

## **College of Science and Technology Annual Report for 2016 - 2017**

The College of Science and Technology (CSAT) at Radford University (RU) was formed on July 1, 2007 by combining the Departments of Biology, Chemistry and Physics, Geology, and Mathematics and Statistics from the former College of Arts and Sciences and the Department of Information Technology from the former College of Information Science and Technology. On July 1, 2009, the Anthropology and Geography programs from the College of Humanities and Behavioral Science joined the Physics and Geology programs of the CSAT to form the School of Environmental and Physical Science (SEPS) in the CSAT. The Anthropology program was approved by SCHEV to become the Anthropological Sciences program on May 10, 2010. The Geography program was approved by SCHEV to become the Geospatial Science program on May 17, 2011. On November 11, 2011, Provost Minner approved the proposal of the SEPS faculty members to form independent departments of Anthropological Sciences, Geology, Geospatial Science and Physics with individual department chairs.

### **MISSION**

The College of Science and Technology prepares students with skills and expertise essential to the Commonwealth and the nation. The College emphasizes the theory and applications of science, mathematics, and technology. The College develops students' creative and critical thinking skills and teaches students to analyze problems and implement solutions to a vast array of challenges in our local, national and global communities. Students will be prepared to bring creative and socially responsible innovations to the workplace and to society.

### **DEGREES AND CONCENTRATIONS IN 2016-17**

- B.A. and B.S. in Anthropological Sciences with concentrations in General Anthropology, Field Archaeology and Forensic Anthropology
- B.S. in Biology with concentrations in General Biology, Molecular Biology, Environmental Biology, Pre-health and Medical Laboratory Sciences
- B.S. in Chemistry with concentrations in Professional Chemist, Biochemistry, Advanced Professional Chemist, Forensics and Advanced Biochemistry as well as an Environmental Science option
- B.S. in Computer Science and Technology with concentrations in Computer Science, Database, Software Engineering and Networks
- M.S. in Data and Information Management
- B.S. in Geology with concentrations in General Geology, Engineering and Environmental Geosciences and Earth Sciences
- B.A. and B.S. in Geospatial Science with concentrations in Environmental and Geoinformatics
- B.S. in Information Science and Systems with concentrations in Information Systems and Web Development
- B.A. and B.S. in Mathematics with concentrations in Applied Mathematics, Statistics and Traditional Mathematics
- B.A. and B.S. in Physics with concentrations in Physics, Biophysics, Earth and Space Science and Physics Education

## GOALS AND ACCOMPLISHMENTS FOR 2016-2017

These goals are based on the roles and responsibilities of deans as described in section 4.1.3.1 on page 62 of the Radford University Teaching and Research Faculty Handbook.

**- to lead the faculty and staff of the college in developing and delivering educational opportunities of the highest quality possible for students, consistent with the mission of the College,**

**Goal:** Support efforts to enhance student recruitment and diversity through collaborations with the Vice President for Enrollment Management and other partners

**Status:** Many efforts have been made in 2016-17 to enhance student recruitment as well as student diversity. Examples of collaborations with the Office of Admissions include traveling to Roanoke on February 19, 2017 to participate in an Office of Admissions Spring Yield Event for admitted students and to make presentations to recruit students for the CSAT.

On February 25, 2017, the CSAT department chairs, selected faculty and I participated in the annual CSAT Open House event where we welcomed approximately 50 accepted students and their family members to meet CSAT faculty and students and tour CSAT facilities. This Open House event was conducted as a Highlander Day in collaboration with the Office of Admissions.

Enhanced efforts are being made to recruit students who have served as veterans. I attended the program “Trends in Services for College Veterans” that was sponsored by the Military Resource Center on March 31, 2016 to understand how to serve veterans and recruit students with military experience. I participated in the workshop “Academic Pathways for Military-Related Students” that was conducted by Dr. Bruce Brunson, Commander, USN, Retired, and a faculty member at Tidewater Community College on May 27, 2016. I also participated in a workshop entitled “Green Zone Training” on August 18, 2016 to understand how to assist students who are veterans.

Many efforts have been made to recruit international students. James Pennix and I conducted a telephone conference call with Rebecca Wheddon and Gareth Hook at Study International in Bristol, England on June 7, 2016 to discuss advertising the CSAT for targeted recruiting of international students. On August 8, 2016, I met with Dr. Yong Xu in the Department of Mathematics and Statistics and the Wang family from China along with their son who is a prospective student to provide them information about CSAT degree programs. At the invitation of Dr. Paul Carrant, I met with several members of the Academic Affairs Leadership Team and a delegation from Shandong University on November 30, 2016 to recruit Chinese students to Radford through a proposed partnership. I met representatives from Monash University in Australia on November 3, 2016 and attended their presentation to Radford students.

Much progress has also been made to recruit transfer students. All CSAT programs developed transfer guides for NVCC students to transfer to Radford University, and I participated in a conference call with administrators from NVCC on November 17, 2016 to discuss transfer agreements specific for students in Computer Science and Information Science with an interest in cybersecurity. On March 8, 2017, I attended meetings at NVCC with President Hemphill, Chief of Staff Schumaker, Vice President McCarthy, Dean Devaney and Dean Low to make presentations about our colleges and to discuss potential guaranteed transfer agreements for NVCC students to attend Radford University. I met specifically with Dr. Julie Leidig, Provost at the

NVCC Loudoun Campus, and Dr. Chad Knights, Dean of the Division of Math, Science and Engineering at the Alexandria Campus, and our discussion will continue and culminate in a Guaranteed Transfer Partnership Agreement signing at NVCC on August 28, 2017. On March 15, 2017, I traveled to Wytheville Community College with Provost Scartelli, Assistant Provost Santopietro, Assistant Provost Mekolichick, Dean Low, Dean Hawkins, Acting Dean Jacobsen and Dr. Angela Joyner to discuss with Dr. Lori Huffard and Dean Jacob Surratt how WCC students could be recruited to transfer to Radford University. These discussions will also be continuing with the goals of recruiting more transfer students from WCC to Radford University.

CSAT faculty are also actively recruiting students to their departments, and I provided CSAT travel funds for Dr. Christine Hermann, Chair of the Department of Chemistry, to represent the CSAT and Radford University at the Association of Old Crows (AOC) 2<sup>nd</sup> Annual STEM Outreach Program on November 29 through December 1, 2016, at the Marriott Marquis and Convention Center, in Washington, D.C.

I also represented the CSAT as an invited VIP judge for the FIRST Chesapeake District Robotics Competition Southwest Virginia Event that was conducted at Blacksburg High School on Saturday and Sunday, March 4 and 5, 2017. I provided prospective science and technology students CSAT information and talked to students who were interested in computer science as a major in college and as a career. This competition was a more than 20 hour time commitment over the weekend that involved judging the Team Attributes for 38 robotics teams from Virginia, Maryland and North Carolina.

In the area of supporting efforts to enhance diversity, I serve as a member of the Diversity and Equity Action Committee to more fully understand how the CSAT can attract and retain a more diverse population of faculty and students. I also attended a Diversity Reception on April 6, 2016, and I invited Miracle Davis, a Biology major, to make a presentation at that event. I further supported the efforts of the DEAC and Center for Diversity and Inclusion by attending the DEAC Retreat at Selu Conservancy on May 20, 2016 and by attending the MLK Day event with the keynote speaker Mr. Roland Martin.

A significant effort to enhance diversity and recruit prospective students with partners across Radford University and an emphasis in the CSAT was the submission of a Howard Hughes Medical Institute (HHMI) grant proposal on October 13, 2016. This HHMI REALISE grant project proposes to use a making-themed curriculum, peer role modeling, postdoctoral teaching faculty and faculty learning communities in the introductory Biology, Chemistry and Physics laboratory courses as a mechanism to engage students in active learning and high impact practices in their first experience in a college science laboratory course. This grant proposal would provide \$1,000,000 in funds to Radford University over a five-year period, and I would serve as the Program Director of the REALISE project if it is funded. The Core Team members of this HHMI REALISE grant project include Dr. Tara Phelps-Durr, Dr. Jeremy Wojdak, Dr. Irvin Clark, Dr. Jeanne Mekolichick and me.

**Goal:** Support efforts to enhance student retention and diversity through collaborations with the Council on Student Engagement and Success (CSES) and other partners

**Status:** Dr. Art Carter, Associate Dean of the CSAT, accepted my invitation to serve on the Council on Student Engagement and Success as a representative from the CSAT, and he is working closely with Vice President McCarthy to understand the unique challenges of retaining CSAT majors.

Dr. Sara O'Brien, Dr. Tara Phelps-Durr and Dr. Kimberly Lane are continuing their CSAT Student Development Series workshops, and the proposal from Dr. O'Brien and Dr. Phelps-Durr for a program that would encourage students to invite faculty to lunch and promote student engagement and retention was approved and funded by the Office of the Provost as the "Highlander Chats" program for the 2016-17 academic year. I participated in this program on September 6, 2016 when I had lunch with a student from my BIOL 310 course.

I supported retention efforts by participating in a "Sit With Me" event sponsored by the Women in Computing Club on April 6, 2016 that recognized the contributions of women in technology fields. The guest of honor for this event was President Kyle. This event was organized around the Red Chair program that supports women in computing. I also supported women in science by attending the Iota Sigma Pi National Honor Society for Women in Chemistry initiation ceremony that was held in M73 Center for the Sciences on November 13, 2016 where Dr. Amy Balija was inducted as a new member.

I participated in an Advising Conference on April 26, 2016 here on campus that described retention strategies from professional advisors. On August 17, 2016, I attended a demonstration of the Starfish Advising Program to understand its potential for enhancing student academic engagement and retention, and I used the Starfish program in my BIOL 310 course that I taught in fall 2016.

I participated in an event planned by the Office of New Student Programs on January 23, 2017 where the new freshmen majors in the CSAT who made the Dean's List in fall 2016 were honored. This retention event is an effort to retain our high achieving students beyond their first year as Radford students and CSAT majors. I also participated in the "You Matter" campaign on September 13, 2016 and on February 7, 2017 where I accompanied a Residence Life staff member and knocked on the doors of Stuart Hall residents to say hello and ask how their semester was going. This project allowed me to meet more CSAT majors who live in Stuart Hall and for them to realize that I am concerned about their academic and social success as Radford students. I also met with Jamie Penven and Erin Long on March 3, 2017 to discuss how the CSAT could collaborate with the Office of Residential Life to retain students, and this discussion led to me inviting Jamie and Erin to join us for a CSAT Leadership Team meeting on March 15, 2017 where Erin explained how the Office of Residential Life is working to retain students.

A significant retention effort from faculty in the Department of Biology and the Department of Physics has resulted in the submission of a grant proposal to the Council on Undergraduate Research (CUR) that would award funds from an NSF IUSE grant. I attended a webinar on February 10 that was sponsored by Assistant Provost Jeanne Mekolichick along with Dr. Tara Phelps-Durr in Biology and Dr. Kim Lane Chemistry to describe the CUR proposal opportunity. Dr. Tara Phelps-Durr authored the CUR Transformations Project pre-proposal that was submitted on March 1, 2017, and on March 16, Dr. Phelps-Durr was notified that the proposal from Radford had been selected to move to the next phase of the project. The full proposal to the CUR Transformations Project will be written in collaboration with the Department of Physics and is due on May 1, 2017. This project proposes to retain students by embedding undergraduate research into the curricula of the Biology Department and Physics Department.

**Goal:** Support the development and enhancement of innovative instructional methods and learning opportunities as well as interdisciplinary efforts and programs

**Status:** Faculty members submitted research proposals during 2016-17 that were funded by internal grants to enhance the teaching, research and service missions of the CSAT. There were seven CSAT Faculty Research projects funded for a total of \$41,911. These projects included the following.

Dr. Laura Gruss and Dr. Matt Close, \$7,500, Impact of cadaver dissection on student learning in undergraduate human anatomy courses

Dr. Amy Baliya, \$7,500, Biodegradable Star Block Co-Polymers for the Removal of Organic Pollutants from Water

Dr. George Harakas, \$7,500, Introduction of Solid State Materials Chemistry into the Advanced Inorganic Chemistry (CHEM 416) Laboratory Curriculum

Dr. Peter Christmas, \$7,500, Regulation of protein prenylation by cytochrome P450 enzymes

Dr. Caleb Bradberry, \$5,260, An Examination of the Cost of Care for Heart Failure Patients in the Commonwealth of Virginia using Advanced Analytics

Dr. Caleb Adams and Dr. Matt Close, \$4,046, Effects of Magnetoreception in *Myrmeleontidae*

Dr. Tingyao Xiong, \$2,605, Eulerian Numbers in Cryptography

Funding from the CSAT Dean's Office budget was provided to many CSAT faculty members and departments to support their teaching, research and service missions.

Funding from the CSAT Dean's Office budget was provided to the Department of Anthropological Sciences to purchase a display case for their human replica skeletal materials.

Funding from the CSAT Dean's Office budget was provided to the Department of Biology to purchase vivarium equipment, a guest speaker honorarium, a replacement PCR machine and professional travel funds for Dr. Christine Small to attend a conference for the PULSE/SERP project and for Dr. Karen Powers to conduct research travel to the U.S. Virgin Islands.

Funding from the CSAT Dean's Office budget was provided to the Department of Chemistry to assist with Blue Ridge Highlands Science Fair expenses for recruitment.

Funding from the CSAT Dean's Office budget was provided to the Department of Geology to pay for a wall mural and point counter and to complete the remaining construction projects for the Museum of the Earth Sciences.

Funding from the CSAT Dean's Office budget was provided to the Department of Geospatial Science for Dr. Charles Manyara to attend a professional training workshop.

Funding from the CSAT Dean's Office budget was provided to the Department of Information Technology for Dr. Art Carter to attend a cybersecurity meeting with Governor McAuliffe.

Funding from the CSAT Dean's Office budget was provided to the Department of Mathematics and Statistics to support departmental expenses and the AMC 10/12 recruitment event on campus.

Funding from the CSAT Dean's Office budget was provided to the Department of Physics to assist with buying updated software for the ground penetrating radar.

Funding from the CSAT Dean's Office budget was provided to the Forensic Science Institute to assist with funding professional travel.

I have also committed CSAT funds for 2017-18 for a professional development opportunity for Dr. Tara Phelps-Durr. Dr. Phelps-Durr has applied for selection to the 2017 PKAL STEM Leadership Institute that would be conducted in July of 2017 and require a budget for the cost of the summer institute, reassigned time, and support for professional development for faculty and students. I am happy that Dr. Phelps-Durr is pursuing this opportunity, and if she is selected, she will support the faculty and students of the CSAT as a STEM Retention Faculty Fellow.

**Goal:** Support undergraduate and graduate degree program development and recruitment

**Status:** The M.S. degree in Data and Information Management proposal was approved by the State Council of Higher Education for Virginia (SCHEV) on May 7, 2015. This degree program is the first graduate degree awarded exclusively in the College of Science and Technology and the first graduate degree in Data and Information Management in the Commonwealth of Virginia. In August 2016 the first cohort of three graduate students who were not already enrolled at Radford started this program, and there are already eleven applications for the cohort that will start in August of 2017.

The Department of Information Technology has proposal a B.S. degree in Computer and Cyber Science (B.S. in CCS) that would develop the Certificate in Information Security into a spinoff degree program. The proposal for this new degree program was approved on campus at the November 11, 2016 Board of Visitors meeting, and the B.S. in CCS proposal is currently being reviewed by Dr. Monica Osei at SCHEV in Richmond.

**Goal:** Support enhanced opportunities for student professional and personal development in collaboration with the Career Center and other partners

**Status:** The CSAT participated in the Career Prep Conference on September 24, 2016 that was sponsored jointly by the CSAT, CEHD, CHBS, CVPA and Career Center, and the CSAT Dean's Office budget contributed \$1,000 towards the expenses of this event. This year the CSAT sponsored three panels that consisted of Forensic and Laboratory Science, Environmental and Geosciences and Information Technology and Cybersecurity. The panelist for the Forensic and Laboratory Science panel were Lucy Ann Hochstein and alumni Dr. Max Nourredine and Steven Harvey. The panelists for the Environmental and Geosciences panel were alumni Daniel Hansen and Laken Cooper. The panelists for the Information Technology and Cybersecurity panel were David Bradshaw and alumni Keith McCammon, Gina Gallagher and Jess Astacio. We are very grateful to all of our panelists for sharing their professional expertise with our current students.

The CSAT collaborated with the RU Career Center and our liaison Ellen Taylor on the Business and IT Internship and Career Fair, September 7, 2016 in Kyle Hall.

I attended a presentation on January 20, 2017 that was made by graduate students in the M.A. in Material Culture and Public Humanities at Virginia Tech. This unique graduate degree opportunity could provide options to our graduates in Anthropological Sciences, and Dr. Urista is exploring the possibility of a memorandum of agreement with this program at Virginia Tech.

**Goal:** Support department efforts to achieve accreditation and reaccreditation

**Status:** The Department of Information Technology submitted a self-study report to pursue reaccreditation of the computer science concentration and the information science and systems degree by the Accreditation Board of Engineering and Technology (ABET). The final report from

ABET that was received on August 30, 2016 indicated that the Computer Science concentration, Information Systems concentration and Web Development concentration were reaccredited through 2022 with the summary that “no deficiencies, weaknesses, or concerns were found.”

The Department of Chemistry has submitted an application for approval from the American Chemical Society (ACS). The department received official notification from the ACS that it is scheduled for a conference with the Committee on Professional Training at the ACS national meeting in San Francisco, California on Saturday, April 1, 2017.

**- to lead the College in procuring and managing fiscal, human, and physical resources necessary to accomplish these goals,**

**Goal:** Pursue acquiring resources including faculty and administrative support positions

**Status:** During the 2016-17 academic year, searches were successfully conducted to hire an analytical chemist and an ecologist to replace faculty members who resigned in 2016, and both of these new faculty members will start in August 2017. A search is in progress in the Department of Geology to replace a faculty member who is retiring in May of 2017. A search is in progress in the Department of Information Technology to fill the tenure-track position in the M.S. in Data and Information Management degree program.

Thanks to the extraordinary generosity of President Hemphill, a classified staff position from the Office of the President has been transferred to the CSAT to provide administrative assistant support to the Departments of Anthropological Sciences, Geology, Geospatial Science and Physics as well as the Forensic Science Institute. The search for this administrative assistant is in progress, and the applications are currently being reviewed by the search committee.

**Goal:** Pursue new relationships with corporate partners and continue to pursue gifts to the CSAT

**Status:** The CSAT has been very fortunate to receive generous gifts during 2016-17. A new partner to the CSAT this year is Mr. Timothy Reyburn, President/CEO of Ticoscen, Inc. Mr. Reyburn made a very generous contribution to the Department of Chemistry of gift-in-kind evaporative light scattering detector (ELSD) equipment and his technical expertise for installing this advanced, research equipment that is valued at \$14,500.

In collaboration with the Office of Advancement, I traveled to meet with CSAT alumni and partners during 2016-17. I traveled with Robyn Porterfield on April 21 and again on May 26 with Melissa Wohlstein to visit Mr. Mark Hanna '84. Mr. Hanna is a very generous CSAT donor and charter member of the CSAT Advisory Council. His gifts include the periodic coffee table as well as gift in kind contributions of scientific equipment for the Department of Chemistry. I traveled to visit Bill Bodine at the Greater Lynchburg Trust on May 11, 2016 with Robyn Porterfield and again with Melissa Wohlstein on October 27, 2016. The Greater Lynchburg Trust has been a generous donor to the Summer Bridge Program for many years. While we were in Virginia Beach on July 19 for the alumni event to introduce President Hemphill, Melissa Wohlstein and I delivered a proposal for a gift to support the Center for the Sciences and had lunch with Skip Smith at W.M. Jordan. I traveled to visit AREVA in Lynchburg on October 6, 2016 with Melissa Wohlstein, and AREVA recently informed me that they would support the Summer Bridge Program again in 2017 with a gift of \$2,500. I also traveled with Melissa Wohlstein to visit Dominion Resources in

Richmond on October 27, 2016 to request their continued support of the Summer Bridge Program. On January 20, 2017, Melissa Wohlstein, David Horton and I met with Novozymes Biologicals to thank them for their long-standing support of the Summer Bridge Program and to ask for their continued support in 2017. I met with Ms. Julie Kern, a corporate executive from Wells Fargo Bank, at the Radford University Homecoming event on October 15, 2016 to provide her an update from the CSAT and to ask her to consider supporting the Summer Bridge Program again in 2017. Ms. Jocelyn Stephens in the Office of Advancement is currently working with Ms. Kern and will update me if there is an interest in Summer Bridge Program.

The CSAT has been very fortunate to receive a \$350,000 challenge grant from the Mary Morton Parsons Foundation in Richmond. If \$700,000 is raised by the end of April 2017, the \$350,000 grant will be awarded. Approximately \$643,184 has been raised to meet the \$700,000 challenge, and proposals have been submitted to prospective donors to raise the full \$700,000 and receive the \$350,000. A crowdfunding project to benefit the Summer Bridge Program will also be conducted in April to help with meeting the \$700,000 challenge.

I attended Roanoke Blacksburg Technology Council (RBTC) events such as the TechNite Awards on April 22, 2016 and the RBTC Fall Gala on October 28, 2016 to cultivate prospective donors for the CSAT and the ARTIS Lab. I worked with the RBTC office staff to schedule an RBTC meeting in the Center for the Sciences on the Radford University campus on May 12, 2016, and a second RBTC event was held on the Radford campus on October 11, 2016.

On July 14, 2016 Ms. Melissa Wohlstein, Dr. Jeff Pittges and I visited Mr. Jeff Henderson, a corporate executive at Hewlett-Packard in NOVA, to describe the cybersecurity curriculum and to explore potential partnerships and internship opportunities for our CSAT students at HP.

**Goal:** Support the efforts of faculty members to achieve a goal of 26 external grant submissions and 13 external grant awards and explore enhancing the efficacy of obtaining grant funding

**Status:** From July 1, 2016 through March 20, 2017, 13 external grant proposals have been submitted by CSAT faculty members based on information provided by the Office of Sponsored Programs and Grants Management. These 13 external grant proposals represent funding requests of \$2,032,981. Nine external grants have been awarded from July 1, 2016 through March 20, 2017 that represent \$582,900.

From July 1, 2015 through March 21, 2016, 14 external grant proposals have been submitted by CSAT faculty members based on information provided by the Office of Sponsored Programs and Grants Management. These 14 external grant proposals represent funding requests of \$2,579,167. Four external grants have been awarded from July 1, 2015 through March 21, 2016 that represent \$132,843. From July 1, 2014 through March 24, 2015, 17 external grant proposals were submitted by CSAT faculty members based on information provided by the Office of Sponsored Programs and Grants Management. These 17 external grant proposals represented funding requests of \$2,880,964. Nine external grants were awarded from July 1, 2014 through March 24, 2015 that represented \$433,081. From July 1, 2013 through March 24, 2014, 17 external grant proposals have been submitted by CSAT faculty and staff based on information provided by the Office of Sponsored Programs and Grants Management. These 17 external grant submissions represent funding requests of \$3,913,708. From July 1, 2012 until March 28, 2013, there were 17 external grant proposals submitted worth \$2,378,744. Six external grants have been awarded from July 1, 2013 through March 24, 2014 that represented \$293,656 in funding. From July 1, 2013 until March



28, 2013, four external grants were awarded that represented \$107,346 in funding.

**Goal:** Explore impediments to faculty research productivity and explore how faculty research and engagement in high impact pedagogical practices can be supported

**Status:** At the College of Science and Technology faculty meeting with President Hemphill on August 23, 2016, some faculty members publicly expressed concerns and frustrations with administrative processes at Radford University that have impeded their research productivity. President Hemphill responded immediately to these concerns by requesting a report that would examine the concerns expressed, offer comparisons of faculty research support at other institutions and provide recommendations for actions that could reduce faculty frustrations with processes involved in conducting scholarly research at Radford University. I submitted a progress report to President Hemphill on October 24, 2016 and the full completed report to President Hemphill on February 27, 2017. President Hemphill has reviewed the report and provided it to his Presidential Cabinet members for review and discussion.

The summary of my report stated that many of the concerns and frustrations expressed as obstacles to faculty research productivity can be managed through communication and support. The report may also be useful to inform the strategic planning that is currently in progress in committees across campus to provide more support for faculty research.

**- to represent the college, its goals and needs to other external as well as internal constituencies, and**

**Goal:** Communicate through the CSAT newsletter and alumni newsletter, CSAT website, CSAT Facebook page and by meeting with students, departments, faculty, alumni and donors

**Status:** The CSAT newsletter *From the Dean's Desk* that is written and designed by David Horton continues to be successful in communicating news to CSAT faculty, staff and friends. David has expanded *From the Dean's Desk* from a four page newsletter to nearly a magazine that often exceeds fifteen pages and is content, graphic and photographic intensive. Editions of *From the Dean's Desk* are made possible by the faculty, staff and students of the CSAT who report their successes to David for inclusion in the newsletter. David has also enormously enhanced the CSAT Facebook page and website by very frequent updates that feature articles, videos, photographs and links to CSAT faculty and students activities. David also designed the graphics and content sent to CSAT donors and alumni in December of 2016 as a "CSAT Million Dollar Moonshot" fundraising effort to fulfill the conditions of the Mary Morton Parsons Challenge Grant.

During 2016-17 I met with several CSAT departments to discuss their enrollment trends as well as other department concerns. I also meet with faculty at their request, and I conduct an open door policy for listening to faculty input and for hearing faculty concerns.

**Goal:** Support efforts to engage alumni in the work of the CSAT

**Status:** The College of Science and Technology alumni events during the 2016-17 academic year included the annual meeting of the CSAT Advisory Council that was conducted on October 14, 2016. The annual CSAT Advisory Council meeting in 2016-17 was exceptional because the highlight of the event was the ribbon cutting and dedication ceremony of the Center for the Sciences. We also unveiled the named gifts of two of our Advisory Council members, the Artis

Computing Laboratory for the Biological Sciences from Dr. Pat and Ms. Nancy Artis, '73 and the periodic coffee table from Mark Hanna, '84. The meeting included a tour of the Center for the Sciences and a discussion of ideas to meet our Mary Morton Parsons Challenge Grant goal with Vice President for Advancement Melissa Wohlstein.

I participated in all six of the alumni receptions across Virginia that introduced President Hemphill, and these events were conducted in Reston on July 13, Richmond on July 14, Virginia Beach on July 19, Roanoke on August 11, Riner on August 14 and Abingdon on August 17. I also participated in the alumni reception in Raleigh on September 22 where I met three alumni of the CSAT at the event. I also participated in the Meet the Deans event at Homecoming on October 15, 2016, and I participated in the Alumni and Volunteer Summit on February 17, 2017.

Dr. Jeff Pittges and I had dinner with Keith McCammon from Red Canary on September 23 to discuss a potential partnership with the Applied Research Center, and Dr. Pittges and I had lunch with Dr. Pat and Ms. Nancy Artis '73 on November 4 to provide them an update on the progress of the Applied Research Center. I also had lunch with two of my former students who were visiting campus. Dr. Racquel Collins-Underwood '01 is currently an Assistant Dean at St. Jude Children's Research Hospital, and she joined me on campus for lunch on September 27. Dr. Jessie Benson '98, has moved back to the New River Valley and is interested in teaching UNIV 100 here at Radford this fall, and she joined me for lunch on campus on February 28, 2017.

**Goal:** Represent the CSAT in Strategic Planning and Budget Planning efforts of Radford University

**Status:** I participated in the Budget Planning Summit on September 9, 2016, and I serve as a member of the Budget subgroup of the Strategic Planning Task Force. I attended the Strategic Planning Task Force meeting on November 11 as well as the Strategic Planning Forum on December 1, 2016. I have attended all of the Budget subgroup meetings that have been conducted, and the two meetings to date were on December 9, 2016 and January 27, 2017.

**- to promote the overall excellence and welfare of the University**

**Goal:** Support positive morale among faculty and staff across the CSAT by listening to faculty concerns and soliciting faculty input in decisions affecting the CSAT

**Status:** I frequently met with CSAT faculty to discuss issues ranging from individuals with specific requests to concerns from departments during 2016-17. The meeting agendas included requests for resources, concerns raised by students and parents, performance evaluation and building renovation issues. I also write many letters of support for many faculty members to assist in their applications for grant proposals and nominations for awards. I met with Facilities Management and a faculty member on January 30, 2017 to discuss ideas for campus vegetation and trees that could be used in teaching. I also met with several offices on July 25, 2016 and again on January 31, 2017 to explore creating a Geohazards Research Center. I also planned a meeting with a faculty member in the Mathematics and Statistics Department, the Registrar and the SACSCOC liaison on March 7, 2017 to explore some questions about curriculum and teaching load in the Mathematics and Statistics Department.

I consult the CSAT Leadership Team frequently to discuss issues affecting the CSAT faculty, staff and students, and I highly value and respect the input of the CSAT Leadership Team in arriving at

decisions through collaborative leadership and shared governance.

**Goal:** Support efforts to enhance the academic reputation of the CSAT and Radford University

**Status:** The academic reputations of the CSAT and Radford University are enhanced by the achievements of the faculty and students of the CSAT. I am privileged to represent the CSAT and to share the achievements of the faculty, staff and students. I was deeply honored to be asked by President Hemphill to serve as chair of the Provost Search Committee. It was a privilege to work with the members of the search committee, and I was very excited when Dr. Graham Glynn was announced as the next provost of Radford University. I am confident that Dr. Glynn and President Hemphill will continue to enhance the academic reputation of Radford University.

I met with Ms. Lauren Marshall, Legislative Aid for Senator Mark Warner on November 9, 2016, to discuss the strengths of the CSAT, and I asked Ms. Marshall to thank Senator Warner for his efforts to create the Virginia Academy of Science, Engineering and Medicine. On January 5, 2017, I met with Dr. Cynda Johnson, Dean of Virginia Tech Carilion School of Medicine, at the invitation of President Hemphill and Dr. Donna Boyd. Dr. Boyd and I provided Dean Johnson a tour of the Center for the Sciences, and we discussed a meeting with the VT Carilion School of Medicine Admissions Dean and our CSAT pre-medical advisors.

I also meet with prospective partners across campus to represent the CSAT and to explore potential synergies. On January 18, 2017, I met with Steve Recca, Director of Partnership Programs in the Center for Homeland Defense and Security of the Naval Postgraduate School, at the invitation of Dean Hawkins. I also met with Rick Schwein at the invitation of Dean Hawkins on February 13, 2017 to assist him with completing a request for information to inform a Strengths, Weaknesses, Opportunities and Challenges (SWOC) analysis related to the Radford University Security Studies Initiative that was commissioned by Dean Hawkins. On February 2 and February 10, 2017 Dr. Jeff Pittges and I met with Dr. Stephen Owen and Dean Hawkins to explore submitting a topic to the National Seminar and Tabletop Exercise Series for Institutions of Higher Education (NTTX) 2017 National Event. Based on our discussions, Dr. Owen submitted a medium-term power outage scenario that incorporated a cyber threat on February 24, 2016 as the first step towards Radford University being selected as a host site. Hosting this tabletop exercise would be a collaborative effort between the CSAT and CHBS that would enhance the national reputation of Radford University.

I provided a tour of the Center for the Sciences to the New River Valley Economic Alliance on June 15, 2016, and they conducted their meeting that evening in the Center for the Sciences. I also attended a New River Valley Economic Alliance meeting at Virginia Tech on September 21, 2017. President Hemphill, Provost Scartelli, Dr. Jeff Pittges and I also assisted the New River Valley Economic Alliance with encouraging a technology company to locate a facility in the New River Valley at a meeting on November 8, 2016. I also participated in the Radford University MLK Day of Service on January 16, 2017 at the Feeding America Southwest Virginia warehouse in Salem, Virginia, and I made a presentation at the invitation of Dean Colley on the Science Days program at the Superintendent's Breakfast on December 8, 2016 that was sponsored by the College of Education and Human Development. I also participated as a table host at the Career Center Protocol Dinner on February 22, 2017 to contribute to the efforts of our students to enhance the reputation of Radford University.

The academic reputation of the CSAT is enhanced every time the CSAT faculty and students accomplish our teaching, research and service missions. Teaching successes include innovative pedagogical approaches such as flipping the classroom and innovative assessment strategies that inform our teaching effectiveness. Research successes include faculty members who mentor student research and supervise their research presentations at national conferences and meetings. Service and outreach successes include all the science, technology and mathematics education and outreach events that are possible through the work of the CSAT faculty and staff. These events include but are not limited to Science Days sponsored by the Science Alliance of Geology, Physics, Chemistry, Biology and Anthropological Sciences. The research conducted by Dr. Joy Caughron and Dr. Jay Caughron in the CHBS with students at the Las Piedras Biodiversity Station in Peru vastly enhanced the academic and scientific reputation of Radford University and the CSAT. The research on unmanned aerial vehicles and their applications to geohazards and geological research by Dr. Skip Watts and Mr. George Stephenson as well as the development of the Unmanned Aerial Center in the Department of Geology have enhanced the academic reputation of the Department of Geology and the CSAT. The reputation of the Chemistry Department is enhanced by faculty members and students who participated in National Chemistry Week during October 16-22, 2016. The academic reputation of the Department of Mathematics and Statistics is enhanced by Dr. Wei-Chi Yang, who serves as Editor-in-Chief of the *Electronic Journal of Mathematics & Technology* and by Dr. Agida Manizade, who serves as the Editor-in-Chief of the *Virginia Mathematics Teacher*.

Other educational outreach events sponsored and supported by the CSAT faculty include the AMC 10/12 Mathematics Competition that was coordinated by faculty in the Department of Mathematics and Statistics. Another outreach and recruiting event for prospective students this spring was the Blue Ridge Highlands Regional Science Fair on March 4 and 5 that is co-directed by Dr. Christine Hermann and Dr. Kimberly Lane in the Department of Chemistry. CSAT faculty members Dr. Karen Powers, Dr. Jack Brockway, Dr. Neil Sigmon and Dr. Steve Fawthrop served as judges for the SuperMACC Tournament that was sponsored by the CSAT and conducted on Monday, March 20, 2017. Many CSAT faculty members are planning presentations for the Science Exploration Day outreach event on Saturday, April 8, 2017.

The academic reputation of the CSAT is also promoted to prospective students in grades 1-6 through Camp Invention that was conducted last summer during June 20-24, 2016. Summer Bridge Program enhances the academic reputation of the CSAT for high school girls. Summer Bridge Program was conducted from July 10-15, 2016, and the CSAT faculty members who taught courses in Summer Bridge Program were Dr. Rhett Herman and Ms. Brenda Hastings, Dr. Beth McClellan and Mr. George Stephenson, Dr. Georgia Hammond and Dr. Kimberly Lane, Dr. Hwajung Lee, Dr. Cliff Boyd and Dr. Donna Boyd. Finally, Dr. Prem Uppuluri, Dr. Darrell Parsons and members of the Radford University Cyber Defense Club enhanced the reputation of the Department of Information Technology and the CSAT when they placed second in the Virginia Cyber Cup competition that was conducted at Virginia Military Institute on February 25, 2017.

### **Professional Development for 2016-17**

I participated in online webinars to enhance my professional development during 2016-17. I also taught BIOL 310-07 during the fall semester of 2016 as my annual contribution to the teaching mission of Radford University.