### College of Science and Engineering Technology (COSET)

2018 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 2017-2018
- Goals for 2018-2019

### Office of the Dean

- 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-Angie Burgess
- Administrative Coordinator-DeLynn Say
- Administrative Associate-Shellie Armstrong
- Administrative Assistant- Susan Floyd

#### Amber Gates replaces Katie McGuire for Instructional Design Support

### New Faculty and Staff

### Agricultural Sciences

Chair-Dr. Doug Ullrich (started June 1)

Tenure-Track Faculty:

Agricultural Business: Dr. Roozbeh Irani-Kermani

Agricultural Engineering Technology: Dr. Richard Ford

Lecturers:

Plant and Soil Science: Mr. Ian Scadden

### **Biological Sciences**

Tenure-Track Faculty:

Infectious Disease and Microbiology: Dr. Jeremy Becheli

Roland Black Endowed Professor of Biological Sciences, Developmental Biology: Dr. Mardelle Atkins

Widlife and Fisheries Science: Dr. Carmen Montana-Schalk

Environmental Science: Dr. Amber Ulseth (starts in January)

Staff:

Microscopy Technician: Mr. Rajesh Balaram (starts in November)

### Chemistry

Lab Coordinator: Mr. Steve Hegwood

### **Computer Science**

Tenure Track Faculty:

Director of the Digital Forensics Center: Dr. Brad Glisson (Digital Forensics and Cybersecurity)

Staff:

Digital Forensics Lab Coordinator: Brandon Sande

### Engineering Technology

Tenure Track Faculty:

Construction Management: Dr. Mahdi Safa

Industrial Engineering: Dr. Awwad Dababneh

Staff:

Lab Assistant: Lilith England

### Geography and Geology

Tenure Track Faculty in Geology:

Paleontology: Dr. David Moss

### Mathematics and Statistics

Tenure Track Faculty in Statistics:

Dr. Di Gao (Bayesian Lasso Analysis)

Dr. Doo Kim (Statistical Modeling of Time Dependent Data)

### Physics

Tenure-Track Faculty:

Dr. Will Shepard (Collider Physics and Phenomenology)

Full Time Pool:

**Christian Seberino** 

Please join me in congratulating the winners:

Graduate Student Excellence in Research – Mrs Indika Kasun Warnakula (Chemistry)

Student Excellence in Teaching – Mr. Sasanka Adikari (Statistics)

Adjunct Faculty Excellence in Teaching – Alisha Bullion (Agricultural Sciences)

Faculty Excellence in Research – Dr. Aaron Lynne (Biological Sciences)

Faculty Excellence in Teaching – Dr. Faruk Yildiz (Engineering Technology)

Faculty Excellence in Service – Dr. Stanley Kelley (Agricultural Sciences)

### College of Science & Engineering Technology Excellence Awards

### **Tenure and Promotion to Associate Professor**

- Phillip (Ryan) Saucier (Agricultural Sciences)
- James Harper (Biological Sciences)
- Jeffrey Wozniak (Biological Sciences)
- Dustin Gross (Chemistry)
- Bing (Jenny) Zhou (Computer Science)
- Brandy Doleshal (Mathematics and Statistics)

### Faculty Tenure and Promotion

### **Promotion to Professor**

- Chad Hargrave (Biological Sciences)
- Christopher Randle (Biological Sciences)
- Velvet Nelson (Geography and Geology)
- Dustin Jones (Mathematics and Statistics)
- Ananda Manage (Mathematics and Statistics)
  Hui Fang (Physics)

### Faculty Tenure and Promotion

### Distinguished Professor

Dr. Scott Chapman, Department of Mathematics and Statistics, will be our first COSET Distinguished Professor.

Congratulations to Dr. Chapman for this outstanding achievement.

### Retirements

Ms. Sharon Frey, Agricultural Sciences Dr. Joe Muller (20 years), Agricultural Sciences

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

### Funded Budget Initiatives FY19

New TT faculty in Digital Forensics to support PhD program

New Administrative Assistant in Computer Science to support PhD program

New Lecturer in Mathematics to support co-requisite courses

Enhanced OM budget for Engineering Technology to reflect growth in Department

### Enrollment and Credit Hours

UNIVERSITY ENROLLMENT EXPECTED TO BE UP AROUND 0.1%

### Undergraduates in COSET

Data (8/15/2018)-compared to 2017 and 2016 3475/3586/3425, down 3.1 % over last year, up 1.5% from 2 years ago

Animal Science	557/530/453	Elec. And Computer Eng. Tech	92/78/53
Biology	447/450/441	Computer Software ET	89 <mark>/89/51</mark>
		Interdisciplinary Ag	85/81/86
Biomedical Sciences	307/279/203	Geology	55/76/97
Forensic Chemistry	303/302/306	Physics	45/56/78
Construction Management	271/255/202	Plant and Soil Science	43/46/40
<b>Computing Science</b>	<mark>247</mark> /354/279	Geography	43/44/54
Agricultural Business	182/205/224	Design/Development ET	41/37/32
Mathematics	150/151/154	Agricultural Communications	37/40/25
Applied Arts and Sciences	118/130/141	Digital Forensics Eng. Tech	20/9/0
		Composite Science	3/2/0
Agricultural Eng. Tech	108/93/86	Environmental Science	1/0/0
Engineering Technology	105/103/98		
Chemistry	102/113/103		

### Graduate Students in COSET

Data as of 8/15/2018 , compared to  $2017\,and\,2016$ 

#### <u>Doctoral</u>

Digital and Cyber Forensic Science (New) 6

Masters	223/210/233
Agriculture	30/31/39
Sustainable Agriculture	32/22/24
Biology	29/39/36
Chemistry	9/6/11
<b>Computing and Information Science</b>	16/15/21
Digital Forensics	19/19/23
Information Assurance and Security	33/30/30
Geographic Information Systems	19/15/17
Mathematics (MA, MS)	20/20/20
Statistics	16/13/17
Graduate Certificate	19/12/13
Cyber Security	10/4/5
Data Assurance	2/1/1
Digital Investigation	5/4/5
Geographic Information Systems	2/3/2

### Enhancing Graduate Programs

PhD Stipends and Scholarships for CS program will be \$30,000. Funding is committed for 4 cohorts of 5 students each.

Chemistry reduced number of TA lines by 6 but increased stipend amount to \$18,000 (all offers were accepted); other departments may want to consider this approach.

Increased number of TA lines by 4 using Distance Learning Funds, with GIS receiving 2 lines, Agriculture 1, and Mathematics and Statistics 1 additional line

Beginning this summer, all departments had to fill by July 15 all dedicated lines or lines will be released (up to 2 for BIO, CHEM, MATH or 1 for AG, CS, GIS) for 2 years for use by other departments in college with waiting students. Chemistry is currently loaning 3 fellowships to other departments. All other slots were filled.

New Scholarship model goes into effect Fall 2018-\$2000 scholarship for all admitted MS TA students for first year, \$1000 competitive scholarships for first year (non-TA students) and second year for all students (TA or not)

Scholarship funds increased using increase in Graduate Advising Fee, funds from Graduate Studies Office, and use of DLF funds

Please have all graduate students apply for Scholarships from Office of Graduate Studies (3 competitions per year). Please write a personalized letter of support and have students include all relevant experience (not just work) in section on experience.

### SCH-Fall 2018 to Fall 2017

Data from 8/14/2018 , class day -7

Academic Affairs	2,901	3,175	-274	-8.6%
Business Administration	36,593	38,114	-1,521	-4.0%
Criminal Justice	24,271	23,788	483	2.0%
Education	21,382	20,871	511	2.5%
Fine Arts and Mass Comm.	19,525	19,810	-285	-1.4%
Health Sciences	21,795	20,036	1,759	8.8%
Humanities and Social Sciences	62,833	61,897	936	1.5%
Science & Engineering	62,617	60,737	1,880	3.1%
Technology				
Grand Total	251,917	248,428	3,489	1.4%

SHSU has a 1.4% increase in credit hour production with COSET doubling that at 3.1% increase 25% of all credit hours come from COSET

### COSET Graduates

	Fall 2017/ Fall 2016	Spring 2018/ Spring 2017	Summer 2018/ Summer 2017	Total AY18/ AY17
Undergraduate	194/187	300/291	130/112	624/590
Graduate	24/20	43/50	20/21	87/91
Total	218/207	343/341	150/133	711/681

Total graduates up 4.4% over previous year. Undergraduate up 5.8% Graduates down 4.4%%

### **Teaching and Curriculum**

**Curriculum and Degree Programs** 

 PHD in Digital and Cyber Forensic Science starts Fall 2018; 6 students in program

In development:

- Online MA in Mathematics Education
- Online Professional MS in GIS
- BS in Mechanical Engineering Technology
- Information Assurance and Security program ranked 5<sup>th</sup> in the nation by U.S. News and World Report for online programs; ranked 1<sup>st</sup> by BestCollegeReviews.org

### Teaching Excellence Awards

Dr. Robert Lane received the 2017 Regional United States Department of Agriculture Food and Agriculture Sciences Excellence in Teaching Award, joining Dr. Foy Mills and Dr. Stanley Kelly as former recipients.

We are the only non-land grant or research university with three teaching awards



### Texas State University Regents' Teacher Award

Dr. Bill Jasper (Mathematics and Statistics) has been selected as the TSUS Regents' Teachers Award winner, the first winner from SHSU

### PACE Teaching Innovation Grants

Junkun Ma and Keith Coogler

### STEM Center MiniGrants for Active Learning Incorporation in Courses

- Dr. Mardelle Atkins (Biological Sciences)-BIOL 3480
- Dr. Jeremy Becheli (Biological Sciences)-BIOL 3470
- Dr. James Harper (Biological Sciences)-BIOL 3460
- Dr. Aaron Lynne (Biological Sciences)-UNIV 1301
- Dr. Donovan Haines (Chemistry)-CHEM 3438
- Dr. Khaled Rabieth (Computer Science)-COSC 2347
- Dr. Karpoor Shashidar (Computer Science)-DFSC 2316
- Ms. Sarah Fritsch (Mathematics and Statistics)-MATH 1420
- Dr. Brandy Doleshal (Mathematics and Statistics)-MATH 1332H
- Dr. James Dent (Physics)-PHYS 1401

### NSF STEM Grant 2017-2021

\$2.1 million NSF grant to establish a STEM Center (PI: **Brian Loft**, CoPIs **Taylor Martin**, **David Thompson**, **Faruk Yildiz**, **Adrian Villalta**-**Cerdas**). The STEM Center will increase student preparedness for first-year math and chemistry courses, provide training & incentives for faculty to adopt active learning techniques in their classrooms, and promote undergraduate research for second-year and transfer students.

• Taylor will speak about ways to get involved with the STEM Center.

# Research and Scholarship

### Office of Graduate Studies Awards

Outstanding Graduate Student: Ryan Gueli, M.S. in Mathematics

Three-Minute Thesis Competition Winner: Emily Meridian, M.S. in Agriculture, on "The Prevalence of Internal Parasites in the Feral Hog Population of East Texas". Two other Agriculture students placed in top 10.

Three Students named ASPIRES Scholars

 Ligia Flores and Kiara Sanches (MS Mathematics) and Javier Gomez (MS Biology)

### Other Items

Tamara Cook (Biological Sciences): Anniversary Award (Highest Honor for Outstanding Contributions in Parasitology); Helminthological Society of Washington

Dongil Song (Computer Science): Young Researcher Award, Association for Education Communications and Technology

Quinzhong (Frank) Liu (Computer Science): Two Patents awarded

Emma Bullock (Mathematics and Statistics): Received the MMIRA/MAXQDA 2018 Award for Outstanding Dissertation Research

# Faculty Research Grant (\$5,000 each): 6 of 10 awards were to COSET faculty

**Sibyl Bucheli** (Biological Sciences)-"Indoor versus Outdoor Decomposition on the Microbiome of Human Cadavers

**Christopher Randle** (Biological Sciences)-A new model of parasite-host communication in leafy mistletoe

**Christopher Hobbs** (Chemistry)-"Preparation and use of new, ROMP-based Polymer-Supported Catalysts"

**Tarek Trad** (Chemistry)-"Efficiency enhancement of dye-sensitized solar cells using doped ZnO nanocolumns

**Reg Pecen** (Engineering Technology)-"A novel smart grid test bench implementation by distributed generation

**Hui Fang** (Physics)-" Efficiency enhancement of dye-sensitized solar cells using doped ZnO nanocolumns

Faculty Research Grant Due Dates will be announced later in the fall

## Enhancement Research Grants (\$15,000): 5 of the 10 awards were to COSET Faculty

**Madhusadan Choudhary** (Biological Sciences)-"Effects of gold mining on mercury methylation and freshwater microbiomes

Quinzhong (Frank) Liu (Computer Science)-"Steganographic forgery detection in JPEG impages

Khaled Rabieh (Computer Science)-"Investigating fair and privacy aware EV's charging station reservation schemes

**Ross Guida** (Geography and Geology)-"Assessing dynamic growth and flood risk in metro Houston

**Timothy Trujillo** (Mathematics and Statistics)-"Infinite Ethics: a non-archimedian approach

Enhancement Research Grant due dates will be announced later in the fall
#### Professional Development Leaves for FY19

Funded by the Provost

Dr. Brandy Doleshal (Mathematics and Statistics)

#### COSET Dean's Office Funding for Undergraduate Research (\$77,000)

- Funded undergraduate students through COSET Undergraduate Research Program (\$15,000) in summer 2018 competition
- See new guidelines for FY19 competitions; grants will fund spring and summer student stipends in 2019. Two application deadlines per year.
- Funded Eight Additional Eureca FAST grants (\$62,000)
- Used salary savings to fund eight additional summer EURECA proposals for Faculty and Student Teams for undergraduate research

#### External Funding (7/1/17-7/1/18)

Department	# New Apps	\$ New Apps	# Grants Awarded	\$ New Awards	# Active Awards	\$ spent active grants
Agricultural Sciences	6	\$1,573,065	1	\$15,124	3	\$57,795
<b>Biological Sciences</b>	8	\$977,507	5	\$148,878	15	\$124,967
Chemistry	6	\$1,463,334	3	\$268,818	7	\$249,941
Computer Science	14	\$3,355,716	0		2	\$68,617
Engineering Technology	3	\$764,179	0		0	
Geography/Geology	1	\$58,845	0		2	\$4,975
Math and Statistics	5	\$264,261	3	\$2,035,556	9	\$285,240
Physics	1	\$260,657	0		1	\$17,850
Total	44	\$8,717,564	12	\$2,468,386	39	\$809,565
Last Year	38	\$13,741,721	13	\$1,901,793	37	\$829,087

#### Selected Grants

Shyam Nair and Bobby Lane (Agricultural Sciences), new USDA NIFA grant on Sustainable Agriculture Education

Ilona Petrikovics (Chemistry)-Department of Army, Cyanide antidote research continuous funding for multiple years

Brian Loft and others (Mathematics)-AASCU, Frontier Set and NSF STEM Center

Dustin Jones-Math Education Consortium grant

Joel Walker and James Dent (Physics)-new NSF grant (not included in the table due to date of award)

### New Faculty Liaisons with ORSP from COSET

Dr. Darren Williams-Chemistry

Dr. Karpoor Shashidar-Computer Science

Dr. Recayi Pecen-Engineering Technology

Dr. James Harper-Biological Sciences

Dr. Chad Hargrave will speak about new initiatives in ORSP

#### Scholarship

Biological Sciences Faculty (and student co-authors) published 32 papers

John Strait and Ava Fujimoto-Strait, "The Mixed Plate, a field experience on the cultural and environmental diversity of the Big Island of Hawaii" NCGE (National Council of Geographic Education) "Best content" article in Geography Teacher

Jim Tiller (Geography) published two books on Texas-Louisiana Geographical History

Timothy Trujillo (Mathematics and Statistics): Invited speaker at Ramsey Theory in Logic, Combinatorics, and Complexity conference in Italy

### SERVICE

#### Gifts to COSET (7/1/17-6/30/18) compared to last year \$2,854,693/\$5,982,254

- Agricultural Sciences- \$443,125/\$426,625 (New Lincoln Lumbers Scholarship of \$15,000)
- Biological Sciences- \$49,222/\$44,438
- Chemistry- \$9,938/\$14,803
- Computer Sciences-\$4,280/\$4,298
- Engineering Technology-\$2,208,520/\$5,330,687 (Pirkle and Quanta gifts)
- Geography and Geology-\$48,995/\$60,083
- Mathematics and Statistics-\$8,108/\$7,392
- Physics-\$29,970/\$8,447
- College-\$52,536/\$85,481

#### Dean's Office Service

Agricultural Sciences, Biology, and Engineering Technology Faculty attended "Houston Hispanic Forum"

Organized Annual College Career Fair

Attended College Recruiting Fair in Jordan and Study Abroad Fair in Spain

Supported Let's Talk Event for Honors College, Undergraduate Research Symposium, Student Athletics events, BioBlitz, Alumni Dinner

Supported College Tailgate activities at Football Games including Piney Woods Game



#### **COSET Faculty in Administration**

Dr. Chad Hargrave (Biology), Assistant VP of Research

Dr. Madhusudan Choudhary (Biology), Director of EURECA

Dr. Patrick Lewis (Biology), Assistant Director of Honors Program

Dr. Bill Lutterschmidt (Biology), Director of University Research Centers

Dr. Todd Prim (Biology), Director of PACE

Dr. Brian Loft (Mathematics), Faculty Fellow in Office of Academic Affairs

#### ACE Academic Community Engagement

Thank you to Diane Neudorf (Biological Sciences) for her service as the COSET ACE representative

Our new representative is Dr. Jeff Wozniak (Biological Sciences)

#### Campus Meetings

Dr. Don Albert and the SHSU Geography department hosted the SWAAG (Southwest Division of the American Association of Geographers Oct. 25-Oct. 28, 2017

Also hosted Texas Map Society



#### Service

Dr. Darren Williams (Chemistry) held a Product Quality Cleaning Workshop May 16-17, 2018, including 36 participants, 8 sponsors, 7 suppliers from SHSU and 28 companies.



#### Service

#### Solar Eclipse



**Society of Physics Students** invites you to join us for the Great American Eclipse viewing!

Date: Aug 21 - 12:00pm to 1:30pm Location: SHSU Observatory - 26 Knox Cir \*We provide the glasses \*T-shirts will be for sale! Let us know your size!



For more information contact: Andre Guimaraes sps@shsu.edu 936.333.2711 SHSU Society of Physics Students held a Solar Eclipse Viewing Aug. 21, 2017

#### Mathematics Conferences

Texas Women in Mathematics Symposium Conference: Organized and hosted by Brandi Doleshal (Mathematics and Statistics)

International Workshop on Difference Sets (Hangzhou, China): Organized by Ken Smith

CominaTexas, organized by Ken Smith and Luis Garcia-Puente

#### Editorships

Chris Randle (Biological Sciences), Editor, Castanea (Southern Appalachian Botanical Society)

Kyle Stutts (Agricultural Sciences), Editorial Board NACTA and Reviewer for Animal Scientist

Dongil Song (Computer Science), Managing Editor, International Journal of Multiple Research Approaches

Recayi Pecen (Engineering Technology), Editor, American Journal of Undergraduate Research Engineering/Technology

Don Albert and Samuel Adu-Prah, Geography, Editors, International Journal of Applied Geospatial Research; journal now featured in Emerging Sources Citation Index of ESCI

#### **Other Service**

Cihan Varol (Computer Science), Member, IEEE Education Society Standards Committee

Faruk Yildiz (Engineering Technology); Division President, Electricity, Electronics, and Computer Technology, The Association of Technology, Management, and Applied Engineering

Velvet Nelson (Geography); Commission on Geography of Tourism, Leisure, and Global Change

Samuel Adu-Prah, Geography, awarded the Carnegie African Diaspora Fellowship Program Award (2nd time) to travel to Ghana for collaborative research and teaching with Kwame Nkruhmah University faculty and students

Scott Chapman (Mathematics and Statistics); Selected to the Committee of Examiners for the GRE Mathematics Test

Melinda Holt (Mathematics and Statistics); Governing Board, American Statistical Association Council of Chapters and Chair of the ASA Traveling Course Committee

Mary Swarthout (Mathematics and Statistics); Board Member, Texas Council of Teachers of Mathematics;

## Equipment and Infrastructure





Aerial View From Northeast

#### Life Science Building

17 teaching laboratories, 1 dividable lecture hall

30 research labs

26 for Biology, 2 for Chemistry and 2 for Forensic Science (+DNA sequencing facility)

Biology Office and Lunch/Break Room

Office of Pre-Health Professional (OPPA) Advising Center

Faculty and Staff Offices

Shared Research Facilities:

- New Confocal, Scanning Electron, and Imaging Microscopes
- Cellular and Molecular Core Lab, Ecological Analysis Lab and Support Facilities, Sample Processing and Gear Washout room, Specialized Insect Rearing rooms
- Cold Room, Freezer and Refrigerator rooms, and glass wash/sterilizer room

Student Study rooms, Tutorial Rooms, and Flexible Seating on each floor

#### Other improvements/equipment

New Gibbs Ranch conference center

Center for Digital Forensics moved from White Hall to AB1

New soft bench seating and bistro bar-height tables (coming soon) in LDB atrium

New non-leaking roof on LDB

New Atomic Force Microscope in Physics

New Computer Cluster for Computational Research in Physics

Start-up and Equipment Funding for FY19 (~\$397,000)

# Review of Goals for 2017-2018

#### Goals from FY18

Recruited students into the Composite Science and Environmental Science Bachelors degrees; Recruit Geography, Geology, and Physics students (partially)

Recruited students into the PhD degree in Digital and Cyber Forensic Science and Hired Director of Center for Digital Forensics and DF Lab Coordinator

Moved Biological Sciences into the new Biology Lab Building and Hired 4 TT faculty and Microscopy Technician

Completed Equipment Purchasing and Installation for Engineering Technology and Hired Construction Management TT Faculty

Proposed to administration for reuse of Art Buildings for Engineering Technology expansion in 2019

Implemented new Math rules on continuous enrollment/drop ban and hired 2 TT Statistics Faculty

Launched NSF STEM Center

Completed additional course development for Online GIS and Mathematics Education MS programs

#### Goals for FY19

- Launch the PhD program in Digital and Cyber Forensic Science
- Complete curriculum planning for online GIS, online MA in Mathematics Education and BS in Mechanical Engineering Technology
- Renew ABET accreditation for BS in Computing Science
- Continue preparing for ABET review in Engineering Technology
- Complete all training for online faculty through SHSU online
- Increase ACE course participation
- Utilize NSF Stem funding for curricular improvement
- Repurpose old Biology 3<sup>rd</sup> floor space for Math/Stats and Geography/Geology use-Use for adjunct offices, GIS grad student space, tutorial room, and student lounge space.