate student researchers.

While the primary barrier to increasing enrollment of doctoral students is providing financial support for these students, we have learned that in some disciplines, the barrier to increasing enrollment of master's students is resources to support the instruction and workload that greater enrollment entails. By providing a greater financial incentive through an increased return of tuition to the units who choose to increase master's student enrollment, it is our expectation that we can address both of these issues. A portion of the tuition revenue generated would be directed to increased fellowships, which could be directed to support doctoral students. We also understand that increasing master's enrollment does not fit all disciplines.

Optional Increased Master's Enrollment Incentive

Beginning with the 2017-18 academic and fiscal year, we will offer master's programs the option to participate in a master's enrollment incentive that will provide a greater allocation through the graduate budget model. Building on our experience with the current model and the master's pilot, this incentive will provide access to greater funding allocations for incremental increases in master's enrollment. The attached issue paper outlines the details of the incentive, expectations about the use of revenue generated under the incentive, and requirements for participation. Programs wishing to participate should notify the Dean of Graduate Studies of their intent by January 15, 2017. The opportunity to opt-in to the incentive will be available annually. Programs who are not ready to begin the incentive next year will be able to do so in future years. Staff in the Office of Graduate Studies (OGS) and Budget and Institutional Analysis (BIA) are also available to assist programs in assessing this opportunity by providing data and modeling specific to their program.

Mini-Grants for Master's Program Development, Revision, or Evaluation

As part of the 2016-17 budget allocations, OGS received \$100,000 to support faculty and programs interested in developing, revising, or studying the viability of master's programs. Development of on-line efforts are highly encouraged. Funds allocated can be used for faculty buy-outs to support curriculum and program development, staff support for these activities, and support for market studies to assess the demand for specific programs. Programs developed, revised, or evaluated could ultimately be proposed as a regular graduate academic program that would be eligible for the master's enrollment

incentive or as a self-supporting degree program. The Dean of Graduate Studies intends to provide 3-4 grants in 2016-17. Details regarding the application process will be notified soon.

Other Investments to Support Graduate Student Enrollment Growth

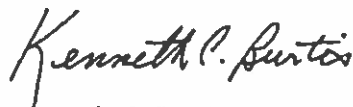
In order to grow our graduate enrollment, it is clear that additional central support for this effort is needed. The 2016-17 budget provided OGS with the following investments to support this effort:

- \$150,000 to support graduate student recruitment efforts by programs, primary bringing prospective students to campus. This doubles the funds available for these efforts.
- A marketing and communications position in OGS to support graduate student recruitment efforts centrally and in support of graduate programs.
- Development positions to support efforts to grow private donations and endowments to support graduate students.

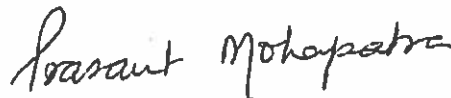
In addition, the UC Davis Graduate Student Fellowship Matching Initiative invites donors to establish named fellowships that may benefit students in any graduate program or area of study. Graduate Studies provides matching funds, resulting in both immediate and long-term advantages. Unlike traditional endowment models, the Graduate Student Fellowship Initiative uses matched funds to provide the initial support, allowing the endowment payout to be reinvested. This initiative provides a meaningful impact to graduate students with immediate support when it is most needed while simultaneously accelerating the impact of a donor's gift.

We look forward to working with you on these important initiatives to increase our graduate student enrollment, programs, and support. If you have questions about any of these efforts please contact Kellie Butler (ksbutler@ucdavis.edu) in OGS.

Sincerely,



Kenneth C. Burtis
Interim Provost and Executive Vice Chancellor



Prasant Mohapatra
Dean and Vice Provost of Graduate Studies

c: Graduate Program Chairs
Graduate Program Coordinators
Assistant Deans
Chair of Graduate Council
Interim Leader Kelly Ratliff
BIA Staff

**Memorandum of Understanding
Distribution and Use of Funds from the Masters Enrollment Incentive Program**

March 14, 2017

Graduate Studies Committee
and
College of Engineering

We agree to the following regarding the distribution and use of funds that are returned to CoE Dean's Office from Graduate Studies as part of the Master's Enrollment Incentive Program (MEIP). As per the MEIP guidelines, funds obtained through this program should be used to support and enhance graduate education. This MOU pertains to all of the graduate programs/groups in the College of Engineering (Applied Science, Biological Systems Engineering, Biomedical Engineering, Civil and Environmental Engineering, Chemical Engineering Computer Science, Electrical and Computer Engineering, Materials Science Engineering, Mechanical and Aerospace Engineering, Transportation Technology and Policy, and Energy).

The funding is split between the Dean's office and Programs/Groups with a split of 20:80 (Dean:Program). The appropriateness of this split should be revisited yearly.

1. Of the 80% that is distributed to programs should be returned to programs/groups proportionally based on whichever program/group generated the return.
2. Programs should have flexibility in determining how to best spend funds to support their particular graduate program. Appropriate activities/uses of funding include, but are not limited to:
 - a. Support of TA's and readers for graduate courses
 - b. Direct financial support of students through stipends or fee/tuition remission
 - c. Hiring lecturers to teach graduate courses
 - d. Expanding the support provided by staff
 - e. Encouraging a sense of community
 - f. Purchasing supplies for use in design projects or labs
 - g. Increasing the diversity of Programs/Groups
 - h. Outreach to potential students
3. The funds generated through this program and retained by the Dean's office can be used to support faculty start-up packages, with preference given to activities and/or equipment that will benefit graduate students. Using funds to support new faculty who will improve the diversity of the college is encouraged.
4. Every year in the fall, the Dean's office and Programs must provide a summary (about 1 page) of how the MEIP funding was used to support graduate education that will be reviewed by the GSC and Dean's office.

The GSC also requests that the Dean's Office examine the possibility of developing two types of new communal space: seminar space and workspace. The first would be space that can be used more effectively for the hosting of seminars. Many of the locations that have traditionally been used (e.g. 1003 or 1065 Kemper) have either been converted for other uses or are in such high demand that

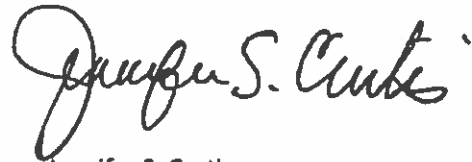
scheduling is becoming increasingly difficult. The second is recognition that substantial growth of MS and MEng programs across the college requires some space be available for master's degree students to work together on projects and other work. While it is, perhaps, unreasonable to expect desk space for all MS/MEng students, especially those who are not engaged in research, they nonetheless need a place where they can come together. Existing communal space, such as the tables in the lobbies of Kemper, Ghausi and Bainer Halls, is in high demand and often completely dominated by undergraduate students. The successful growth of our MS/MEng population will require that appropriate space for these new students be identified, developed and made available, ideally within the three major engineering buildings (Kemper, Bainer, Ghausi). We expect that lack of this type of space will be an important detractor for prospective MS/MEng students.



Christopher D. Cappa

Chair

Graduate Studies Committee



Jennifer S. Curtis

Dean

College of Engineering

Master's Enrollment Incentive Program Opt-in 2017-2018

Program	Opt-In	Base Enrollment
GBAE	Yes	6
GBIM	No	11
GCML	Yes	7
GECE	No	80
GCSI	Yes	64
GMAE	Yes	74
GEMS	Yes	6
GTPP	No	17
GEEG	Yes	0
GEEC	Yes	74

Appendix A:
Graduate Academic Certificate in Engineering Education

Graduate Academic Certificate Program in Engineering Education

Submitted on:

Graduate Council Approval:

I. Description of the Graduate Academic Certificate (GAC) Program

The GAC in Engineering Education offers graduate students in engineering graduate programs the opportunity to prepare for educational roles in research, teaching, service and program administration at various academic institutions (including K-12 schools, universities, colleges, and community colleges); educational and government agencies; research foundations; and industries that are looking for engineers who are highly competent in their specific discipline, with an added emphasis in engineering education.

Objective statement

This GAC will provide engineering graduate students the following benefits:

- Improvement in instructional skills through mentored teaching experiences;
- Theoretical background and practical experience in engineering education;
- Knowledge and awareness of the benefits and opportunities for diversifying the engineering profession to be more inclusive;
- Experience in developing pedagogical strategies and assessment programs that respond to specific needs;
- Practical and mentored experience on their path to becoming effective educators;
- Experience in disseminating discipline specific research to a broader audience;
- Preparation for writing and/or leading engineering research proposals that have an educational component;
- Preparation for writing and/or leading educational proposals focused on engineering.

Rationale for a GAC in Engineering Education

Increasing the number and diversity of students pursuing engineering degrees is critical for meeting the workforce demands and for addressing complex challenges facing California, the nation, and the world. Undergraduate enrollment in the UC Davis College of Engineering has increased dramatically over the past five years, expanding from 3,200 to 4,300 students and further growth is anticipated. Concomitant with the need to educate a greater number of engineering students, colleges of engineering nationwide recognize that we need to recruit, retain, and educate inclusive communities of students from a wide range of backgrounds. Full inclusion of persons from groups historically underrepresented in engineering remains an elusive goal in our profession. Furthermore, many institutions of higher education are beginning or accelerating efforts to incorporate new hands-on design experiences and adapt new technology into the engineering curriculum. As engineering disciplines become more specialized, requiring ever increasing depth of knowledge in sub-disciplines, undergraduate students sometimes find it hard to make the connection between their ultimate goal of “solving important problems in the world” and the high work load and fast-paced, rigorous

series of courses that form the foundation of all engineering disciplines. The desired growth in engineering enrollments and concomitant diversity and the need for new approaches to educating engineering students motivates this proposal for a GAC in Engineering Education.

National Science Foundation. The National Science Foundation has recently launched three initiatives directed at improving how engineers are being prepared for their careers as well as addressing the unacceptable low percentage of underrepresented groups entering the profession. The launching of these initiatives: Professional Formation of Engineers (PFE); Improving Undergraduate STEM Education (IUSE); and Revolutionizing Engineering Departments (RED) indicates the recognition of a national need to provide graduate students in engineering with explicit opportunities to improve their chances of becoming effective and successful educators and researchers. Even for our doctoral students who intend to largely focus on research in their careers, having an emphasis in engineering education will be beneficial. All successful NSF research proposals must contain a section labeled "Broader Impacts of the Proposed Work".

"Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to the project. NSF values the advancement of scientific knowledge and activities that contribute to the achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education." (taken from NSF proposal guidelines)

National Academy of Engineering. In addition to preparing our doctoral students for professorial roles in colleges and universities, there is a need to mentor graduate students on teaching pedagogy and assessment and in the translation of engineering research and fundamentals into the K-12 curriculum. The National Academy of Engineering's Fall 2009 publication, *The Bridge: Linking Engineering and Society* was devoted to the topic of K-12 Engineering Education. In the lead article "The Status and Nature of K-12 Engineering Education in the U.S." (Katehi, Pearson and Feder), the authors state "*Although many questions about K-12 engineering education remain unanswered, engineering is being taught in K-12 schools around the country, and it appears that the trend is upward. Thus it is imperative that we begin thinking about ways to guide and support engineering education in*

the future. An underlying question for policy makers is how engineering concepts, skills, and habits of mind should be introduced into the school curriculum. "

Even more recently the NAE began a new project entitled Guiding Implementation of PreK-12 Engineering in the United States. The goal of this three-year project is to provide guidance to key stakeholders in U.S. K-12 education regarding effective engineering education. Thus there is clearly a growing need to support effective translation of engineering into the K-12 curriculum.

ABET Engineering Accreditation. Another potential benefit expected to occur from a DE in Engineering Education is better training of future educators in providing a continuous, consistent and sustainable focus on evaluation and assessment of the engineering curriculum. Every six years, the accreditation board for engineering (ABET) conducts a rigorous review of all accredited engineering undergraduate degree programs across the country. The requirements for a successful review create an enormous workload and the vast majority of faculty are not well prepared to lead their departments through a successful review. Providing our graduates with an understanding of evaluation and assessment practices, particularly in the context of both ABET requirements, will allow an improved demonstration of reflective practice, including the informed use of data to monitor and assess student learning. This understanding of program evaluation and assessment gained by our graduates is also likely to be valuable to them when submitting proposals for graduate training grants such as provided by the Department of Education (GAANN or Graduate Assistance in Areas of National Need) and other government agencies.

Purdue University School of Engineering Education (ENE). In 2004, Purdue established the world's first engineering education doctoral program. The program remains today the best known in the U.S. for its focus on rigorous fundamental research on engineering learning and connecting that research into practice. Our GAC in Engineering Education is not meant to be nearly as in depth but is considered a significant step in improving the preparation of our engineering doctoral students for careers that have an education component.

The *Journal of Engineering Education* (JEE) is the research journal for engineering education and will provide a useful avenue for dissemination of any innovative work done in the GAC. JEE is a peer-reviewed international journal published quarterly by the American Society for Engineering Education (ASEE) in partnership with a global community of engineering education societies and associations. JEE is listed in the Science Citation Index (categories: Education, Scientific Disciplines; Engineering, Multidisciplinary), and the Social Sciences Citation Index (categories: Education, Education Research) by Thomson-Reuters and the Institute of Scientific Information (ISI) and the tables of contents are reproduced in ISI's Current Contents/Engineering, Computing and Technology and Current Contents/Social and Behavioral Sciences. JEE is also listed in the EBSCOhost research databases (Education Research Complete™ and Academic Search Complete™) and the Elsevier bibliographic research database, Scopus. JEE is a founding member of

the International Federation of Engineering Education Societies, and the journal is rated A* by the Australian Research Council. The existence and strength of JEE and ASEE indicate that our GAC in Engineering Education will have a national and international framework in which to grow.

UC Davis College of Engineering. In the past five years, there has been a major shift in engineering curricula and pedagogy to improve student-learning experiences and retention and increase student engagement in courses using, for instance, design-centric, project-based learning. To meet this shift, the College of Engineering has, in the past year, hired a cohort of faculty specifically selected on the basis of their focus on, and potential for, enriching our undergraduate engineering program. These new faculty will also play an important advising role for graduate students interested in engineering education. A significant number of our graduate students do pursue a teaching career and these future faculty are likely to make transformational changes in the engineering curriculum. We cannot continue to rely on only traditional research focused graduate programs to prepare these future engineering educators. We need to provide additional and explicit opportunities for our graduate students to become effective leaders in engineering education.

Center for Educational Effectiveness. The Center for Educational Effectiveness (CEE) at UC Davis is anticipated to be a valuable partner in the GAC. Currently the Center staff provide *“consultative support to faculty, post-doctorate scholars, and graduate students who are interested in applying research-based best practices that promote student learning; deepening their understanding of how students learn; and promoting excellence in education for UC Davis students”*. In particular, the Center has the capability to provide individualized mid-quarter interviews, video recordings and subsequent feedback, and classroom observations as well as workshops and consultations on teaching skills for graduate students.

The Center has begun partnering with the College of Engineering in developing this GAC; Dr. Kem Saichaie, an Educational Specialist in the Center, is working with us to establish a professional learning community to support on-going inquiry about teaching and learning. To this end, Dr. Saichaie has met with ten of the newest tenure track faculty in the College of Engineering to facilitate the development of an Engineering Education Learning Community (EELC). This faculty group, or EELC has chosen to meet regularly this year to explore the culture of teaching and learning at UC Davis and in the College of Engineering; identify goals for professional development related to evidence-based and innovative approaches to engineering education; and build capacity for positively impacting the education of undergraduate students. These faculty will participate in regular seminar-style meetings facilitated by content-area experts from Undergraduate Education, senior engineering faculty, and guest speakers from the UC Davis campus. Some of the more specific self-stated goals of this EELC include supporting fellow participants; addressing specific campus needs; reading and discussing articles and books on education, learning, teaching; observing one another's classes, viewing and discussing videos and webinars on teaching; implementing selected teaching methods in their own classes; and conducting informal classroom research or formal

(and possibly funded) educational research. These faculty will also play an influential role in this GAC.

Examples of Currently Posted Relevant Positions. As an example of the demand for this type of preparation, the October 1, 2015 job announcements in the American Society of Engineering Education journal included the following. In addition, and not listed below, are numerous regular engineering faculty positions available that do not explicitly specify “education” but routinely require both a research and teaching statement as part of the application/interview process.

- Multiple Positions: Engineering Education Research Faculty Positions, All Ranks, University of Michigan
- Post-Doctoral Scholar Position in Engineering Education Research at Oregon State University
- Postdoctoral Research Fellow in Engineering Education Research at University of Michigan
- Post-Doctoral Research Position in Professional Development of Engineering Graduate Students, University of Tulsa
- Assistant/Associate Professor in Engineering Fundamentals Department at Embry Riddle Aeronautical University, Daytona Beach
- Assistant/Associate Professor "Teacher-Scholars" in Multiple Departments, Cal State Los Angeles
- Research Assistant Professor with a Focus in Engineering Education Research, University of Pittsburgh, Department of Industrial Engineering
- Assistant/Associate Professor of K-12 Technology & Engineering Education, The College of New Jersey
- Director of PreK-12 Engineering Education and Outreach, Texas A&M Engineering

II. Description of the Academic Nature of the Graduate Academic Certificate Program

A. Administration and Affiliated Faculty

1. Administration

The chair of the GAC in Engineering Education is ???. Oversight of day-to-day operations of the GAC are delegated to the GAC Executive Committee.

Executive Committee

Chair of the Executive Committee: ??

Executive committee member: ??

Executive committee member; ??

Staff coordinator: the GAC will be run through the College of Engineering Dean's Office with support provided by the Research & Graduate Studies Development Coordinator.

2. Affiliated Faculty

A roster of faculty who intend to participate in the GAC is attached. Because of the number of faculty requesting participation, they have written and signed a common letter. The letter indicates each faculty member's intent and agreement

to participate in GAC functions such as teaching, advising, and administration. In the future, faculty who want to join the GAC will apply for membership to the Executive Committee of the GAC. Although the initial members of GAC all have appointments in the College of Engineering, the GAC's future members may include faculty outside of the College of Engineering affiliated graduate programs and department. These faculty would have expertise in the area of the GAC but might be housed in a department or program that does not offer a Ph.D. or might not be a member of a graduate program/group.

B. Admissions Criteria

Students interested in applying to the GAC in Engineering Education need to be enrolled in a M.S. or Ph.D. program in engineering. Students must apply to the GAC two months prior to the end of a quarter in order to enroll in the following term. We expect 10 students will request admission each year. Successful applicants will be notified prior to the end of the quarter in which they submitted their application of their acceptance to the GAC. The admissions committee will consist of the executive committee (defined above). Applicants to the GAC must complete a standard application form, and must specify their intent to gain expertise in engineering education. Students must propose a plan to complete the courses from the designated course listing and associated teaching requirements, and identify a faculty mentor with whom they will clearly define the linkage of the GAC with their academic and or professional goals. There are no additional academic criteria or prerequisites, unless otherwise stated within the course description. Potential GAC mentors include, but are not limited to, the GAC executive committee members and the affiliated faculty.

C. Certificate Requirements

1. Required Courses

Students are required to complete a minimum of 12 units selected from the groups of courses listed below.

- **ENG 390 I, II, III - The Teaching of Engineering**
(Two quarters, S/U grading only, 2 units each time)

Currently all departments in the College of Engineering have a 390 course that teaching assistants (TA) register for while serving as TA. The students in the GAC must serve as a TA a minimum of two quarters and will enroll in ENG 390 during those quarters. Each quarter, the participants will meet together for one hour weekly with the instructor, a faculty member of the GAC. Weekly reading assignments will include review topics from books focused on science and engineering education and skills necessary for effective teaching including active learning strategies. Reading assignments and discussions in seminar will guide instructor coaching and student practice, and help students understand the range of skills they need to achieve student learning outcomes in an engineering lecture, laboratory or discussion setting.

The vast majority graduate students interested in becoming professors or having a teaching component in their career already serve as a TA at least once during their studies. This requirement will provide greater structure and will enable the

graduate students to derive greater value from the teaching experience.

- **ENG 295 III - Development of Discipline-Specific Education Module**

(One quarter, letter grading only, 3 units)

We are proposing this new course to prepare graduate students to communicate their research area to a broad audience, fast track research developments into engineering curriculum, and develop lessons and activities in engineering science and design for K-12 and undergraduate learners. Lectures and associated assignments for this class will include (1) communication of engineering topics to a broad audience, (2) development and measurement of learning outcomes for engineering topics, and (3) development of an engineering lesson or activity for K-12 or undergraduate audiences. One optimal (but not required) product of this class would be an engineering education peer-reviewed paper, lesson or a conference presentation. At a minimum, the student will gain experience in translating their discipline specific research into the broader society.

- **ENG 290C II - Seminar in Engineering Education**

(One quarter, S/U grading only, 1 unit)

Students will participate in this seminar once during their doctoral studies. The seminar will consist of both campus and external speakers. The seminars will promote evidence-based, active learning strategies and practices and connect students with disciplinary peers to share ideas on learning theories and pedagogies, both seminal and emerging. This seminar, to be held weekly throughout the academic year, is intended to build a coalition of educators committed to student success who will act as change agents.

- **ENG 296 I - Engineering Education Research Methods**

(One quarter, letter grading, 4 units)

We are proposing this new course to prepare students to be able to (1) write a literature review in engineering education, (2) develop a survey, interview or focus group protocol and prepare proposals required for IRB approval of education research, (3) develop an engineering education research proposal similar to those required by federal funding agencies, and (4) designing an outcome assessment plan for an engineering course. Course topics will include design of mixed methods engineering education research; the IRB process; engineering thinking and knowing; engineering learning mechanisms and approaches; pathways into diversity and inclusiveness; and curriculum design, implementation and evaluation.

2. Other Requirements

D. Student Advising and Monitoring Progress

1. Student Advising

The Research & Graduate Studies Development Coordinator in the College of Engineering Dean's office will oversee the academic progress of the students in the program and provide advising on the GAC as needed.

2. Monitoring Student Progress

Student progress will be monitored by the Research & Graduate Studies Development Coordinator. The Executive Committee will also convene an annual meeting to review all GAC students' progress. GAC students must maintain a cumulative 3.0 GPA to meet *satisfactory academic progress*, as well as abide by the *time to degree* guidelines, which allows for 7-8 years for doctoral students to complete their studies. If students do not meet *satisfactory academic progress*, they will be provided appropriate advice for redirection and continuation of the program or will be notified of their removal from the program due to *unsatisfactory academic progress*. Upon a student's successful completion of the GAC requirements, the Research & Graduate Studies Development Coordinator. Students will receive a Certificate of a Graduate Curriculum from UC Davis.

3. Informing Students

For incoming students: Masters-level students should start taking courses that contribute to the successful completion of the GAC within their second quarter, whereas PhD-level students should start within their second or third quarter. Incoming students will be made aware of the GAC program through their respective departments or advisors and the GAC will be advertised on the College of Engineering graduate programs website. In addition, information about current GACs is available on the UC Davis website and therefore always available for any incoming student. All GAC students and potential participants will be encouraged to contact the Research & Graduate Studies Development Coordinator in the College of Engineering Dean's office for information about the program, about their progress and any other questions related to the GAC.

E. Resources

The GAC will be housed in the College of Engineering Dean's Office. Existing staff within the Dean's office will provide administrative support for record keeping (e.g., lists of current and former students and current faculty members). The Dean's Office will also provide technical support for developing and maintaining a web page for the GAC and for appropriate outreach to potential graduate students. Support for the required curriculum will also be provided as indicated in the letter of support from the dean.

- **Dean's Letter**

A letter of support from College of Engineering Dean Jennifer Curtis is attached and indicates the resources available to support the GAC.

Research & Library Committee

Report to the Faculty

AY 2016-17

Committee Members: Stavros Vougiakas, Marc Facciotti, Adam Moule, Boris Jeremic (Chair), Young Jae Lee, Jane Gu, Masa Soshi, Sabyasachi Sen, Jean VanderGheynst (*ex officio*)

The Research & Library Committee discussed the following subjects during the 2016-2017 Academic Year.

Limited Submission Proposal Reviews.

Guidelines for the Review of Limited Submission Proposals were agreed upon. Committee members will review the schedule of Limited Submissions for each academic year and rank each submission based on expertise and availability. Administrative support will compile rankings and assign reviews to committee members. Each member will be responsible for the reviews assigned to that committee member and, if they cannot serve at the time of the review, that committee member will find a substitute. Additional Limited Submission reviews for programs not on the current list will be filled as needed. Schedule for 2016-17 is in Appendix A.

Export Control

The committee discussed export control policy at three meetings during the 2016-17 academic year. Craig Allison, Director of Research Compliance presented current system-wide policies and procedures. The last section of the Data Sheet used when submitting a proposal through the Sponsored Programs Office has three questions regarding export control. A "yes" answer to any of those questions will trigger contact from the Office of Research's Research Compliance & Integrity Office. That office will help a PI determine if there are export control concerns.

Purchasing also monitors orders of equipment that might violate export controls. This is why it is important for all orders of equipment to go through purchasing. UC Irvine has good [videos](#) on export control. Copies of Craig Allison's presentation can be found in Appendix B.

Appendix A
2016-2017 Limited Submissions Assignments

Research Library Committee Review Assignments 2016-17

Appendix A

			B A E	B I M	C H E	C i v i l	C S	E C E	M A E	M S E	D O
			Stavros Vuogiokas	Marc Facciotti	Adam Moule	Boris Jeremic	Yong Jae Lee	Jane Gu, Chair	Masa Soshi	Sabyasachi Sen	Jean VanderGheynst, ex officio
Faculty Reviewer											
Number of reviews			3	4	3	4	3	5	5	5	3
Limited Submission Program	Internal Deadline	Internal Review									
NSF Major Research Instrumentation (MRI)	9/6/16	9/21/16						X			
NSF Research Traineeship (NRT) Program	9/20/16	10/5/16									X
Science & Engineering and Medical Research Programs (Keck)	10/25/16	11/9/16								X	
Rita Allen Foundation Scholars Program	10/25/16	11/9/16						X			
Outstanding New Environmental Scientist Award (ONES)	11/29/16	12/14/16							X		
NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM)	12/13/16	12/28/16								X	
Biotechnology Risk Assessment Research Grants (BRAG) Program (USDA)	12/13/16	12/28/16				X					
NSF Innovation Corps - Nodes Program (I-Corps Nodes)	1/3/17	1/18/17	X								
Grants Program (Honda Foundation)	1/17/17	2/1/17							X		
Packard Fellowship for Science & Engineering Program	1/31/17	2/15/17					X				
Scholar Awards in Complex Systems Science (McDonnell foundation)	2/7/17	2/22/17				X					
High-End Instrumentation Grant Program (S10)	2/14/17	3/1/17								X	
Shared Instrumentation Grant (SIG) Program (S10)	2/14/17	3/1/17	X								
Corporate Contributions (Lockheed Martin)	2/21/17	3/8/17							X		
Henry Dreyfus Teacher-Scholar Awards Program	3/7/17	3/22/17		X							
NIH Science Education Partnership Award (SEPA) (R25)	3/14/17	3/26/17						X			
Prof. Rahamimoff Travel Grants Program for Young Scientists	3/21/17	4/5/17							X		
Pew Scholars Program in the Biomedical Sciences	5/23/17	6/7/17		X							
BD2K Predoctoral Training in Biomedical Big Data Science (T32)	5/26/17	7/25/17			X						
NSF Research Traineeship (NRT) Program	5/30/17	9/19/17				X					
Major Research Instrumentation (MRI) Program	5/31/17	9/6/17								X	
Pew-Stewart Scholars for Cancer Research	6/2/17	6/17/17						X			
Bridges to the Baccalaureate Program (R25)	6/6/17	6/21/17		X							
Bridges to the Doctorate (R25)	6/6/17	6/21/17									X
Edward Mallinckrodt, Jr. Foundation Grant Program	6/6/17	6/21/17			X						
Institutional Research & Academic Career Development Award (IRACDA) (K12)	6/13/17	6/28/17					X				

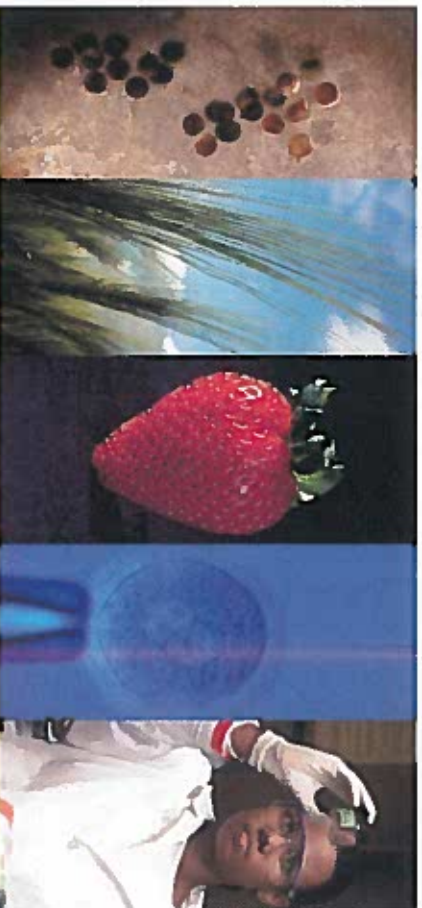
Research Library Committee Review Assignments 2016-17

Appendix A

Research Experience for Teachers (RET) in Engineering and Computer Science-Supplements and Sites	6/28/17	11/1/17					X						
Searle Scholars Program	7/11/17	7/26/17		X									
Dr. Ernest J. Ring Academic Development Grant Program						X							
Grant Supported by AngioDynamics	7/18/17	8/2/17											
Science and Technology Centers (STC) - Integrative Partnerships	7/25/17	8/9/17										X	
Faculty Grants - Course and Program Grants (Venture Well)	7/25/17	8/9/17					X						
NIOSH Centers of Excellence for Total Worker Health (U19)	8/1/17	8/16/17			X								
NSF Research Traineeship (NRT) Program	42982	42997	X										
			3	4	3	4	4	4	4	4	4	4	4

s will be determined by the LS proposals submitted. Additional proposals may be added to the list as the year proceeds.

Appendix B
Export Control Presentation



Export Control Briefing

Craig Allison, Director, Research Compliance and Integrity

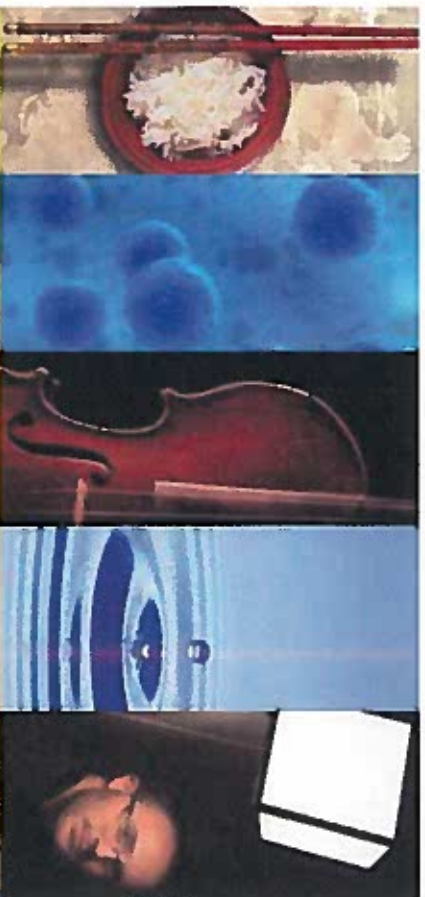
Jessica Trask, RCI Analyst

Agenda

Appendix B

Export Control Basics

- Objectives
 - To gain a basic awareness of export controls and how they apply to your responsibilities at UCD
 - To know when to contact RCI for reviews
 - Provide a specific list of Do's and Don'ts
 - Provide a hard copy of the Research Compliance Manual



Export Control Basics



Introduction to Export Controls Video

Appendix B

[http://research.uci.edu/compliance/export-controls/training/ec-university/
index.html](http://research.uci.edu/compliance/export-controls/training/ec-university/index.html)

US Export Control Regulations

Appendix B

Export Administration Regulations (**EAR**)

- "Dual use" items are controlled by the Export Administration Regulations (EAR – 19 CFR 730-774) administered by The Department of Commerce, Bureau of Industry and Security (BIS) administers the EAR



• International Traffic in Arms Regulations (**ITAR**)

- Munitions and defense services are controlled under the International Traffic in Arms Regulations (ITAR) are administered by the Department of State



• Office of Foreign Asset Control (OFAC)

- Treasury's Office of Foreign Assets Controls (OFAC) administers economic and trade sanctions
- Research in or collaborations with any of the following countries, require review from Export Control: Cuba, Iran, North Korea, Sudan, Syria



What is an “Export”?

Appendix B

- Physical Export: sending any material to foreign location (includes hand carry & electronic exports)
- Deemed Export: disclosing “controlled” technical data either written, oral, or visually in the United States to a foreign person



What is a Foreign Person?

Appendix B

Foreign Person

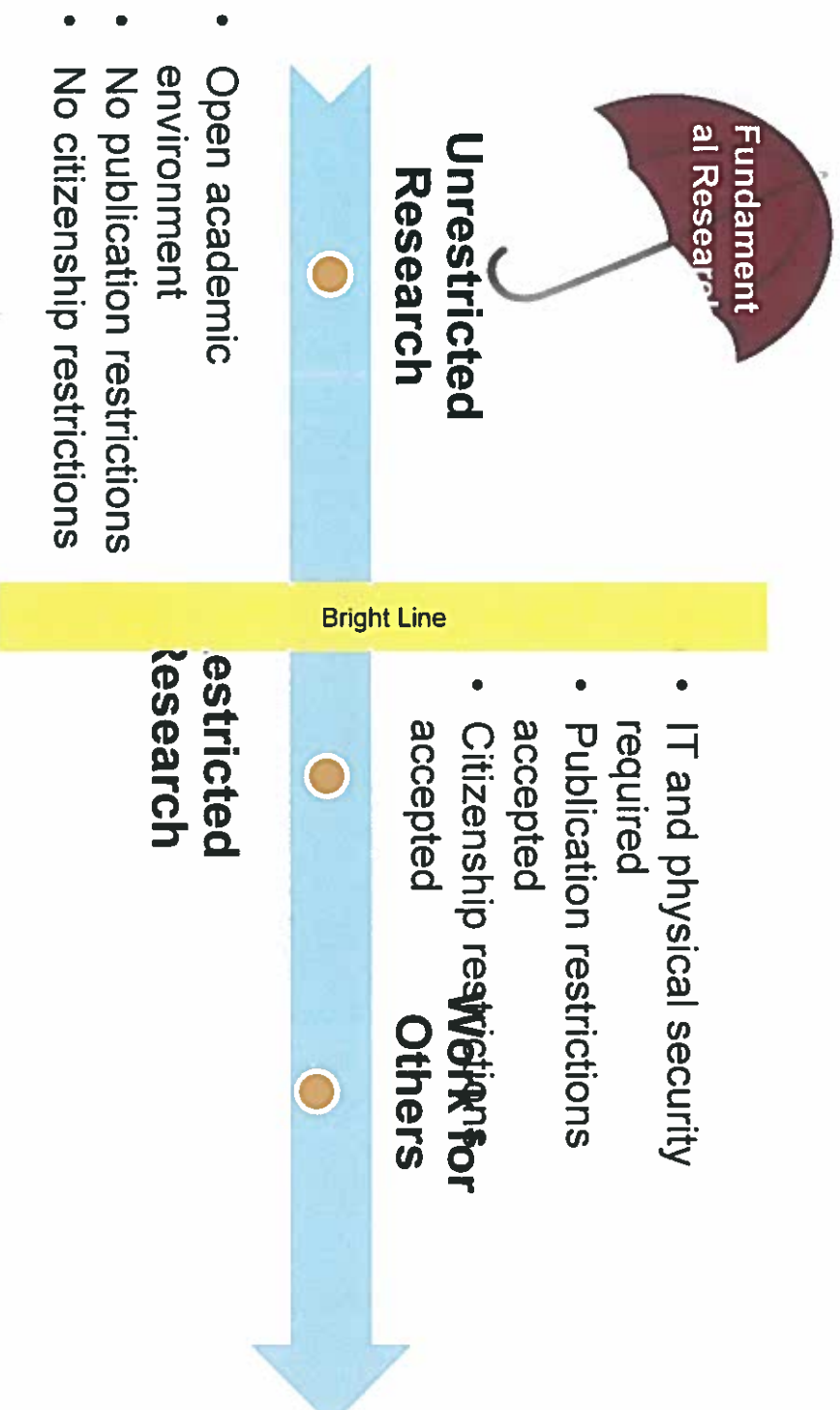
- Any person not a U.S. citizen or legal permanent resident (green card holder)
- Any person not granted political asylum
- Any U.S. Person employed or representing a foreign entity

Foreign Entity

- Any partnership or group not incorporated or organized to do business in the U.S.
- Any foreign government

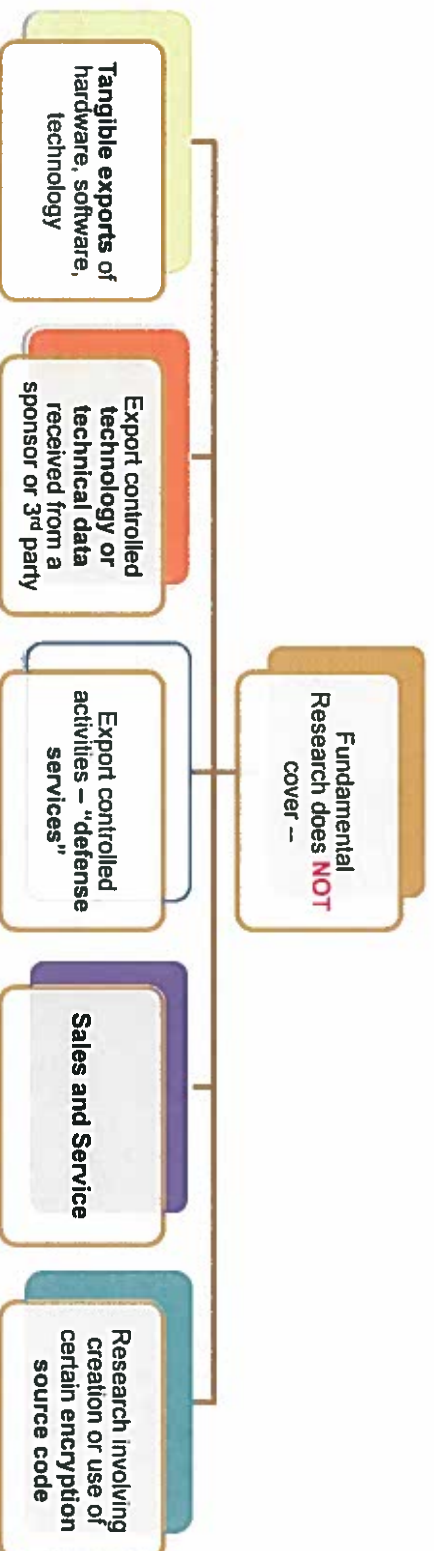
Compliance Requirements

Appendix B



Limits of the FRE

Appendix B



Transactions involving sanctioned countries, individuals and entities and restricted end-uses must be reviewed independent of fundamental research, for licensing requirements.



xerox

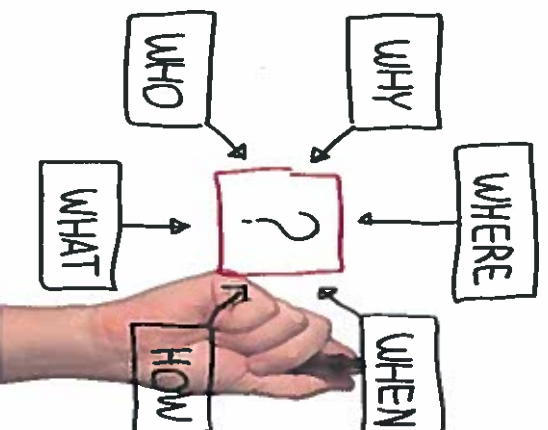
reinking

Export Control-Craig Alliso.pdf
05/08/17 11:01 AM

Export Control Factors

Appendix B

- Place- sanctions or countries requiring license for an item
- Persons- restricted person or national status of person
 - Foreign person: not a US citizen or legal permanent resident or protected person
- Item- what is it? - export classification
- End Use Prohibitions- missile tech, UAV, submarine detection



ITAR Munitions List Part 121 (Military Items)

Appendix B

- Category I: Firearms, Close Assault Weapons & Combat Shotguns
- Category II: Materials, Chemicals, Microorganisms, & Toxins
- Category III: Ammunition/Ordnance
- Category IV: Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs & Mines
- Category V: Explosives and Energetic Materials, Propellants, Incendiary Agents & Their Constituents
- Category VI: Vessels of War & Special Naval Equipment
- Category VII: Tanks & Military Vehicles
- Category VIII: Aircraft & Associated Equipment
- Category IX: Military Training Equipment
- Category X: Protective Personnel Equipment
- Category XI: Military Electronics
- Category XII: Fire Control, Range Finder, Optical & Guidance and Control Equipment
- Category XIII: Auxiliary Military Equipment
- Category XIV: Toxicological Agents, Including Chemical Agents, Biological Agents, & Associated Equipment
- Category XV: Spacecraft Systems & Associated Equipment
- Category XVI: Nuclear Weapons, Design & Testing Related Items
- Category XVII: Classified Articles, Technical Data & Defense Services Not Otherwise Enumerated
- Category XVIII: Directed Energy Weapons
- Category XX: Submersible Vessels, Oceanographic & Associated Equipment

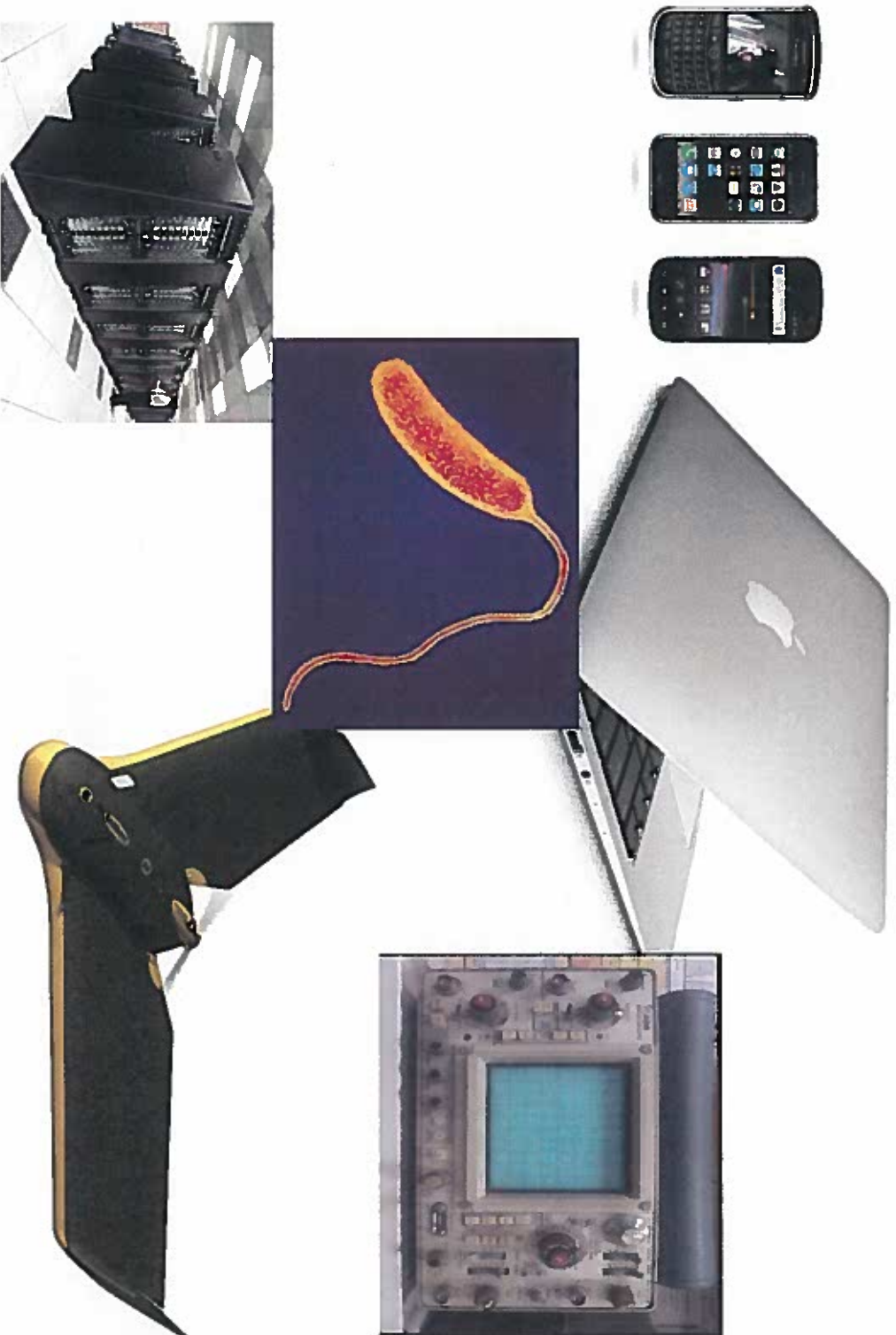
ITAR Munitions List Part 121 (Military Items)

- Category I: Firearms, Close Assault Weapons & Combat Shotguns
- Category II: Materials, Chemicals, Microorganisms, & Toxins
- Category III: Ammunition/Ordnance
- Category IV: Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs & Mines
- Category V: Explosives and Energetic Materials, Propellants, Incendiary Agents & Their Constituents
- Category VI: Vessels of War & Special Naval Equipment
- Category VII: Tanks & Military Vehicles
- Category VIII: Aircraft & Associated Equipment
- Category IX: Military Training Equipment
- Category X: Protective Personnel Equipment
- Category XI: Military Electronics
- Category XII: Fire Control, Range Finder, Optical & Guidance and Control Equipment
- Category XIII: Auxiliary Military Equipment
- Category XIV: Toxicological Agents, Including Chemical Agents, Biological Agents, & Associated Equipment
- Category XV: Spacecraft Systems & Associated Equipment
- Category XVI: Nuclear Weapons, Design & Testing Related Items
- Category XVII: Classified Articles, Technical Data & Defense Services Not Otherwise Enumerated
- Category XVIII: Directed Energy Weapons
- Category XX: Submersible Vessels, Oceanographic & Associated Equipment

Export Administration Regulations (EAR)

Appendix B

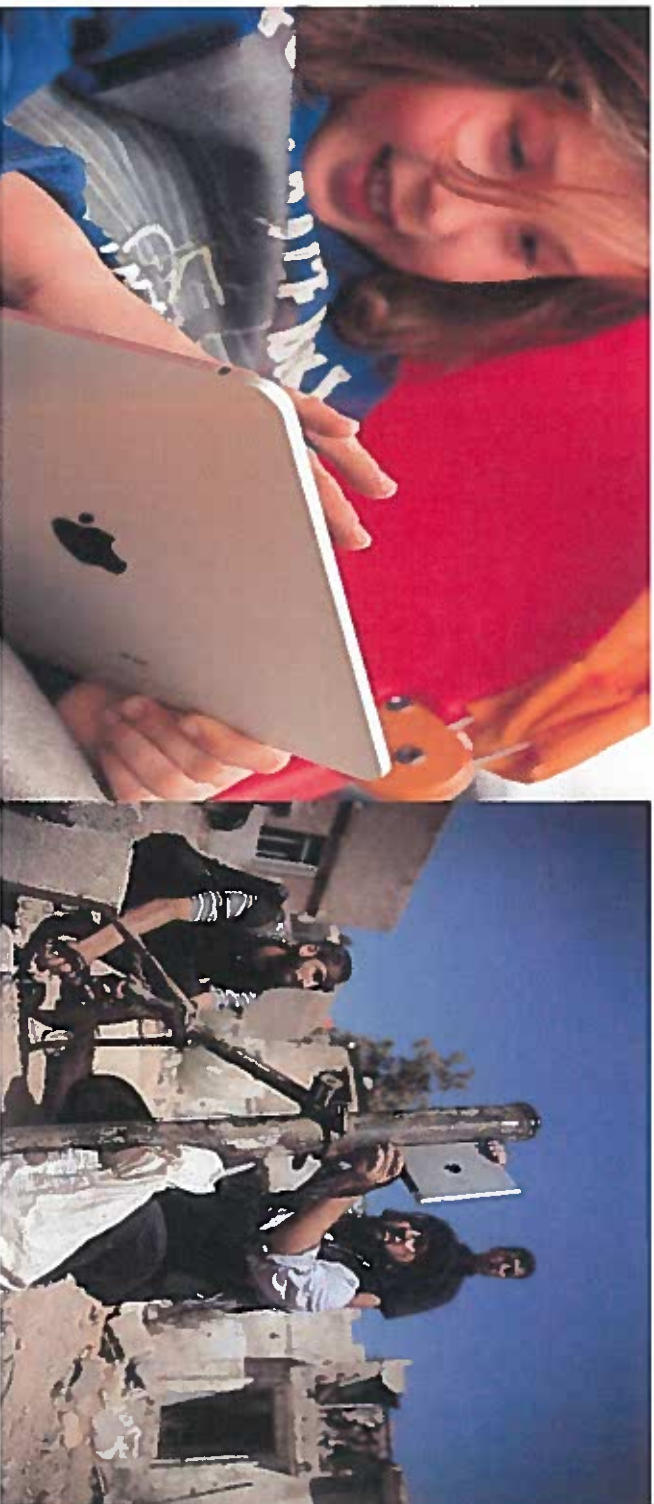
“Dual Use”



What is “Dual Use”?

Appendix B

Technology and items having both potential
commercial *and* military applications

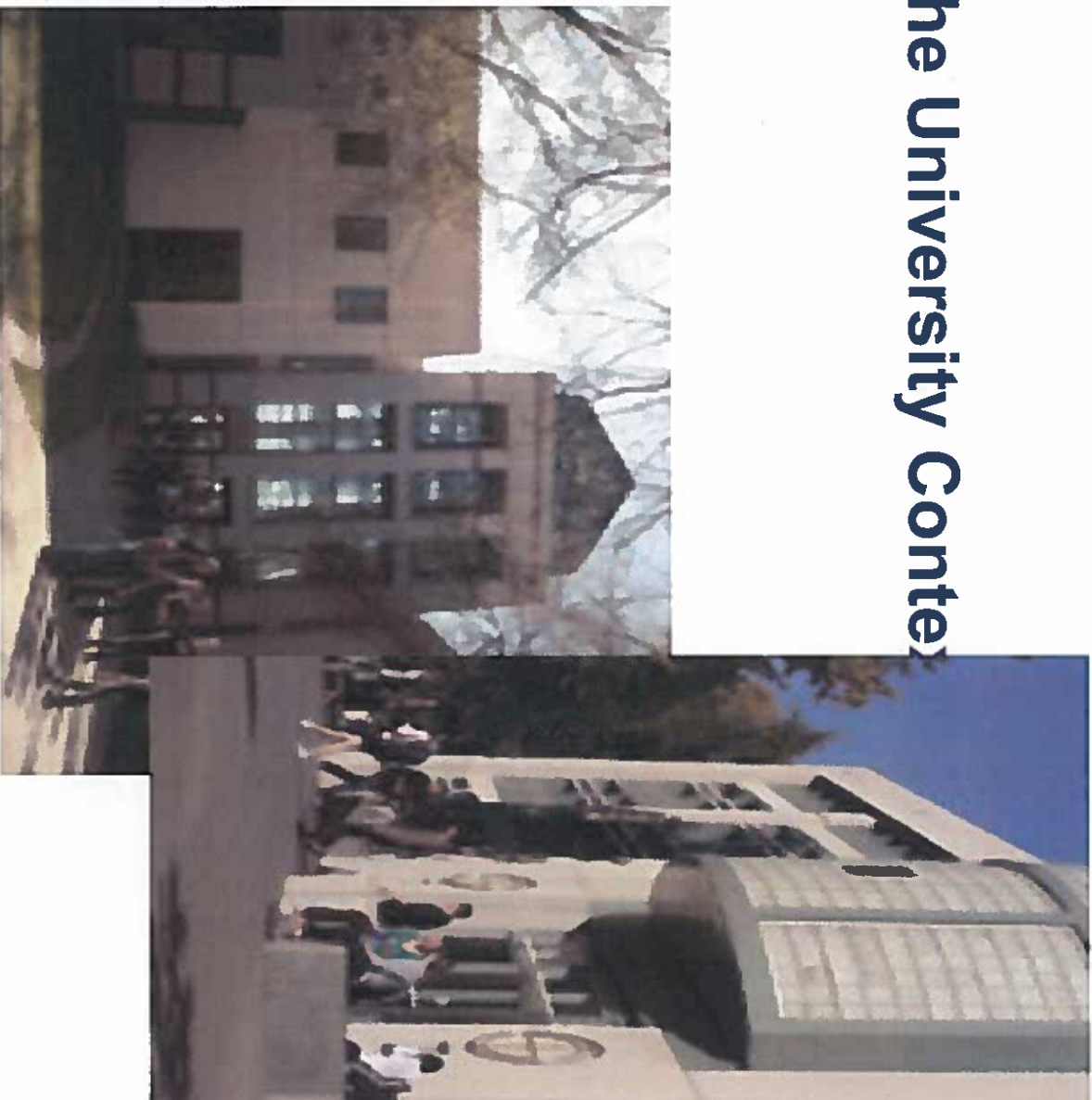


EAR Commerce Control List (CCL) Part 774

Appendix B

- Category 0: Nuclear Materials, Facilities & Equipment (& Miscellaneous Items)
- Category 1: Materials, Chemicals, Microorganisms, & Toxins
- Category 2: Materials Processing
- Category 3: Electronics Design, Development & Production
- Category 4: Computers
- Category 5: Part 1: Telecommunications and Part 2: Information Security
- Category 6: Sensors & Lasers
- Category 7: Navigation & Avionics
- Category 8: Marine
- Category 9: Propulsion Systems, Space Vehicles & Related Equipment

The University Center



Export Controls for UC Davis Research Activities

Appendix B

Typical scenarios at UCD that can involve/trigger export controls include:

- Admission of international students and visitors on a visa
- Proprietary industry-sponsored research
- Foreign travel
- Funding from the DoD
- Shipments of equipment outside the U.S. for repair
- International shipments of research equipment, samples, technology or other data
- International collaborations
- Equipment and materials purchase (camera experience)
- Sales and services agreements
- Nondisclosure Agreements (NDAs)
- Publication or foreign national restrictions

Example: ITAR-Controlled Camera Purchase

Appendix B

IMPORTANT NOTES

1. [REDACTED] Inc. is the exclusive importer and distributor in North America for products and services of [REDACTED]. [REDACTED] is a [REDACTED]-based manufacturer of infrared detectors, cameras and technologies and holds export licenses to most countries in the world, including the USA, Canada and many others. Once products are in the US, they become subject to the US's stringent ITAR regulations. Similar rules may apply in other countries. Please seek legal counsel to understand the regulations in your particular country.
2. Prices quoted are in US dollars and will be valid for 30 days as of today; prices will be subject to change thereafter.
3. Payment is due and payable in full thirty (30) days from date of invoice. Interest at the rate of 1% per month will be assessed on any balance unpaid after 30 days.

Red Flags – a.k.a. When to Contact RCI

Appendix B

Does the research involve:



- A foreign military or space agency?
- Defense contractors (Boeing, Lockheed Martin, Northrop Grumman, etc.)
- International travel
- Correspondence or paperwork marked:
 - ✓ This is export controlled, do not distribute, no export, no foreign national access
- Another party's proprietary information
- Shipping research materials to a foreign country?
- Collaborating with foreign colleagues in foreign countries?
- Acquisition of controlled equipment or items to perform research
- Sponsor agreement includes publication or distribution restrictions
- Working with a country subject to US sanctions? Cuba, Iran, North Korea, Syria and Sudan

OFAC Video

Appendix B

<http://research.uci.edu/compliance/export-controls/training/ec-ofac/index.html>

Why Does This Matter?

Appendix B

- Substantial penalties and possible imprisonment for violations
- Identify export licensing requirement up front to avoid delays and complications
 - Licensing can take 7 weeks to a year to obtain if granted at all
- May impact participation by foreign nationals, faculty, staff & visitors or dictate the timeline for foreign collaborations and international shipments
- Ensure that necessary controls are in place prior to obtaining the export license (Technology Control Plans)

Some Key Do's and Don'ts

Appendix B

DON'T:

- Sign confidentiality or non-disclosure agreements without consulting with your export control officer
- Accept contract, grant, or agreement terms that include publication review, publication restrictions, or restrictions on the participation of foreign nationals
- Provide citizenship, nationality, or visa status information to sponsors or other third parties or include such information in proposals. It is a violation of INS regulations, the federal Privacy Act, and UC policy to do so
- Bring onto campus any items marked Export Controlled. Consult with your Export Control officer prior to bringing anything onto campus marked 'Confidential and subject to US Export Control Laws,' 'FOUO' or other similar terms
- Sign the federal Department of Defense form DD2345 ('Military Critical Technical Data Agreement') without consulting with your Export Control officer
- Assume that someone else has already checked your contract, PO, equipment, or shipment for its export status. It is ultimately your responsibility to know what you have and where it is going.

Some Key Do's and Don'ts

Appendix B

DO:

- Accurately complete the Sponsored Programs Data Sheet Export Control section

Export Control – with respect to this project do you:	
• anticipate any shipment/transmission (e.g. via email) of research materials, equipment, or data outside the U.S.?	<input type="radio"/> Yes <input type="radio"/> No
• anticipate any travel outside the U.S. with any research materials, equipment (including laptops), or data by anyone on this project?	<input type="radio"/> Yes <input type="radio"/> No
• plan to conduct proprietary research with a potential military application <u>and</u> will your research team include non-U.S. nationals?	<input type="radio"/> Yes <input type="radio"/> No
<i>Note: If the response is "Yes" to any question, the Research Compliance & Integrity unit will contact you for further information.</i>	

- Identify projects with 'deliverables' to foreign partners and let your department and export control officer know at the proposal and award stage
- Do publish research results in a timely manner (early and often)
- Do ask Procurement and/or Materials Management to tell you when you are ordering technology/equipment that is marked 'export controlled,' 'ITAR controlled,' or contains an Export Control Classification Number, 'ECCN'
- Do contact your Biosafety officer if you intend to ship biological items or toxins overseas
- Do be aware that there are special restrictions on travel and other activities related to certain countries, especially Iran, Syria, Cuba, North Korea, Libya, and Sudan

International Shipment Review

Appendix B

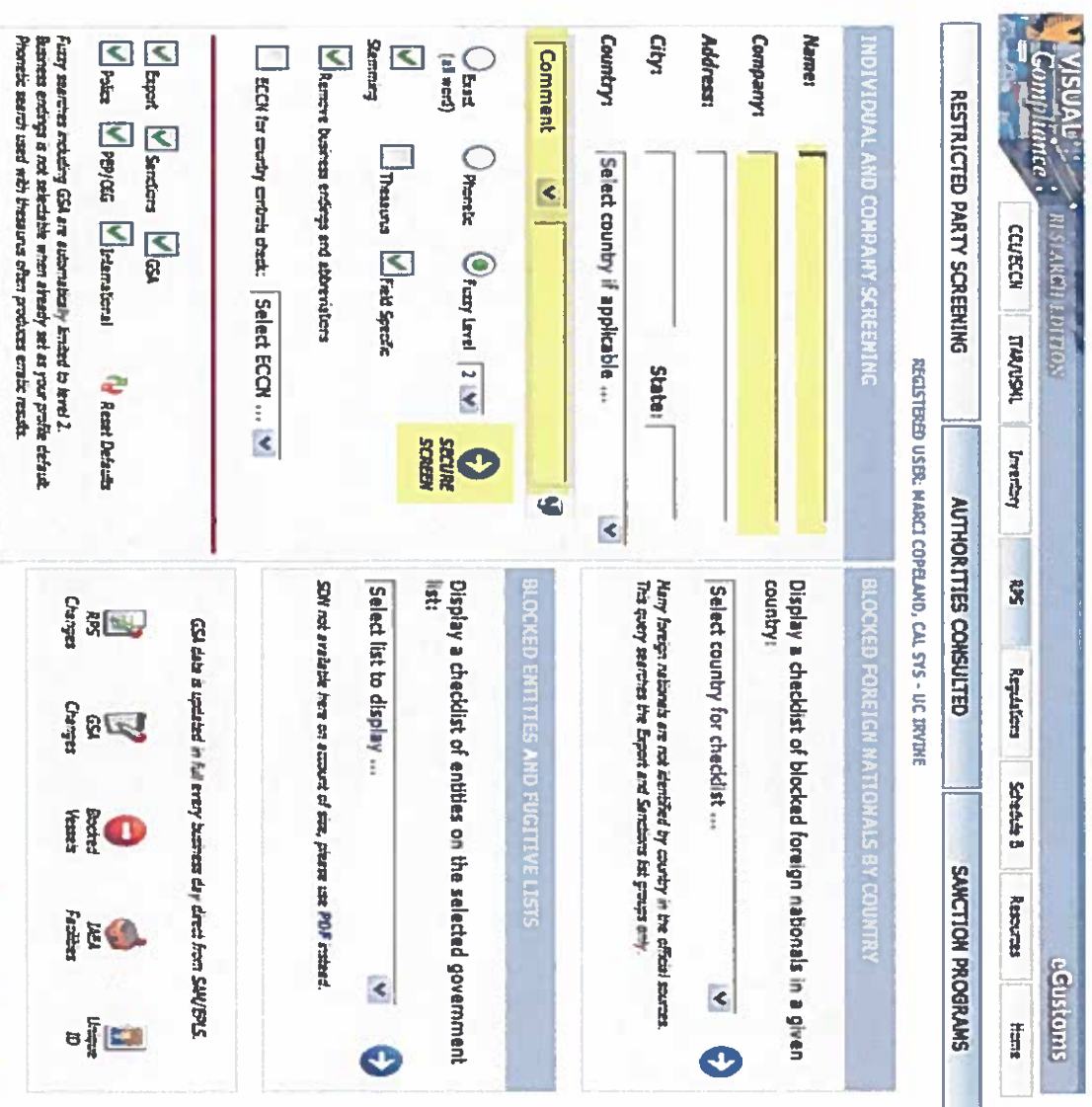
- Restricted Party Screening
- Sanctioned Country Screening-OFAC
- Export Jurisdiction, Classification or licensing
 - ITAR, EAR, NRC & others
 - Import licensing may be required in receiving country
- Foreign Trade Regulations AES EEI
 - Export declaration for \$2,500 or needs an export license
 - May be filed through University-approved freight forwarder with power of attorney to act on behalf of UC



Build shipping, import tax and customs brokerage costs into budgets

Visual Compliance Restricted Party Screening Tool

Appendix B



Visual Compliance RESEARCH EDITION eCustoms

CC/ECN TAYNSL Inventory RPS Regulations Schedule B Resources Home

RESTRICTED PARTY SCREENING AUTHORITIES CONSULTED SANCTION PROGRAMS

REGISTERED USER: MARCI COPELAND, CAL SYS - UIC INVTHE

INDIVIDUAL AND COMPANY SCREENING

Name:

Company:

Address:

City: State:

Country: Select country if applicable ...

Comment:

☐ Exact (all words)
 ☐ Phonetic
 ☒ Fuzzy Level 2

☒ Scanning
 ☐ Thesaurus
 ☒ Field Specific

☒ Remove business endings and abbreviations

☐ ECCN for country controls check: Select ECCN ...

☒ Export
 ☒ Sanctions
 ☒ GSA

☒ Police
 ☒ FBI/DOJ
 ☒ International
 ☒ Reset Defaults

Fuzzy matches including GSA are automatically limited to level 2. Business endings are not selected when already set as your profile default. Phonetic search used with thesaurus often produces erratic results.

BLOCKED FOREIGN NATIONALS BY COUNTRY

Display a checklist of blocked foreign nationals in a given country:

Select country for checklist ...

Many foreign nationals are not identified by country in the official sources. This query searches the Export and Sanctions list groups only.

BLOCKED ENTITIES AND FUGITIVE LISTS

Display a checklist of entities on the selected government list:

Select list to display ...

SNV not available here on account of size, please use PDF instead.

GSA data is updated in full every business day direct from GSA/BSLS.

☒ RPS Changes
 ☒ GSA Changes
 ☒ Blocked Vessels
 ☒ LISA Feedbacks
 ☒ Unique ID

Examples of Academic Restricted Entities

Appendix B

This list is not comprehensive

- BEIJING UNIVERSITY OF AERONAUTICS AND ASTRONAUTICS (BUAA) AKA BEIHANG UNIVERSITY- China
- NORTHWEST POLYTECHNICAL UNIVERSITY-Xian, China
- National University of Defense Technology (NUDT)- China
- SICHUAN UNIVERSITY- Chengdu, China
- UNIVERSITY OF ELECTRONIC SCIENCE AND TECHNOLOGY OF CHINA (UESTC) - Chengdu, China
- MALEK ASHTAR UNIVERSITY OF TECHNOLOGY- Tehran, Iran
- BAQIYATTALLAH UNIVERSITY OF MEDICAL SCIENCES – Tehran, Iran
- IMAM HOSSEIN UNIVERSITY- Tehran, Iran
- BEN GURION UNIVERSITY (BGU)- Israel

- If the visual compliance screening results in a hit, please email to ORRCI@ad3.ucdavis.edu for review.
- Export Control will review and advise if an export license may be required depending on the entity and the interactions they will be having with UC Davis.



**Research Compliance and Integrity
Office of Research**

Tel: (530) 754-0642

<http://research.ucdavis.edu/compliance>

1850 Research Park Drive, Suite 300

Davis, CA 95691

Committee Composition:

1 Representative from each Department, Executive Assistant Dean for College of Engineering, Director of IT Services

Committee Meetings:

Monthly throughout the year

Major Accomplishments

1. Kemper rewire project over 90% complete. Only first floor, west wing to be completed. Waiting for CNM2 (clean room) project to be ready.
2. Received campus funding to expand and update the virtual desktop computer lab for instruction. Plan to offer day time remote access starting in the Fall quarter.
3. Migrated COE Private Cloud resources to IET Private Cloud service. This required working with IET to create lower cost storage and virtualization offerings.
4. Established a new “try before you buy” program for HPC1. Expanded HPC1 with many new computer nodes and GPU capabilities.
5. Updated the security program and improved security; 1. Refined monthly security reports and expanded distribution to all faculty and staff, 2. Actively scanned the college network to find vulnerable systems and worked with faculty to update/remove them, 3. Implemented a computer inventory pilot program in CS.
6. Removed over 50% of all private routers and wireless access points from the CoE network. Expanded wireless coverage and other service offerings to reduce the need for these devices.
7. Completed trial security program (SECEON) to enhance threat detection. Improvements in existing tools made SECEON unnecessary.
8. Initiated a collaborative project (AggieDesktop) with other campus units to improve the way we build and support computer desktops. The project will create an “App Store” like experience with campus-licensed software, reduce the administrative burden to maintain computers, and reduce the amount of time to setup new computers. More on the web at aggiedesktop.ucdavis.edu.
9. Created a formal proposal to build a new Student Service Desk which would free up time of departmental IT staff so they can provide more research support.
10. After the SmartSite and Banner outages, the committee worked with IT staff and MSOs to identify the critical systems the college depends upon. With the help of the service owners we are working to identify how best to handle outages and to improve the uptime of their offerings.

Student Recruitment, Development and Welfare Committee Summary Report 2016-2017

Julia Fan, Biological & Agricultural Engineering
Marc Facciotti, Biomedical Engineering
Jason White, Chemical Engineering, CHAIR
Dawn Cheng, Civil & Environmental Engineering
Norman Matloff, Computer Science
Josh Hihath, Electrical & Computer Engineering
Susan Gentry, Materials Science
Barbara Linke, Mechanical Engineering
Jean VanderGheynst, *Ex Officio*, Assoc. Dean Graduate Education
Jim Schaaf, *Ex Officio*, Assoc. Dean Undergraduate Studies
David Spight, *Ex Officio*, Director of Undergraduate Affairs
Tanya Whitlow, *Ex Officio*, Director of LEADR

The SRDW Committee met twice and conducted the following business:

May 2017

- A meeting will be held to select the June 2017 student commencement speaker.

April 2017

- A meeting was held to select the MS Ghausi College medalist after review of applications: Emmet Francis, Biomedical Engineering.