CSE EXTERNAL ADVISORY BOARD

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TCU Neeley School of Business
MESSAGE FROM THE DEAN

Dear Friends of the College of Science & Engineering:

Charles Kettering, American inventor and holder of 186 patents, once remarked: “The world hates change, yet it is the only thing that has brought progress.” By that standard the College of Science & Engineering has progressed in substantive ways over the past year. The College has grown substantially…and not just last year. For example, the number of undergraduates majoring in the College has increased by over 73% since 2007 – compared with TCU’s overall growth of 27%.

- This has necessitated faculty growth. To wit, the College will welcome 10 new faculty this fall. I’m pleased with the quality of faculty we are able to recruit to TCU.
- The growth has also required substantive updating of our facilities. For example, last summer we did extensive reshoring (remodeling) to the Tucker Technology Center, providing additional offices for computer science, engineering and mathematics faculty as well as classroom space for computer science and engineering.
  Reshoring efforts to the College physical plant have totaled over $85 million over the past 19 years. And it continues this summer, as we are reshoring the Monnig Meteorite Gallery in the Sid W. Richardson Building (where you can literally touch a piece of Mars!).

The College experienced three significant organizational changes this past academic year:

- The School of Geology, Energy & the Environment became two independently functioning departments (Department of Environmental Sciences; Department of Geological Sciences). The decision to create distinct departments allows the College to highlight individual strengths and capitalize on strategic and operational opportunities specific to each department.
- The Energy Institute was administratively relocated from the Provost’s Office to the College of Science & Engineering. This realignment reflects the close relationship between the Institute and the Department of Geological Sciences. It was coincident with Dr. Ken Morgan’s retirement as founding Institute Director and the appointment of Dr. Richard Denne (Hunter Enis Chair of Petroleum Geology) as his successor. In addition, the inaugural class of three students completed studies in the Ralph Lowe Energy Management Program (RLEMP) directed by Dr. Ed Ireland (Professor of Professional Practice).
- Both the Ranch Management Program and Ranch Management Institute moved into the College from the School of Interdisciplinary Studies. Ranch Management has long been one of TCU’s crown jewels and features a world-renowned certificate program in which classroom instruction and discussions are coupled with fieldwork observation. The Institute of Ranch Management is an outreach and research institute that seeks to make a positive impact on global production agriculture. Professors Kerry Cornelius (Burnett Ranches Endowed Professor) and Jeff Geider (William Watt Matthews Director) lead the Ranch Management Program and Institute, respectively.

The College is in outstanding shape, with high-achieving students and faculty as well as a supportive staff. Its future is indeed bright. I hope you enjoy the 2019 version of our Annual Report that Andrea so nicely crafted. We are proud of our accomplishments and welcome this opportunity to share some highlights with you.

Sincerely,

Dr. Phil Hartman
Dean, College of Science & Engineering
VISION
Inspiring individuals to discover and apply science and technology for a better future

MISSION
To foster knowledge of and curiosity about science, mathematics, and engineering by offering personalized, rigorous instruction that emphasizes research and internship opportunities.

CORE VALUES
- **Integrity** - acting with compassion in an honest and trustworthy manner
- **Respect** - honoring individual differences and embracing inclusiveness
- **Intellectual Curiosity** - experiencing the joy of learning through a passion for discovery and innovation
- **Excellence** - challenging ourselves and others to reach our greatest potential
- **Hard Work** - embracing rigor, analytical thinking, and perseverance in the pursuit of knowledge

PROMISE STATEMENT
Where open doors open minds

FAST FACTS
- **1,895** undergraduate students
- **48%** of incoming Chancellor’s Scholars had declared majors in the CSE
- **135** graduate students
- **1 in 3** students in the John V. Roach Honors College has a major in the CSE
- **130** full-time faculty
TENURED AND/OR PROMOTED FACULTY

- Kristi Argenbright (Environmental Sciences); promoted to Instructor II
- Tory Bennett (Environmental Sciences); tenured and promoted to Associate Professor
- Gary Boehm (Psychology); promoted to full Professor
- Matt Chumchal (Biology); promoted to full Professor
- Provost Teresa Abi-Nader Dahlberg (Computer Science and Engineering); tenured
- Mark Demarest (Biology) - promoted to Instructor II
- Julie Fry (Chemistry & Biochemistry) - promoted to Instructor II
- Sue Gong (Engineering) - promoted to full Professor
- Omar Harvey (Geological Sciences) - tenured and promoted to Associate Professor
- Amanda Hale (Biology) - promoted to full Professor
- Sarah Hill (Psychology) - promoted to full professor
- Marlo Jeffries (Biology) - tenured and promoted to Associate Professor
- Kevin Knight (Psychology and Director of the Institute of Behavioral Research) - tenured
- Doug Ingram (Physics & Astronomy) - promoted to Senior Instructor
- Allison Owen (Mathematics) - promoted to Senior Instructor
- Stephanie Wallace (Biology) - promoted to Instructor II
- Dave Weise (Psychology) - promoted to Instructor II
- Sarah “Uma” Tauber Weise (Psychology) - tenured and promoted to Associate Professor
- Dean Williams (Biology) - promoted to full Professor
- Dean of Graduate Studies and Associate Provost for Research Floyd Wormley (Biology) - tenured

NEW FACULTY

Dr. Mia Bovill – Assistant Professor
DEPARTMENT OF PHYSICS & ASTRONOMY
Dr. Bovill earned her BS, MS and Ph.D. degrees from the University of Maryland in 2004, 2006 and 2011, respectively. She then completed post-doctoral fellowships at the University of Texas (2011-2012), Pontificia Universidad Catolica de Chile (2012-2015), and the University of Maryland (2014-2018). Dr. Bovill uses several approaches to investigate the formation and fate of the first galaxies as well as the formation and evolution of dwarf galaxies.

Dr. Bo Mei – Assistant Professor
DEPARTMENT OF COMPUTER SCIENCE
Dr. Mei received his Ph.D. in Computer Science from The George Washington University (2018) after acquiring MS degrees from The George Washington University (2013) and Purdue University (2011) as well as a Bachelor’s of Engineering degree from Beijing Institute of Technology (2010). His scholarly interests include the areas of mobile computing, machine learning and neural & social networks.

Dr. Bingyang Wei – Assistant Professor
DEPARTMENT OF COMPUTER SCIENCE
Dr. Wei completed his Ph.D. in Computer Science from the University of Alabama (Huntsville) in 2015 after earning a BE in Computer Science and Technology from the Ocean University of China in 2010. He joined TCU having served as a tenure-track Assistant Professor at Midwestern State University since 2015. His research interests include software engineering, knowledge representation & reasoning, and natural language processing.

COLLEGE DEI ADVOCATE

During AY18 the CSE became one of the first three colleges at TCU to develop a description of responsibilities, conduct a search, and appoint a College Diversity, Equity and Inclusion Advocate. Professor Allison Owen, Instructor II in the Department of Mathematics, accepted this important responsibility.

CSE Diversity Statement:
TCU’s College of Science & Engineering is committed to building and sustaining a diverse, equitable, and inclusive community of students, faculty, and staff that welcomes and respects all persons. The College strives to open doors, open minds, reduce barriers, and promote scientific progress through full inclusion across the societal spectrum.

TENURED FACULTY

- James Comer (Associate Professor of Computer Science)
- Milt Enderlin (Assistant Professor of Professional Practice)
- Dianna McFarland (Professor of Professional Practice)
- Bonnie Melhart (Associate Provost for Research and Dean for Graduate Studies & University Programs)
- Ken Morgan (Professor of Geological Sciences)
- Tamie Morgan (Associate Professor of Professional Practice)
With an eye for math and a passion for space, Cooper Gould ’19 made a name for himself as a well-respected mechanical engineering student throughout the College of Science & Engineering (CSE). His success as a student and peer has set him up for an exciting end to his time at TCU and an even more exciting beginning to his post-graduation plans.

Gould was selected for the Fulbright award to Switzerland, which is a nine-month cultural exchange program. He is the first TCU student to win a Fulbright award to Switzerland. The Fulbright Scholarship program allows college graduates to travel to a country of their choosing to research in their area of expertise or teach English in the country’s local schools. Gould decided to apply for an opportunity in Switzerland on the research route where he would be provided with the expertise and tools to research, develop and optimize morphing winglet on airplanes. The winglet is the flap-like piece on the end of an airplane wing that assists in the aircraft’s directional stability. “I’ve done a lot of research for my honors thesis on morphing winglets, but there is still so much more that I would like to look into. This is why I decided to apply to the Fulbright program with this idea in mind,” said Gould.

Gould chose the mountainous European country as his dream destination because of his experience on the John V. Roach Honors College “Cultural Routes” summer abroad trip, which included a visit to Interlaken, Switzerland. “I absolutely fell in love with Switzerland – being from Vail, how could I not? It is like Colorado times ten! I would be so excited to have the chance to go back and immerse myself in its culture while being able to do valuable research,” said Gould. Gould has even been able to connect with a hydraulics professor Professor François Avellan from the Swiss Federal Institute of Technology Lausanne (EPFL), the 11th most prestigious engineering school in the world, who has agreed to work with him during his time in Switzerland. Gould has even been able to connect with a hydraulics professor Professor François Avellan from the Swiss Federal Institute of Technology Lausanne (EPFL), the 11th most prestigious engineering school in the world, who has agreed to work with him during his time in Switzerland.

Gould will be returning to Los Angeles, California, for a second summer to intern for NASA’s Jet Propulsion Laboratory (JPL) in the Entry, Descent, and Landing group which will focus on the process of landing spacecraft on other planets. During his first summer as an intern with JPL he worked with the Dynamic and Aerospace group to further his knowledge on aerospace engineering. Gould feels honored to have the “out of this world opportunity” to intern for JPL where he is able to learn aspects of aerospace engineering he does not get to see in the classroom.

Gould also plans to attend graduate school to earn his master’s in aerospace engineering after his internship and nine months in Switzerland. With a love for the California coast, the Colorado Rocky Mountains and Texas charm, Gould was looking to attend graduate school in any of these three states and has decided to attend the University of Colorado at Boulder after his time in Switzerland.

As Gould’s final semester at TCU inevitably flies by, he has much to look forward to. As a member of the Beta Theta Pi fraternity, the Chancellor’s Leadership Program, a small group leader at Doxology church and a Frog Shadow tour guide – not to mention his academics and senior projects – Gould has plenty to keep him busy. Gould is currently focused on his senior design project in engineering. His team’s senior design project is concentrated on oil wells and developing ways to make them more efficient. Gould said, “it has been a really special opportunity to help lead a team of eight people and be able to construct a 20-foot-tall test structure to help us accomplish what we’re doing.”

While Gould has stretched himself far and wide academically and in his extracurricular activities, he still makes it a priority to spend time doing the things he loves such as golf and skiing. Coming from the mountains in Colorado, he was able to grow up doing both and still enjoys the sports today. He credits his grandparents for his affinity for golf, and his experience has even lead him to win more than ten golf tournaments in his career and compete in four playoff holes for his high school state championship.

In the years to follow his graduation, Gould hopes to spend his time as an aerospace engineer, possibly on the West Coast. “Aerospace Engineering is the perfect blend of my passions and my interests, and it provides me with a way to contribute to not just the world, but the universe,” said Gould.
NEW LEADERSHIP COMES TO TCU

Teresa Abi-Nader Dahlberg, Ph.D.

Dahlberg has a proven track record of success, with an emphasis on research, recruiting high-achieving students, as well as diversity and inclusion initiatives to benefit both faculty and students. Moreover, her strong financial acumen was the impetus to a $50 million advancement campaign at Syracuse that stabilized the College of Engineering’s fiscal health.

Her accomplishments include presiding over significant culture change at three universities, including improving academic excellence spanning liberal arts and professional disciplines; securing external funds for advancement and research; leading and executing an inclusive shared vision, including strategic planning; leveraging geographical opportunities for university distinction; enrollment management; and financial acumen. Read full story: https://bit.ly/2RKJWQP

Floyd L. Wormley Jr., Ph.D.

Teresa Abi-Nader Dahlberg, provost and vice chancellor for Academic Affairs at Texas Christian University, appointed Floyd L. Wormley, Jr., Ph.D., associate provost for Research and dean of Graduate Studies for Texas Christian University. He will begin his tenure June 30, 2019.

Wormley currently serves as associate dean for Research and Graduate Studies, College of Sciences; associate program director, UTSA Research Centers in Minority Institutions Program; and interim chair, Department of Physics & Astronomy, all at the University of Texas at San Antonio. Wormley’s administrative track record of success includes the facilitation and development of new graduate degree and certificate programs and coordinating efforts for awarding graduate scholarships, as well as the generation of more than $28 million in new research awards during the 2017-2018 fiscal year.

Wormley is a Fellow of the American Association for the Advancement of Sciences, a Fulbright Scholar and a Fellow for the American Academy of Microbiology within the American Society for Microbiology. Read full story: https://bit.ly/2ROoYic

Matthew Chumchal (biology)
• Environmental Toxicology and Chemistry, Exceptional Reviewer

Michael Chumley (biology)
• Summer Institutes on Scientific Teaching, Scientific Teaching Fellow

Marlo Jeffries (biology)
• South Central Chapter of the Society of Environmental Toxicology & Chemistry, 1st Place Best Platform Presentation
• South Central Chapter of the Society of Environmental Toxicology & Chemistry, 1st Place Best Poster Presentation

Clark Jones (biology)
• TCU PanHellenic, Scholarship Recognition Program
• Mr. & Mrs. Kenneth Hughes, Gift to TCU in Honor of Dr. Clark A Jones

Jeff Coffer (chemistry & biochemistry)
• Nominee, Wassenich Award for Mentoring in the TCU Community
• Society of Environmental Toxicology & Chemistry, High-ranking reviewer in 2017

Kayla Green (chemistry & biochemistry)
• American Chemical Society, E. Ann Nalley Regional Award for Volunteer Service to the ACS Southwest Region
• Dallas Fort Worth Section of the American Chemical Society, ACS DFW Section 2018 Chemistry Ambassador Award

Benjamin G. Janesko (chemistry & biochemistry)
• Austin Symposium on Molecular Dynamics, Best Poster Award
• SMU, Dieter Cremer memorial

Eric Simanek (chemistry & biochemistry)
• John V. Roach Honors College, Finalist - Honors Professor of the Year
• National Honor Society, Sigma Xi Distinguished Lecturer

Efstathios E. Michailides (engineering)
• ECOS-2018, Plenary Lecture

Tory Bennett (environmental sciences)
• Nominee, Wassenich Award for Mentoring in the TCU Community

Becky Johnson (environmental sciences)
• Nominee, Wassenich Award for Mentoring in the TCU Community

Michael Slattery (environmental sciences)
• Sierra Club, Special Service Award

Allison Owen (mathematics)
• Nominee, Wassenich Award for Mentoring in the TCU Community

Susan Staples (mathematics)
• National Association of College and University Residence Halls, Faculty member of the Month
• TCU Baseball Team, Guest Coach for the Day
• Nominee, The Wassenich Award for Mentoring

Marlyn (Lyn) Dart (nutritional sciences)
• Finalist, Wassenich Award for Mentoring in the TCU Community

Rebecca Dority (nutritional sciences)
• Nutrition and Dietetic Educators and Preceptors, Outstanding Didactic Program Educator Award

Gina Hill (nutritional sciences)
• Tarrant County Food Policy Council, Local Fare Innovation Award for the TCU Food Recovery Network

Anne VanBeber (nutritional sciences)
• TCU College of Science & Engineering, Award for Distinguished Achievement as a Creative Teacher and Scholar

Ellen Broom (psychology)
• TCU Athletics, TCU Football Guest Coach
• National, Wassenich Award for Mentoring in the TCU Community

Naomi Ekas (psychology)
• University of Warwick, Residential Fellowship

Kathy Ferguson (Dean’s Office – Staff)
• Finalist, Chancellors’ Outstanding Staff Award
• Recipient, Provost’s Academic Affairs Outstanding Staff Award
The College’s undergraduate SERC grant program provided funding to students who identified a faculty mentor and project as well as wrote an acceptable SERC grant proposal. Seventy-three SERC undergraduates grants were funded this past calendar year for a commitment of $90,129. A total of $748,536 has been provided to fund 601 students since SERC’s inception in 2006. A SERC graduate funding stream was established during AY18 to provide opportunities to graduate students when other funding was not available or did not completely cover an expense related to their research or presentation thereof. Twenty-two proposals were funded in AY18 totaling $56,349. This year 37 graduate students were funded for a total commitment of $65,438. A significant amount of this funding derived from gifts from various supporters of the College.

Additionally, the 17th annual Michael and Sally McCracken Student Research Symposium (SRS) included 182 posters with over 300 undergraduate and graduate student authors – both increases over last year. SRS included an awards ceremony that featured a keynote address by Dr. Lin Zhong, Professor of Electrical & Computer Engineering at Rice University, entitled: “How computing helped us win the Cold War.”

Samantha Singer ‘19 (child development) from Dallas, Texas, was originally drawn to TCU because of her Disciples of Christ church back home. After taking a visit with her youth group during her senior year of high school, Singer fell in love with the TCU campus, the people and the overall atmosphere. Originally a nursing major, Singer was drawn to the opportunities offered in the school at TCU. After spending some time in the nursing school and pursuing a minor in Spanish for health professions, Singer felt called to child development because of her love for children. She switched her major and has never looked back.

In May 2018, Singer accompanied 16 fellow students as well as staff from the Karyn Purvis Institute of Child Development (KPICD) on an experiential learning trip to China. They stayed at Maria’s Big House of Hope and helped care for the children there, who have acute medical and special needs. They were able to follow the children’s lead, work with their nannies (called “ayis”), and even attend a birthday party. The students were able to contrast the intervention methods taught in the classroom at TCU to how it was used in China. Singer said, “It was amazing to go to this place and see pure joy. It was especially cool for me because I’m adopted from South Korea, so it was interesting to see how the process worked.” Singer knows that her experience abroad will be beneficial as she pursues a career in the child development field.

After going abroad, Singer had an important revelation. She reflected, “I realized that I don’t necessarily have to go abroad to make a huge difference. Coming back here…I can still make an impact in America.” And she’s doing just that.

Singer has been working at the local Brain Balance Achievement Center in Fort Worth and helping with assessments for children who might join the program. She says, “I help with assessments to see what kind of treatment they’ll need. We assess whether they’re right-brain-weak or left-brain-weak. We then do a four-to-six-month program doing exercises to help them strengthen their brain.” Singer also mentioned the importance of Brain Balance’s holistic approach. She said, “We don’t use medicines. We use a well-rounded, holistic approach including the exercises and a diet which cuts out sugars, gluten and various other things.”

Not only did Singer spend her time helping sensory coaches, but she also hopes to start a nonprofit one day. She helped bring a therapeutic camp for foster children to TCU through the KPICD and served as the co-assistant director. Known as Hope Connection 2.0 Camp, this camp covered everything from games for the children to parent training for parents with adopted children.

Through her work abroad, at TCU and her experience at Brain Balance, Singer is gaining the knowledge and skills she needs to pursue her career goals. She is incredibly grateful for her time at TCU and applied to pursue a master’s degree in Complex Developmental Trauma here at TCU after graduation. Singer said, “TCU is so amazing in general. I was given the freedom to help bring Hope Connection 2.0 here and I have received so much support from the College of Science & Engineering staff and TCU as a whole.”
TCU’s two youngest students Carson and Cannan Huey-You are no strangers to the public eye, and when the brothers were approached by the casting producer of MythBusters Jr. they were faced with a whole new kind of spotlight. While some kids might spend their summers working, relaxing or traveling, Carson and Cannan spent their time on the set of the Science Channel’s new show MythBusters Jr.. I was lucky enough to sit down with the Huey-You brothers, their mentor Dr. Magnus Rittby, (Senior Associate Dean for Administration and Graduate Programs), and their mother Claretta to learn what it was like to be a MythBuster:

Carson can you explain what your role was as an intern for the show?
Carson: As an intern I was one of the people [the crew] would consult to see if the math, physics and general science of the show was being explained correctly. So, sometimes I would go downstairs to where they were filming on the set and explain something to them so they could explain it to the camera.

Cannan can you explain your role as a MythBuster?
Cannan: Well basically as a cast member we had six kids who were divided into two groups to test the myths – the groups alternated each episode. For each myth we would go through a process to compare everything. We would do a small-scale test and then scale it up each time and eventually get to the main test and make the call that it was busted, plausible or confirmed.

How did you feel about being in front of the camera?
Cannan: I've been in interviews before, but I felt different being in front of a camera and filming a TV show. After the first week I was fine with it, but it did take some time to get used to.

What was it like to work alongside Adam Savage?
Cannan: That was really fun, we watched him all the time on the original MythBusters show so actually getting to work with him and be on MythBusters – I would say that was a really fun experience.

How have your experiences on the show been different from what you do in the classroom?
Cannan: A lot of the academics I learned here [TCU] I was able to bring to MythBusters and apply by actually testing things experimentally. And I got to use power tools and stuff, which I’ve never gotten to do here since most of my schooling is just done on paper. Also I don’t get to crash and blow up stuff at school.

Carson: I would say, as far as things that I was able to do on the show and not at TCU, being able to be present with the explosions was really cool. Everything was a lot more hands-on.

And how did you feel about being in front of the camera?
Cannan: I’ve been in interviews before, but I felt different being in front of a camera and filming a TV show. After the first week I was fine with it, but it did take some time to get used to.

I know you can’t give us any spoilers so without giving anything away, did you have a favorite episode or experiment?
Cannan: I liked the domino myth.
Carson: I actually got to be a guest on two of the ten episodes, and of those two my favorite was the furniture myth.

What can we expect to see on this season of MythBusters Jr.?
Carson: It is hard to answer because we actually haven’t seen the episodes yet. We are going to be seeing it at the same time as everyone else!
Claretta: Adam Savage and the entire crew said that it is going to be exactly like MythBusters as far as the myths and explosions – they’re not downsizing anything because they are children. It is the same concept and the same large-scale experiments.

Do you have any plans or hopes to work with MythBusters Jr. in the future?
Carson: Hopefully so, it will all depend on how this season goes, but we're hoping for another season so maybe we can come back and do it all again.

MythBusters Jr. aired in January. Move over grown-ups – it’s the kids’ turn.

Photos courtesy of Discovery Channel

by: Lindy Lamme ‘19
A dedication to giving – it’s in the family

BY: ANDREA STAFFORD ‘13 ’17

“I knew I wanted to go to college, and TCU in particular was always special to me,” said Alicia Harris Clark ‘64. Clark and her husband, Dr. Everett Glenn Clark ‘65, began the family line of several preceding generations of Horned Frogs – many of which have or will work in dentistry. Four consecutive generations of Clarks have studied at the university, and eventually Glenn and son Dr. Brian Clark ‘92 broadened their legacy to TCU by establishing the Clark Family Endowed Pre-Health Scholarship fund in 2017.

The Clark’s generosity enables the Pre-Health Professions Institute to award selected pre-health students with scholarship support based on academic merit or financial aid needs.

Alicia said, “TCU has always been an important part of my family’s life – my great-grandfather, Dr. Charles Harris ’48 (honorary LL.D. (Doctor of Laws)), was instrumental in securing the Mary Couts Burnett Trust for TCU, which helped build the library. He was Mrs. Burnett’s personal physician.”

Dr. Charles Harris later founded and endowed TCU’s Harris College of Nursing & Health Sciences. Alicia and Brian’s father, Dr. Charles Harris II, served on the Board of Directors (now called the Board of Visitors) for the Harris College of Nursing and was the infirmary doctor until he passed away in 1959. Their mother, Elvira Hernandez Harris Rogers, was an associate professor in the Department of Spanish for 20 years.

“To our family, TCU is like family – it means pride, loyalty, memories, acknowledgement and future,” said Alicia. “Our family has been very blessed by the university, which is why we are passionate about helping other students at TCU through funding scholarships.”

“Giving back to TCU is important to me because it gave me the opportunity to have the wonderful career that I have now,” Brian said. “I felt prepared for dental school and was able to be successful as a dentist and business owner because of the science and business courses that I took here. I hope that future pre-health students can see the power of giving back and know that there are people out there supporting them. The pre-health track is a long, difficult road and I’m glad to offer support however I can.”

This new scholarship award began with the start of the 2018-19 academic year.

“The Clark Family Endowed Pre-Health Scholarship will make attending TCU more affordable for deserving pre-health students,” said Matt Chumchal, director of the Pre-Health Professions Institute. “Generations of TCU pre-health students will be positively impacted by this generous gift.”

Some of the youngest of the Clark family members are currently fourth-generation undergraduate TCU students. Senior chemistry major and biology minor Brian R. Clark Jr., and sophomore neuroscience major Charlie Clark are both pursuing pre-dental studies through the pre-health track.

Brian said, “It’s really special that I get to see my two sons at TCU now, and I’m so thankful that they get to have the kind of experiences that so many of the generations in my family got to experience.”

Brian’s sister, Stephanie Clark Maglisceau ‘93 and husband Tom Maglisceau ‘91 ‘93, attended TCU as well.

“We are very thankful to the Clark family and their generous support of pre-health students,” said Dean Phil Hartman. “The Clarks have a long history with TCU, and we are honored they have dedicated this fund to increase opportunities for exemplary pre-health students to study at TCU.”

To learn more about providing student scholarships or other ways to support the College of Science & Engineering, contact the TCU CSE Office of Development today:

Valerie DeSantis Bechtel
Assistant Dean for Development
v.desantis@tcu.edu
O: 817.257.7020
C: 817-938-1541
Informing the students is one of our main focuses. There is still some misunderstanding about what children such as composting, while the younger students’ understanding was harder to gauge.

Observations revealed that older students tended to be more engaged in the issue and knowledgeable about terms has recycling bins, they could be used more effectively. We also found that the majority of the students did

“So far we have come to the conclusion that what we are doing is necessary. We found that while the school has recycling bins, they could be used more effectively. We also found that the majority of the students did not know what composting was, and if they did it was because they practice it at home,” said Johnson. Initial observations revealed that older students tended to be more engaged in the issue and knowledgeable about terms such as composting, while the younger students’ understanding was harder to gauge.

Informing the students is one of our main focuses. There is still some misunderstanding about what children do and do not need after the reformation of nutrition guidelines,” said Sumpter. For instance, many students will grab milk for lunch out of habit versus craving. The carton and leftover milk will then be thrown away when the use of it could have been avoided altogether.

Throughout March and part of April, the TCU research team and its partners have organized for up to three volunteers from TCU, North Hi Mount parents and the Fort Worth community to help facilitate during the school’s breakfast and lunch periods. The volunteers helped guide the students to make smart choices regarding the foods they put on their plates and how they can dispose of the leftovers.

As the program wraps up at the end of the spring semester, Johnson, Finken and Sumpter will focus on post-testing to measure the results from the program. Their post-testing will include another ten-bag waste audit as well as collecting results from a follow-up survey from the students, parents, faculty and staff who participated in the program. The success of the program will be based on the change in the quality of the food waste and the knowledge and behaviors of the North Hi Mount community in regards to food waste, composting and recycling.

Johnson, Finken and Sumpter will continue to analyze and present their results throughout their senior year. They even hope to pass the project along to future nutrition students to continue its positive impact. “We hope to make a successful program that can be replicated at other schools in the future,” said Hill.

The Sustainability Pilot Program was launched with help and support from Courtney Carroll who is the FWISD Foreman of Energy Management and FWISD Waste Management, Tabitha Butler from the City of Fort Worth, Brandon Castillo from Cowboy Compost, David Simmons, Brittany Rosenberg, and Joao Pimentel from City of Fort Worth Code Compliance, Miguel Harth-Bedoya who is the co-owner of Cowboy Compost and conductor for the Fort Worth Symphony Orchestra, North Hi Mount Elementary faculty (Dr. Myrna Blanchard, Ms. Elizabeth Kelz, and Ms. Heather Key), students and parents, North Hi Mount Elementary custodial staff led by Leroy Homer, North Hi Mount Elementary cafeteria staff led by Dianna Cox, Jessica Reyes and Angela Lowe from the FWISD Child Nutrition Services, students volunteers from the TCU Department of Nutritional Sciences, Members from the Tarrant County Food Policy Council’s Food Recovery Working Group and the College of Science & Engineering SERC grant for providing money to support this research endeavor.

Before the 2018-2019 school year began, Gina Jarman Hill, associate professor of nutritional sciences, approached Myrna Blanchard, principal of North Hi Mount Elementary, to ask if the school would be interested to allow her and her nutrition students to integrate a sustainability plan. Around the same time, members of the North Hi Mount student council recognized there was an opportunity to improve the amount of food being wasted in the school’s cafeteria.

Junior nutrition majors, Josie Johnson, Nikki Finken and Liesel Sumpter teamed up with Hill, to launch the Sustainability Pilot Program at North Hi Mount. The program is designed to educate elementary students on food waste and how it can be reduced through recycling, composting and the “share table.” The share table is a system created to redistribute unused, edible foods to avoid unnecessary waste. Students are able to place unopen and non-refrigerated foods, such as whole fruits and packaged items, on a table for other students to eat during lunch or take home. About 86% of FWISD students qualify for free or reduced lunches, thus the share table would offer another snack option while also reducing food waste.

The TCU research team also received a SERC grant for the pilot program from the College of Science & Engineering. The funds from the grant have been directed towards utilizing the services offered by Cowboy Compost. Cowboy Compost is a local organization that provides composting and educational services. Twice a week Cowboy Compost picks up compostable materials from the school and manages the next stages of composting the waste. Members from the organization and the City of Fort Worth also dedicated a day-and-a-half to educate each class about composting and recycling.

“Without the service Cowboy Compost has been able to provide for the school, this program would probably look very different, because they have contributed to the educational and composting aspect. We are so grateful to have the opportunity to work with them thanks to our SERC grant,” said Sumpter.

Johnson, Finken and Sumpter have been concentrating on the research surrounding food waste habits at the school. The program began in the spring with a food waste audit based on a ten-bag sample from the school’s dumpster. The TCU students and Hill then visited the classrooms to administer a survey to participating North Hi Mount students to measure their current knowledge on food waste matters. Faculty and parents of the elementary students were also sent a questionnaire.

Throughout March and part of April, the TCU research team and its partners have organized for up to three volunteers from TCU, North Hi Mount parents and the Fort Worth community to help facilitate during the school’s breakfast and lunch periods. The volunteers helped guide the students to make smart choices regarding the foods they put on their plates and how they can dispose of the leftovers.

As the program wraps up at the end of the spring semester, Johnson, Finken and Sumpter will focus on post-testing to measure the results from the program. Their post-testing will include another ten-bag waste audit as well as collecting results from a follow-up survey from the students, parents, faculty and staff who participated in the program. The success of the program will be based on the change in the quality of the food waste and the knowledge and behaviors of the North Hi Mount community in regards to food waste, composting and recycling.

Johnson, Finken and Sumpter will continue to analyze and present their results throughout their senior year. They even hope to pass the project along to future nutrition students to continue its positive impact. “We hope to make a successful program that can be replicated at other schools in the future,” said Hill.

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By: Lindy Lamme ’19
THE IMPACT OF DIVERSITY AMONG CSE FACULTY

by: Anna Kathryn Groom ’19

TCU is working to create a more well-rounded, inclusive community on campus. The charge of the DEI (Diversity, Equity and Inclusion) Committee is to monitor all existing and future initiatives regarding diversity, equity and inclusion on campus; actively participate in developing a vision for diversity, equity and inclusion that represents the entire campus community; and make recommendations to the Chancellor based on this vision. As part of TCU’s commitment to excellence, the DEI Committee is working to ensure equitable access and inclusion of opportunities, benefits and resources for all members of the Horned Frog family.

The DEI initiative applies to not only the student body, but also to the faculty. The College of Science & Engineering (CSE) currently has 35 faculty members from more than 20 countries, including China, France, Ukraine and Greece. These professors’ specialties have an expansive range, covering everything from chemistry to geological sciences, to computer science.

While these international professors bring a plethora of expertise to TCU, they also give students a greater perception of the world around them. This is consistent with TCU’s mission statement which promises, “To elevate individuals to think and act as ethical leaders and responsible citizens in the global community.”

The CSE’s international professors are representations of what it means to be a responsible global citizen. Additionally, these professors, whether intentionally or not, promote international travel and study. Students are encouraged to travel globally to better understand the world around them, and are inspired to get out in the world and learn about new cultures.

Diversity in the college brings new insights, passions, world experiences, etc. that can be applied to the subject material and heighten value of the students’ learning experience. Our professors from all around the world are fueled by their upbringings, which inspired them to pursue their passions in the sciences. They are able to give CSE students a perspective of the world that they might not have otherwise experienced.

This global perspective is reflected in many of the opportunities offered through the CSE. These professors are able to offer opportunities to students that might not be accessible if it weren’t for their international ties. For example, Mike Slattery, professor, chair of the environmental sciences department and director of the Institute for Environmental Studies, takes students to his home country of South Africa to study wildlife conservation through a summer study abroad course. Associate Professor in the Department of Geological Sciences Cheyenne Xie leads research on the plate tectonics and slip lines of various basins in his home country of China. “Tex” Moncrief Jr. Chair Professor of Physics Karol Gryczynski holds present appointments as visiting professor in the Department of Physics at the University of Strathclyde, Glasgow, UK and adjunct professor at the University of Shimane, Matsue, Japan. These professors, in addition to many others, are able to use their connections from around the world to bring new perspectives to TCU’s campus. They open students’ minds by showing them how to apply the knowledge they’re gaining at TCU to real-world experiences.

Biography professor, Giridhar Akkaraju, believes that as the world becomes more integrated, students are more likely to interact with people who are different than them. He says, “The likelihood of students coming into contact with someone who is from a different country than them is very high. [Diversity] is an important first step in students engaging with someone who comes from a different background, in order to integrate into the broader world.”

Akkaraju also said that the field of science is fairly diverse internationally, and that there is an academic advantage to diversity. He notes, “Academically, there is a diversity of science that happens worldwide. By broadening the search for faculty, then you basically are getting the best people you can, which enhances the academic experience.”

In fall 2019, the CSE will welcome three new faculty members who are from the following countries: Nepal, Ethiopia and South Africa.

TCU fosters a campus climate that respects, values and supports faculty, staff and students from many walks of life. TCU’s mission is to foster academic, social and personal development for all members of the campus community to work productively across differences, whether in race, class, ethnicity, gender, sexual orientation, ability or veteran status. By promoting diversity in not only the student body, but also the faculty, TCU is able to give students a more diverse and inclusive experience on campus.

SciCom in the CSE

SciCom is the College Science Communication initiative, geared towards promoting CSE and its students and faculty to the public in a variety of ways. Communication workshops were delivered to CSE graduate students many of whom subsequently competed in the TCU 2019 Three Minute Thesis competition, with one of these students capturing the people’s choice award. Cross-campus collaborations continued with the College of Fine Arts, the TCU Idea Factory, and the TCU and UNTHSC School of Medicine. In conjunction with Carson and Cannan Huey-You’s work with the television show Mythbusters Jr., the college was provided with substantial media exposure, including radio, TV, and print media. In addition, SciCom began working with the show’s host, Adam Savage, to bring him to campus in the 2019-20 academic year. The past year, SciCom began developing a podcast series which will begin airing in the coming year. Y-Science Matters will feature conversations with TCU faculty members, highlighting their research, but also exploring what drove them to become scientists, their academic and career paths etc. Music for the podcast is provided by Dr. Till Meyn, TCU School of Music, and the podcast is produced in collaboration with KTCU.

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Eli Reynolds ‘19

Eli Reynolds ‘19 came to TCU with the expectation to one day become a doctor. “They told us from the beginning the pre-med track would be very difficult,” said Reynolds, “but I’ve been overwhelmed by the amount of support I’ve received along the way from my professors and peers.” Through hard work, growing relationships with his professors and a passion for biology, Reynolds has been able to successfully pursue this dream while leaving a lasting impact on the College of Science & Engineering. Some of his most notable work has been through his current research project with biology Professor Giridhar Akkaraju.

Reynolds’ research focuses on Hepatitis C, a virus that infects the liver, and more specifically how the virus is successful at surviving in the body. Reynolds and Akkaraju have been collaborating on the project since the summer after Reynolds’ sophomore year. Akkaraju had previously collaborated with a former undergraduate student before Reynolds expressed interest in the subject and inherited the research responsibilities.

Over the past couple months, the two have directed their focus to the NS5A 10A protein, a mutant protein of NS5A which allows the virus to inhibit the innate immune system to promote the success of the virus in the body. The next step is to figure out specifically how the protein is able to do this. In order to do so, Reynolds and Akkaraju’s recent efforts have been dedicated to developing a plasmid, a DNA molecule in a cell that is separated from a chromosomal DNA and can replicate independently. “The purpose of this is to investigate the protein’s specific mechanism of inhibition,” Reynolds explained. In other words, the plasmid will serve as a method to observe the performance of the protein.

Reynolds’ research has left him with more than just a deeper understanding of how viruses function in the body. “Our research process has taught me many valuable skills. It has allowed me to become more comfortable with the scientific method of observing and inspired a curiosity in me that has pushed me to think beyond school. Research is about understanding things that are happening in the real world,” said Reynolds.

While Reynolds maintains a busy schedule with his research and academics, he also finds time to be involved with extracurricular activities such as campus ministry and Dream Outside the Box. Dream Outside the Box is a service organization dedicated to creating excitement and interest in school for kids of lower socioeconomic backgrounds by teaching them about career options they might not be exposed to otherwise. Reynolds even got the chance to teach the children in the organization about his future career path in the medical field.