College of Sciences

2015 STATE OF THE COLLEGE ADDRESS
Overview

- Dean’s Office and College Staff Introductions
- New Faculty and Staff Introductions
- Presentation of College Awards
- Recognition of Tenure and Promotion
- Year in Review
  - Enrollment and Teaching
  - Research and Scholarship
  - Service
- Goals for 2015-2016
Dean’s Office

- Dean - Dr. John Pascarella
- Associate Dean of Curriculum and Assessment - Dr. Marcus Gillespie
- Associate Dean of Research and Graduate Programs - Dr. Anne Gaillard
- Assistant to the Dean - Tammy Gray
- Senior Administrative Assistant - Rhonda Baxter
- Administrative Assistant - Shellie Armstrong
- Staff Assistant - Susan Floyd
College Staff Associates from DELTA

- DELTA COS Web Content Specialist
  John Holder  (jmholder@shsu.edu)
Kaitlyn McGuire
kjs027@shsu.edu
936.202.5037
New Faculty and Staff

- Agricultural Sciences and Engineering Technology
- Biological Sciences
- Chemistry
- Computer Science
- Mathematics and Statistics
- Physics
Please join me in congratulating the winners:

- **Graduate Student Excellence in Research** - Mr. Zhaoce "Charlie" Liu (Mathematics and Statistics)
- **Student Excellence in Teaching** - Ms. Jeannette Carlson (Biological Sciences)
- **Adjunct Faculty Excellence in Teaching** - Mr. Michael Moore (Agricultural Sciences and Engineering Technology)
- **Faculty Excellence in Research** - Dr. Faruk Yildiz (Agricultural Sciences and Engineering Technology)
- **Faculty Excellence in Teaching** - Dr. Scott Miller (Physics)
- **Faculty Excellence in Service** - Dr. Dwayne Pavelock (Agricultural Sciences and Engineering Technology)
Faculty Tenure and Promotion

- **Tenure and Promotion to Associate Professor**
  - Tim Pankuk (Agricultural Sciences and Engineering Technology)
  - Darren Williams (Chemistry)
  - Cihan Varol (Computer Science)

- **Promotion to Professor**
  - Joe Muller (Agricultural Sciences and Engineering Technology)
  - John Strait (Geography and Geology)
Enrollment and Credit Hours

Total university undergraduate enrollment is 17,233, up 3.25%;
Total graduate enrollment is 2,700, down 2.84%;
Total is 19,933, up 2.38% (8/18/15)
Undergraduates in COS

Data as of 8/18/2015-compared to 2014 and 2013, * moved to Health Sciences, 3rd largest college in majors behind COB and CJ

- Sciences 2992/4121/4101
- Biology 514/654/737
- Animal Science 379/350/367
- Forensic Chemistry 274/302/296
- Computing Science 260/289/269
- Agricultural Business 211/226/206
- Construction Management 152/121/117
- Applied Arts and Sciences 139/164/164
- Geology 131/138/124
- Mathematics 128/125/143
- Chemistry 111/113/110
- General Core 98/181/194
- Physics 90/101/99
- Biomedical Sciences 87/79/32
- Interdisciplinary Ag 86/66/66
- Engineering Technology 83/79/37
- Agricultural Engineering Tech 78/67/69
- General Studies 75/66/115
- Geography 58/72/61
- Design/Development 35/39/36
- Plant and Soil Science 37/31/32
- Elec. And Computer Eng. Tech 29/1/0
- Agricultural Communications 20/12/0
- Electronics 0/2/26
- Industrial Safety Management 0/1/15
- Nursing* 0/0/141
- General Studies-Prenursing* 0/822/539
Graduate Students in COS
Data as of 8/19/2015, 5th largest college in grad students

<table>
<thead>
<tr>
<th>Program</th>
<th>Masters</th>
<th>Graduate Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>49/33</td>
<td>7/4</td>
</tr>
<tr>
<td>Biology</td>
<td>30/23</td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td>17/19</td>
<td></td>
</tr>
<tr>
<td>Computing and Information Science</td>
<td>27/25</td>
<td></td>
</tr>
<tr>
<td>Digital Forensics</td>
<td>16/18</td>
<td></td>
</tr>
<tr>
<td>Geographic Information Systems</td>
<td>20/26</td>
<td></td>
</tr>
<tr>
<td>Information Assurance and Security</td>
<td>25/31</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>23/24</td>
<td></td>
</tr>
<tr>
<td>Statistics</td>
<td>14/19</td>
<td></td>
</tr>
<tr>
<td>Cyber Security</td>
<td>1/0</td>
<td></td>
</tr>
<tr>
<td>Data Assurance</td>
<td>2/0</td>
<td></td>
</tr>
<tr>
<td>Digital Investigation</td>
<td>1/3</td>
<td></td>
</tr>
<tr>
<td>Geographic Information Systems</td>
<td>3/1</td>
<td></td>
</tr>
</tbody>
</table>
### SC H-Fall 2015 to Fall 2014

Data from 8/18/2015, class day -7

<table>
<thead>
<tr>
<th>Academic Affairs</th>
<th>3,331</th>
<th>2,699</th>
<th>632</th>
<th>23.42%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration</td>
<td>36,331</td>
<td>34,988</td>
<td>1,343</td>
<td>3.84%</td>
</tr>
<tr>
<td>Criminal Justice</td>
<td>22,735</td>
<td>22,987</td>
<td>-252</td>
<td>-1.10%</td>
</tr>
<tr>
<td>Education</td>
<td>19,741</td>
<td>20,632</td>
<td>-891</td>
<td>-4.32%</td>
</tr>
<tr>
<td>Fine Arts and Mass Comm.</td>
<td>18,807</td>
<td>17,557</td>
<td>1,250</td>
<td>7.12%</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>18,617</td>
<td>12,393</td>
<td>6,224</td>
<td>50.22%</td>
</tr>
<tr>
<td>Humanities and Social Sciences</td>
<td>62,602</td>
<td>65,922</td>
<td>-3,320</td>
<td>-5.04%</td>
</tr>
<tr>
<td>Sciences</td>
<td>53,806</td>
<td>51,494</td>
<td>2,312</td>
<td>4.49%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>235,970</td>
<td>228,672</td>
<td>7,298</td>
<td>3.19%</td>
</tr>
</tbody>
</table>

23% of all credit hours come from COS
### College of Science Graduates

<table>
<thead>
<tr>
<th></th>
<th>Fall 2014/ Fall 2013</th>
<th>Spring 2015/ Spring 2014</th>
<th>Summer 2015/ Summer 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>177/191</td>
<td>243/212</td>
<td>94/87</td>
</tr>
<tr>
<td>Graduate</td>
<td>22/23</td>
<td>44/26</td>
<td>24/11</td>
</tr>
<tr>
<td>Total</td>
<td>199/214</td>
<td>287/238</td>
<td>118/98</td>
</tr>
</tbody>
</table>

Total graduates up 9.8% over previous year. Undergraduate up 4.9%. Graduates up 50%!
Teaching and Curriculum
Curriculum and Degree Programs

TSUS approved (awaiting THECB approval):

- Online Master of Agriculture degree in Sustainable Agriculture and Food Environment (SAFE)
- BS in Digital Forensics Engineering Technology

- Computer Science ABET accreditation to 2019
- Chemistry received ACS certification approval
- MS in Math now part of NSF Math Alliance
Teaching Excellence Awards

- Dr. Marcy Beverly (Agricultural Sciences) is the recipient of the NARRU Outstanding Educator Award
- Dr. Madhusan Choudhary (Biological Sciences) won the 2013-2014 Texas Branch American Society for Microbiology Faculty Mentoring Award
- Dr. Rebecca Garcia (Math) awarded Distinguished University Teaching Award from the Texas Section of the Mathematical Association of America
- Dr. Foy Mills (Agricultural Sciences) is the NARRU Distinguished Educator Award
ACE (Academic Community Engagement)

- Dr. Li-Jen Shannon has the floor
Research and Scholarship
SHSU Award of Excellence in Scholarly and Artistic Accomplishment

DR. SCOTT CHAPMAN (MATHEMATICS AND STATISTICS)
Faculty Research Grant ($5,000): 2 out of the 10 awards were to COS


Jessica Leatherwood (Agricultural Sciences and Engineering Technology): “Non-Invasive Evaluation of Equine Lean Tissue Development”

- Deadline to apply is Oct. 12, 2015
Enhancement Research Grants ($15,000): 6 out of the 10 awards were to COS

Shyam Nair (Agricultural Sciences and Engineering Technology): “Optimal Water Allocation: Simulating Preliminary Data With DSSAT”

Madhusan Choudhary (Biological Sciences): “Molecular Analysis of recA gene in Rhodobacter sphaeroides”

Qinzhong (Frank) Liu and Hyuk Cho (Computer Science): “Novel Smartphone Authentication, Data Protection, and Source Identification”

Narasimha (Karpoor) Shashidhar and Cihan Varol (Computer Science): “iBaTs: Interactive Bash Shell Adaptive Tutoring System”

Samuel Adu-Prah (Geography and Geology): “Spatiotemporal and Environmental Modeling of Malaria in Ghana”

Jianzhong Wang (Mathematics and Statistics): Autodidactic Iteration Schemes for Image Classification

Deadline to apply is Oct. 1, 2015
Professional Development Leaves

Funded by the Provost

- Dr. Sibyl Bucheli (Biological Sciences)
- Dr. Patrick Lewis (Biological Sciences)
- Dr. Aaron Lynne (Biological Sciences)
- Dr. Gang Liang (Physics)

Funded by the College of Sciences

- Dr. Renee James (Physics)
COS Dean’s Office
Funding for Research

- Provided additional funding to EURECA for student-faculty summer research teams (FAST)
- Funded undergraduate students through COS Undergraduate Research Program
- Funded SHSU student for Summer NSF Math REU
- Funded faculty and student publications
- HEAF funding-New Nuclear Magnetic Resonance Imager for Chemistry
## External Funding (7/1/14-7/1/15)

<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>
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<tbody>
<tr>
<td>Agricultural Sciences and Engineering Technology</td>
<td>3</td>
<td>$793,797</td>
<td>3</td>
<td>$34,600</td>
<td>5</td>
<td>$263,969</td>
</tr>
<tr>
<td>Biology</td>
<td>9</td>
<td>$1,417,120</td>
<td>1</td>
<td>$39,920</td>
<td>5</td>
<td>$158,852</td>
</tr>
<tr>
<td>Chemistry</td>
<td>5</td>
<td>$1,315,230</td>
<td>3</td>
<td>$383,631</td>
<td>3</td>
<td>$336,015</td>
</tr>
<tr>
<td>Computer Science</td>
<td>1</td>
<td>$82,930</td>
<td>0</td>
<td>$0</td>
<td>1</td>
<td>$52,215</td>
</tr>
<tr>
<td>Geography/Geology</td>
<td>2</td>
<td>$108,053</td>
<td>0</td>
<td>$0</td>
<td>1</td>
<td>$36,183</td>
</tr>
<tr>
<td>Math and Statistics</td>
<td>1</td>
<td>$249,515</td>
<td>0</td>
<td>$0</td>
<td>5</td>
<td>$396,698</td>
</tr>
<tr>
<td>Physics</td>
<td>1</td>
<td>$138,512</td>
<td>0</td>
<td>$0</td>
<td>2</td>
<td>$30,200</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22</strong></td>
<td><strong>$4,570,233</strong></td>
<td><strong>19</strong></td>
<td><strong>$468,468</strong></td>
<td><strong>22</strong></td>
<td><strong>$1,274,132</strong></td>
</tr>
<tr>
<td>Last Year</td>
<td><strong>34</strong></td>
<td><strong>$9,514,888</strong></td>
<td><strong>19</strong></td>
<td><strong>$1,855,390</strong></td>
<td><strong>38</strong></td>
<td><strong>$606,904</strong></td>
</tr>
</tbody>
</table>
Selected Awards and Active Grants 2014-2015

- Biological Sciences - Earthwatch grant to Dr. Wozniak
- Chemistry - Continued Army funding of Dr. Petrikovics on cyanide antidotes; Darren Williams SDERP grant
- Math and Statistics - 2nd year of NSF REU at SHSU
External Research Awards

- Biology Graduate Student Kelbi Delaune won the Student Field Natural History Award at the Southwestern Association of Naturalists Meeting.

- Frank Liu (Computer Science) won the 2015 Fraud Impact Award from the Houston Area Association of Certified Fraud Examiners.
COS Faculty in Administrative Service

- Dr. Jaimie Hebert (Mathematics and Statistics), Provost and Vice President for Academic Affairs
- Dr. Jerry Cook (Biology), Associate VP of Research
- Dr. Tamara Cook (Biology), Director of EURECA
- Dr. Patrick Lewis (Biology), Assistant Director of Honors Program
- Dr. Bill Lutterschmidt (Biology), Director of TRIES
- Dr. Diane Neudorf (Biology), ACE coordinator for COS
- Dr. Todd Primm (Biology), Interim Director of PACE
Service Activities from Dean’s Office

- Dean’s Office and Biology Faculty attended “Houston Hispanic Forum”
- Organized Annual College Career Fair
- Served on Faculty Compensation Committee (With Dr. Steve Scariano)
- Served on Promotion and Tenure Policy Review Committee
- Served on Let’s Talk Fundraiser for Honors College
- Began College of Sciences Tailgate at Football Games (will continue this year)
SHSU Staff Excellence Awards

Lisa Langlaís (Mathematics and Statistics)
Bubba Miller (Agricultural Sciences and Engineering Technology)
The College of Sciences was recognized for raising the most money during the campaign. From left: Melinda Holt, Bobby Lane, John Pascarella, and David Burris.
Other Service Contributions

- Michael Prokosh (Physics) represented the US Astronomy Education Community in the Astronomy in Chile Educator Ambassador Program.
- Dr. Gary Acton (Geology) gave invited lectures at 8 universities as part of the Ocean Leadership Distinguished lecture series and represented the American Geophysical Union at the Congressional Day visits.
- Dr. David Thompson (Chemistry) was an ACS Project Seed Mentor and was honored for 5 years of mentoring service for Huntsville High School students.
- Dr. Luis David Garcia-Puente (Math) led a workshop at the 2015 Modern Math Workshop and will be a 2016 MSRI-UP advisor.
- Drs. Brandy Doleshal and Taylor Martin (Math) hosted Operation Math Girls (OMG) for female HS students.
- Dr. Mary Swarthout completed two years as President of Research Council on Mathematics Learning.
- Dr. Ananda Manage won the 2015 Graduate Advisor Award from the SHSU Office of Graduate Studies.
Dr. Don Albert (Geography and Geology) serves as editor of the International Journal of Applied Geospatial Research.

Dr. Scott Chapman (Math) is editor of The American Mathematical Monthly, the premier journal of the Mathematical Association of America.

Dr. Stanley Kelley (Agricultural Sciences) is Associate Editor for Texas Journal of Agriculture and Natural Resources.

Dr. Chris Randle (Biological Sciences) is Editor-in-Chief of Castanea, the Journal of the Southern Appalachian Botanical Society.

Dr. Kyle Stutts (Agricultural Sciences) serves as Associate Editor - Journal of North American Colleges and Teachers of Agriculture.

Dr. David Thompson is Associate Editor for Analytical Sciences Digital Library.

Dr. Jianzhong Wong (Math) is Associate Editor of Applicable Analysis and Chief Editor of a special issue of International Journal of Wavelets, Multiresolution and Information Processing.

Editorships
Equipment and Infrastructure
Christmas Mountains Ecological Reserve - Brewster County, Texas

Next to Big Bend National Park
3 new Field Trucks for Agriculture, Biology, Geology
New Research Vehicle for Biological Sciences
New Benches for Anatomy and Physiology Students-Lee Drain Building
Academic Buildings

- Sciences Annex (Vivarium-Animal Care Facility). Open (~$1.6 million)
- Fred Pirkle Engineering Technology Building under Construction, open January 2017 (~$22.5 million)
- Biology Lab Building, hired architectural firm and construction manager, in design phase, to be finished spring 2018 with August 2018 full occupancy (~$60 million)

Over 84 million dollars invested in College of Sciences facilities!
“Genius is one percent inspiration, ninety-nine percent perspiration.” Thomas Edison – American Inventor and Businessman
“Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world.” Albert Einstein – Theoretical physicist and violinist
“I like the dreams of the future better than the history of the past.” Thomas Jefferson
Fred Pirkle Engineering Technology Center

“SAM HOUSTON LEVEL” 4

“Tell me and I forget. Teach me and I may remember. Involve me and I learn.” Benjamin Franklin
Repurposing of Old Post Office at Biology Field Station
Our most significant infrastructure yet?

Harmon Creek, SHSU Biology Field Station
Goals from last year

- Begin Assessing Core Curriculum Courses
  - Process Underway with writing assessment

- Analyze opportunities/threats from Lone Star and partners entering local market
  - i.e., SFA approved to offer a Biology degree at LS Montgomery
    - Not a threat, possibly an opportunity to collaborate

- Can and should we offer select undergraduate degrees at LS campuses or satellite campuses (Woodlands, University Park)?
  - Focus efforts on Woodlands Campus while trying out UP.
  - Seeking to obtain a specialized GIS room at TWC
Goals from last year

- Continue developing international partnerships
  - New Students arriving from Turkey for Computer Science programs, interest also from China for CS
  - Beijing Mining and Technology would welcome course next summer—they cover all room and board for course
  - Developing new field Biology course in Costa Rica

Costa Rican Coffee—Good, Costa Rican Monkey—Bad
Goals from last year

- Develop and Support new programs
  - Submit proposal for Environmental Science BS degree
    - Beginning curriculum process Fall 2015
  - Funding for Computer Science and Engineering Technology Faculty
    - Obtained 4 new faculty lines (2 in each)
  - Signed MOU with UT-Tyler for pre-engineering curriculum for 2+2 transfer program in civil, electrical, and mechanical engineering
Goals from last year

- Support Fundraising efforts for College
  - Attended Fundraising Workshop for Deans
  - $500,000 Endowed Professorship in Biological Sciences from Dr. Roland Black (MD), alumni-soon to be paid out
  - Obtained natural history collection of rare books from Dr. Horace Burke, alumni
  - Will soon announce a multimillion dollar (~5 million) gift to support Engineering Technology
Goals for FY16

- Change Name of College to College of Science and Engineering Technology
  - Students do not know that we have pre-engineering and engineering technology as name is not prominently featured; strong growth potential in pre-engineering and engineering technology

- Submit Full Proposal for First PhD in College
  - Digital Forensics and Cybersecurity; will increase academic reputation of department and college
Goals for FY16 continued

- Support Student Research
  - Provide Summer Research Grants for Graduate students to encourage timely and high quality research
- Increase International Recruitment and Course Offerings
  - Develop proposal with Karz University for 2+2 program in Biotechnology/Bioengineering and Zhejiang Police College for Computer Science 2+2 or 3+2 programs
Have a great year!

- Please provide your input into all of these areas through your departmental meetings, department chair, faculty senate representatives, and other venues.

- I will be visiting with each department during the year to discuss how we can improve teaching, research and scholarship within the COS. I look forward to hearing your ideas.