College of Science and Engineering Technology (COSET)

2020 STATE OF THE COLLEGE ADDRESS
Overview

Dean’s Office Introductions
Departmental New Faculty and Staff Introductions
Presentation of College Awards
Recognition of Tenure and Promotion
Year in Review
  ◦ Enrollment and Teaching
  ◦ Research and Scholarship
  ◦ Service
Review of Goals for 2019-2020
Goals for 2020-2021
Office of the Dean

Dean-Dr. John Pascarella

Associate Dean of Curriculum and Assessment
  ◦ Dr. Marcus Gillespie (will retire next year-Dr. Melinda Holt will assume these duties summer of 2021)

Associate Dean of Research and Graduate Programs
  ◦ Dr. Anne Gaillard

Assistant to the Dean-Angie Burgess

Administrative Coordinator-DeLynn Say

Administrative Associate-Shellie Armstrong

Administrative Assistant- Susan Floyd
New Faculty and Staff joining COSET since August 2019

10 new full-time faculty (4 TT, 5 Visiting Assistant Professors, 1 Lecturer)
1 new staff member
Agricultural Sciences

Chair: Doug Ullrich

No new hires
Biological Sciences
Chair: Aaron Lynne (New), Dr. Tami Cook returns to faculty after 3 years service

Administrative Associate II: Kristin Skillern
Chemistry
Chair: Donovan Haines

Visiting Assistant Professor: Dr. Harshani Jayabahu Arachchilage
Computer Science

Chair: Bing Zhou (New); Dr. Peter Cooper returns to faculty after 18 years service as chair

Tenure Track Faculty:
Dr. Amar Adnan Rasheed

Visiting Assistant Professor: Dr. Mohamad Baza
Engineering Technology
Chair: Faruk Yildiz

Tenure Track Faculty:

Mechanical Engineering Technology: Dr. Sumith Daisy Yesudasan
Dr. Shah Alam (Fred Pirkle Endowed)
Geography and Geology
Chair: John (Pat) Harris (New); Dr. Brian Cooper returns to faculty after 10 years service
No new hires
Mathematics and Statistics
Chair: Melinda Holt

Tenure-Track Assistant Professor: Dr. Naomi Krawzik
Visiting Assistant Professor: Dr. Ellen Weld
Dr. Chi Phan
Dr. Phuong Nguyen
Physics and Astronomy
Chair: Joel Walker
Astronomy/Physics Lecturer: Dr. Holly Sheets
Please join me in congratulating the winners:

Graduate Student Excellence in Research – Mr. Hasika Wickrama Senevirathna (Mathematics and Statistics)

Student Excellence in Teaching – no award given this year

Adjunct Faculty Excellence in Teaching – Ms. Volha Minich (Biological Sciences)

Faculty Excellence in Research – Dr. Juan Daza (Biological Sciences)

Faculty Excellence in Teaching – Dr. Ananda Manage (Statistics)

Faculty Excellence in Service – Dr. David Thompson (Chemistry)
Tenure and Promotion to Associate Professor
  ◦ Shyam Nair (Agricultural Sciences)
  ◦ Ram Kafle (Mathematics and Statistics)
  ◦ James Dent (Physics and Astronomy)

Tenure and Promotion to Professor
  ◦ Junkun Ma (Engineering Technology)

Tenure (rank of Professor)
  ◦ Recayi Pecen (Engineering Technology)

Faculty Tenure and Promotion
Promotion to Professor

- Sibyl Bucheli (Biological Sciences)
- Madhusudan Choudhary (Biological Sciences)
- Aaron Lynne (Biological Sciences)
- Donovan Haines (Chemistry)
- Faruk Yildiz (Engineering Technology)
- John Alford (Mathematics and Statistics)
- Scott Miller (Physics and Astronomy)
Emeritus Professor
Dr. Mark Klespis, Mathematics Education
Distinguished Professor

Dr. Jerry Cook (Biological Sciences)
Retirements

Max Coleman (Mathematics)
Mark Klespis (Mathematics)
Melanie Rose (Chemistry)

Thank you for your years of service to SHSU!
We wish you the best in your retirement!
In Memorium

John Wilson (Physics)
Funded Budget Initiatives FY21

New Funding: $150,000
  ◦ Cohort #3 of 5 additional Doctoral Students in PhD program

Funded HEF: ~$437,000 (pending confirmation)
  ◦ Start-up for new ETEC Faculty: $50,000
  ◦ $50,000 for Renovation of Art building C for Engineering Technology
  ◦ $150,000 for Equipment for Engineering Technology Labs
  ◦ $20,000 for Computer Science Evidence Room Renovation
  ◦ $66,335 for new Observatory Building for Astronomy
  ◦ Chemistry Teaching Equipment: $52,400
  ◦ Agricultural Engineering Technology Teaching Equipment: $23,157
  ◦ Biological Sciences Teaching Equipment: $4122
  ◦ Environmental and Geosciences Teaching Equipment: $5400
College Lab and Course Fee, Differential Tuition for ETEC

Non-majors lab fee doubled from $8 to $16, estimated at $134,430 (about twice what was received last year). Fees used to purchase consumable materials and supplies.

Majors Lab Improvement Fee is $50/semester: estimated at $290,000

Majors lab fees were used in FY20 to order two new vans for field trips ($75,000), to assist with renovation of ART A and WASH for use by ETEC for labs in Mechanical Engineering Technology, Safety Management, and Construction Management. Remainder was directed to departments for use in lab support. In FY21, Majors Lab fees can also be used to cover lab assistant student salaries.

Differential tuition for ETEC: Extra $4 per credit hour for FY21 and $8 for FY22. No additional funds come to COSET from this fee though.
Current and Future Budget Cuts

FY21: -$400,000
◦ Gave up two vacant positions (TT in CS and Lecturer in Math); salary savings from faculty resignation and retirement, moved 3 grad students to DLF funds, reduced summer, adjunct, overload, and instructional reserve funds and O&M in deans office, and reduced departmental travel funds by 15% and departmental O&M by 5%

FY22: estimated at -$476,772; could be less or more depending on enrollment, state cuts, and federal assistance
◦ Chairs have been asked to work with departments to propose savings including potential reduction in force of NTT faculty and staff along with O&M and travel cuts and reallocation of revenue funds. Any retirements, resignations and non-reappointments of T/TT faculty are also possible cuts. Consider phasing out or consolidating minors and degree programs with low enrollment and/or lack of flexibility.
Enrollment and Credit Hours

UNIVERSITY ENROLLMENT IS FLAT (+0.54% HEAD COUNT)

COSET ENROLLMENT IS FLAT UNDERGRAD, UP GRAD BY 10% (TOTAL IS +0.08%)
Undergraduates in COSET
Data (8/11/2020)-compared to 2019 and 2018  3526/3530/3475, flat enrollment
2nd Largest College by Majors (down 45 students to CJ), Most Credit Hours by College Majors!

<table>
<thead>
<tr>
<th>Major</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Science</td>
<td>554/625/557</td>
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<tr>
<td>Biomedical Sciences</td>
<td>447/433/307</td>
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<tr>
<td>Biology</td>
<td>379/385/447</td>
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<tr>
<td>Forensic Chemistry</td>
<td>279/340/303</td>
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<tr>
<td>Construction Management</td>
<td>282/263/271</td>
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<tr>
<td>Computing Science</td>
<td>223/257/247</td>
<td></td>
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</tr>
<tr>
<td>Agricultural Business</td>
<td>136/158/182</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering Technology*</td>
<td>116/119/105</td>
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<tr>
<td>Mathematics</td>
<td>112/130/150</td>
<td></td>
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<tr>
<td>Software Engineering</td>
<td>111/113/89</td>
<td></td>
<td></td>
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<tr>
<td>Agricultural Eng. Tech</td>
<td>97/119/108</td>
<td></td>
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<tr>
<td>Interdisciplinary Ag</td>
<td>95/85/85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applied Arts and Sciences</td>
<td>84/104/118</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elec/Computer Eng. Tech</td>
<td>82/91/92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemistry**</td>
<td>78/77/102</td>
<td></td>
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<tr>
<td>Environmental Science</td>
<td>69/41/1</td>
<td></td>
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<tr>
<td>Cybersecurity</td>
<td>61/45/20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geology</td>
<td>59/57/55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering Design Technology*</td>
<td>58/48/41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant and Soil Science</td>
<td>51/48/43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physics***</td>
<td>40/39/45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geography</td>
<td>39/35/43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural Communication</td>
<td>30/37/37</td>
<td></td>
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<tr>
<td>General Core</td>
<td>23/4/?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composite Science</td>
<td>20/17/3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering Tech (new)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Includes UT Tyler Engineering Transfer Students

** Includes Chemical Engineering Transfer. ***Includes Physics Pre-Engineering
Graduate Students in COSET

Data as of 8/11/2020, compared to 2019 and 2018
Up 10% compared to 2019

<table>
<thead>
<tr>
<th>Program</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital and Cyber Forensic Science</td>
<td>12/4/6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masters</td>
<td>245/225/223</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>43/35/30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sustainable Agriculture</td>
<td>16/22/32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td>36/30/29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td>10/9/9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computing and Information Science</td>
<td>16/13/16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital Forensics</td>
<td>22/20/19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Assurance and Cybersecurity</td>
<td>37/37/33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geographic Information Systems</td>
<td>31/22/19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics (MA, MS)</td>
<td>15/20/20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statistics</td>
<td>15/13/16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Certificate</td>
<td>13/10/19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyber Security</td>
<td>3/4/10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Assurance</td>
<td>0/1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital Investigation</td>
<td>5/4/5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geographic Information Systems</td>
<td>5/1/2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## COSET Graduates (AY20/AY19)

<table>
<thead>
<tr>
<th></th>
<th>Fall 2019/Fall 2018</th>
<th>Spring 2020/Spring 2019</th>
<th>Summer 2020/Summer 2019</th>
<th>Total AY20/AY19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>217/219</td>
<td>327/289</td>
<td>123/116</td>
<td>667/624</td>
</tr>
<tr>
<td>Graduate</td>
<td>29/22</td>
<td>56/55</td>
<td>18/15</td>
<td>103/92</td>
</tr>
<tr>
<td>Total</td>
<td>246/242</td>
<td>383/344</td>
<td>141/131</td>
<td>770/716</td>
</tr>
</tbody>
</table>

Total graduates up 7.5% over previous year.
Undergraduates up 6.8%
Graduates up 12%
Teaching and Curriculum

Curriculum and Degree Programs
• BS in Mechanical Engineering Technology starts Fall 2020
• Advising and Assessment of Environmental Science moves from Dean’s Office to Department of Environmental and Geosciences and has new concentration in Water Resources
• New Departmental Names
  • School of Agricultural Sciences to reflect size and complexity and national trends
  • Geography and Geology is now Environmental and Geosciences
  • Physics is now Physics and Astronomy
Curriculum -continued

• New Program Names
  • Design & Development is now Engineering Design Technology (BS)
  • Digital and Cyber Forensic Engineering Technology is now Cybersecurity (BS)
  • Computer Software Engineering Technology is now Software Engineering (BS)
  • Information Assurance and Security is now Information Assurance and Cybersecurity (MS)
Pandemic Response

Shift to remote teaching in Spring and Summer 2020

Development of Hybrid Blended Model for Fall 2020
  ◦ Weekly contact mandate limits model type adoption

New thinking of how to teach both lectures and labs
  ◦ Recorded Lectures and Labs
  ◦ Synchronous Lectures and Labs
  ◦ Virtual Labs, Simulations, Group Projects
  ◦ Technology and Access
  ◦ Zoom!
Research and Scholarship
### External Funding (7/1/19-7/1/20)

<table>
<thead>
<tr>
<th>Department</th>
<th># New Apps</th>
<th>$ New Apps</th>
<th># Grants Awarded</th>
<th>$ New Awards</th>
<th># Active Awards</th>
<th>$ spent active grants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Sciences</td>
<td>2</td>
<td>$14,566</td>
<td>1</td>
<td>$277,424</td>
<td>3</td>
<td>$48,259</td>
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<tr>
<td>Biological Sciences</td>
<td>17</td>
<td>$2,367,306</td>
<td>5</td>
<td>$102,310</td>
<td>9</td>
<td>$93,614</td>
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<tr>
<td>Chemistry</td>
<td>3</td>
<td>$504,813</td>
<td>0</td>
<td>$0</td>
<td>3</td>
<td>$83,042</td>
</tr>
<tr>
<td>Computer Science</td>
<td>9</td>
<td>$4,007,344</td>
<td>0</td>
<td>$0</td>
<td>1</td>
<td>$9,720</td>
</tr>
<tr>
<td>Engineering Technology</td>
<td>5</td>
<td>$588,430</td>
<td>0</td>
<td>$0</td>
<td>0</td>
<td>$0</td>
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<tr>
<td>Geography/Geology</td>
<td>0</td>
<td>$0</td>
<td>1</td>
<td>$384,205</td>
<td>0</td>
<td>$0</td>
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<tr>
<td>Math and Statistics</td>
<td>3</td>
<td>$2,253,507</td>
<td>2</td>
<td>$220,365</td>
<td>4</td>
<td>$200,877</td>
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<tr>
<td>Physics</td>
<td>0</td>
<td>$0</td>
<td>0</td>
<td>$0</td>
<td>1</td>
<td>$11,029</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>38</td>
<td>$9,735,966</td>
<td>9</td>
<td>$979,304</td>
<td>21</td>
<td>$446,541</td>
</tr>
<tr>
<td><strong>Last Year</strong></td>
<td>51</td>
<td>$9,740,701</td>
<td>16</td>
<td>$2,181,455</td>
<td>41</td>
<td>$1,095,713</td>
</tr>
</tbody>
</table>

Submissions similar to 19, but awards and expenditures down 50% from 2019
SERVICE
## Gifts to COSET (7/1/19-6/30/20) compared to last year

$911,242/$6,391,313

<table>
<thead>
<tr>
<th>Major</th>
<th>2019-20</th>
<th>2020-21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Sciences</td>
<td>$780,454</td>
<td>$556,255</td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>$41,677</td>
<td>$53,307</td>
</tr>
<tr>
<td>Excluding microscope donation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td>$4,143</td>
<td>$7,177</td>
</tr>
<tr>
<td>Computer Sciences</td>
<td>$3,665</td>
<td>$4,083</td>
</tr>
<tr>
<td>Engineering Technology</td>
<td>$4,351</td>
<td>$5,481,254</td>
</tr>
<tr>
<td>Geography and Geology</td>
<td>$30,724</td>
<td>$23,495</td>
</tr>
<tr>
<td>Mathematics and Statistics</td>
<td>$9,079</td>
<td>$12,618</td>
</tr>
<tr>
<td>Physics</td>
<td>$4,380</td>
<td>$6,359</td>
</tr>
<tr>
<td>College</td>
<td>$32,770</td>
<td>$30,631</td>
</tr>
</tbody>
</table>

Major decline was due to payoff of Fred Pirkle and Quanta Endowment Gifts
Equipment and Infrastructure
Improvements/equipment

LDB basement waterproofing completed prior to repurposing to house Department of Kinesiology from College of Health Sciences-2 flex research labs available in this area for COSET use with externally funded research

Art Buildings A and WASH updated with new ceiling tiles, locks, lighting, paint and some walls removed; new equipment and new/used furniture installed

- Art A is now ETEC Annex A-houses a virtual reality lab, safety lab, and construction materials lab
- WASH is now ETEC Annex C-houses computer CAD area, mechanical engineering labs, and faculty offices
- ART C is now ETEC Annex B-needs extensive renovation for future use

Added additional equipment for SEM in Biological Sciences
Improvements/equipment

SHSU Natural History Museum opened in old Huntsville High School, added additional library collections and specimens

Bridge rebuilt at Gibbs Ranch and roads redone

University committed internal funding to address Gibbs Ranch construction projects along with external gifts received from Capital Campaign

Lee Drain Annex renovations planned to upgrade HVAC and interior renovation for Geology research

Former GG office space renovated for use by Mathematics for tutoring and offices
Review of Goals for 2019-2020
Goals for FY20

Recruit the 3rd cohort in PhD program in Digital and Cyber Forensic Science
  ◦ Some have to delay start due to VISA delays

Complete curriculum planning for online MA in Mathematics Education
  ◦ Ongoing

Hire 2 professor to support the BS in Mechanical Engineering Technology
  ◦ Completed, one starts August and one in January 2020

Complete repairs/additions for ETEC to use ART A, C, and WASH for laboratories and research space. -2 of 3 completed

Continue preparing for ABET review in Engineering Technology
  ◦ Submitted, external review pending for Construction Management in January 2021

External review of ETEC programs (Spring 2020) - on hold due to pandemic

Examine marketing efforts and curriculum revision in declining programs in Physics and Geography
  ◦ Will receive NSF Grant which will increase recruitment in Geology and Geography; Physics continuing outreach to High Schools

Complete all training for online faculty through SHSU online - 2nd among all colleges in completion!
Goals for 2020-2021

Assess Teaching Effectiveness of Hybrid Approaches
- what is working?
- How to improve both pedagogy and technology?

Plan for Continued Hybrid model for Spring and Summer 2021
- Default model adopted by COSET is student rotation model as it meets both weekly contact mandate and reduced density mandate
- Any other model proposed must be approved by Chair, Dean, and Academic Affairs

Plan for Budget Cuts for FY22 and beyond
- Need to think about core programs and mission; can we continue to support all programs under multiyear fiscal stress?

Assess State of Master’s Programs
- Move to dual mode of professional online and campus based interdisciplinary?
FY 21 Goals continued

Develop Infrastructure for Agricultural Sciences at Gibbs Ranch to replace aging infrastructure at I-45 Ag complex

Propose New High demand programs in Engineering Technology and possibly Engineering