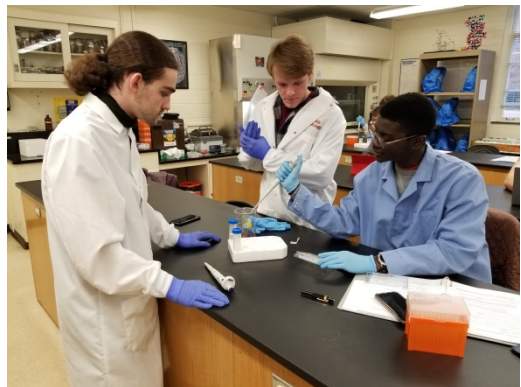


News from the Hampden-Sydney Sciences 2017-18

Biology—by Alexander J. Werth

The Biology Department is offering several new courses in 2018, including Biol 333 (Neurobiology), Biol 354 (Community Ecology), and Biol 385 (Tissue Engineering), as well as Biol 205 (Human Anatomy & Physiology II). These reflect the department's move toward more career-oriented preparation, as well as more project- and inquiry-based courses, reflecting H-SC's overall move toward experiential learning. For example, students in the



Shawn Gillikin '20, Hunter Lee '19, and Persus Akowuah '18 hard at work in Dr. Fischer's Introduction to Tissue Engineering class

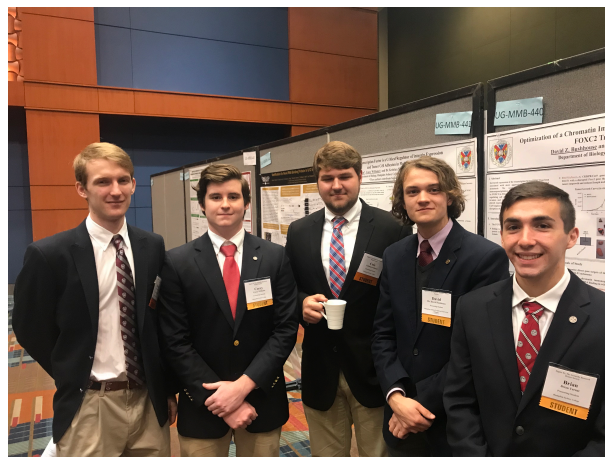
tissue engineering course are engaged in an inquiry-based project determining which over-the-counter supplements will inhibit or promote skeletal muscle proliferation and maturation, as well as the effects of testosterone and creatine on skeletal muscle maturation. **Professor Rachel Goodman** has been busy strengthening the College's Environmental Studies Minor and working with **Professor Alex Werth** toward a possible Environmental Science major. This is also the first year of the new Biochemistry and Molecular Biology major.

As is the case every year, many Biology majors are conducting independent research projects and presenting their results at H-SC and at regional and national conferences (typically accompanied by **Professor Mike Wolyniak** and/or **Professor**

Kristian Hargadon). This includes a number of seniors, several of whose work is presented in this journal. **David Bushhouse '19, Coleman Johnson '19, Brian Tarnai '20, and Corey Williams '19** all traveled to the Sigma Xi National Student Research Conference in Raleigh; several students presented at the Sigma Xi meeting held at

H-SC last fall. **Tyler McGaughey '18 and David Bushhouse '19** went to the American Society for Cell Biology/European Molecular Biology Organization Annual meeting in Philadelphia. **Bobby Jackson '18** went to the Southern section of the American Society of Plant Biologists meeting in New Orleans, and **Dakota Reinartz '18 and Sean Walden '18** traveled to the American Society for Biochemistry and Molecular Biology Annual Meeting in San Diego. David Bushhouse presented his work at the Virginia Academy of Science Undergraduate Research Meeting, where he was awarded a Virginia Academy of Science Undergraduate Research Grant to continue his studies on FOXC2 gene regulation in melanoma; at the same meeting, Prof. Hargadon delivered a keynote address entitled "Tipping the Balance in the War on Cancer: How Insights into the Basic Biology of Tumor Progression are Revolutionizing Cancer Therapy."

Many other students have been conducting independent research in 2017-18, either as a semester-long project or in some cases as the culmination of a multi-year project—as is true for many graduating seniors. **Jamie Ingersoll '18** continues his neurobiology work with **Professor Erin Clabough** on growth of dendritic spines in neurons. Prof. Clabough also supervised **Kyler Vela '18's** work at the Hatteras Island Ocean Center last summer. Tyler McGaughey continues his research with **Professor Kristin Fischer** investigating static strain on skeletal muscle cells embedded in a hydrogel. Prof. Fischer continues to supervise **Cody Smith '18's** research on concussions in baseball players. Sean Walden is studying antifungal properties of organic extracts of hop plants with **Professor Ed Lowry**, and **William Woods '18** is conducting work on clonal propagation of hops and its potential to invade the James River watershed, also with Prof. Lowry. **Persus Akowuah '18** continues his work with Prof. Lowry on ecological competition of invasive *Centaurea stoebe* with native plants of central Virginia; his presentations include a talk to a local garden club. Persus is also conducting a



Brandon Knouse '19, Corey Williams '19, Coleman Johnson '19, David Bushhouse '19, and Brian Tarnai '20 presenting their research at the Sigma Xi National Student Research Conference in Raleigh, North Carolina.

histology project on a callosity from the head of a North Atlantic right whale, with Prof. Fischer and Prof. Werth. **Adrian Cothren '19** continues his baleen research with Prof. Werth, focusing on effects of oil and ocean acidification on baleen growth and strength. Many other students, including a number of those named above (who presented at conferences), are working on projects supervised by Prof. Hargadon and Prof. Wolyniak.

Prof. Wolyniak continues to direct H-SC's Honors Program, which now involves several seniors pursuing departmental "distinction" in biology. As members of the inaugural class of Honors Senior Capstone students, **Luke Bloodworth '18, Bobby Jackson '18, Tommy Parks '18, and Hayden Robinson '18** have been doing year-long research projects culminating in a final presentation and the receipt of College Honors. Among the students scheduled to give Department Distinction presentations at the end of the Spring 2018 semester are **Drew Elliott '18, Jamie Ingersoll '18, Tyler McGaughey '18, PJ Mollica '18, Dakota Reinartz '18, and Sean Walden '18.**



Tyler McGaughey '18, Dr. Mike Wolyniak, and David Bushhouse '19 triumphant atop the "Rocky stairs" at the Philadelphia Museum of Art while attending the Annual Meeting of the American Society for Cell Biology and European Molecular Biology Organization

In other Biology Department news, Professors Hargadon and Wolyniak both won prestigious "Programs that Work" Awards from the Virginia Mathematics and Science Coalition, for their research-based lab modules incorporating cancer research in Biology 201: Genetics and Cell Biology and hops research in Biology 151: Principles of Biology Laboratory, respectively.

Prof. Hargadon continues his work investigating melanoma-associated immune suppression and factors that regulate melanoma metastasis, with support from his \$100,000 grant from the Jeffress Trust Awards Program in Interdisciplinary Research. Among his recent publications is an invited review article in the journal *Frontiers in Immunology*

entitled "Strategies to Improve the Efficacy of Dendritic Cell-Based Immunotherapy for Melanoma."

Prof. Wolyniak has also been teaching a hybrid live/online course in Genomics and Bioinformatics in conjunction with a collaborative NSF grant called the Coalition for Undergraduate Computational Data-enabled Science & Engineering (CDSE) Education (involving a consortium of H-SC, Adams State University in Colorado, Embry-Riddle Aeronautical University, and Bethune-Cookman University). The grant uses material from the HHMI SEA-PHAGES program to annotate bacteriophages as part of a national initiative to better understand phage genetics and evolution, and thus to teach "big data"-type classes at smaller colleges. H-SC and Bethune-Cookman students are working together on this project in the course. Prof. Wolyniak has also applied for several other grants; he continues his work as a Biology Councilor for the Council for Undergraduate Research (CUR) and is beginning his tenure as part of the National Conference on Undergraduate Research (NCUR) Oversight Committee, the group charged with selecting and facilitating NCUR host institutions.

Chemistry—by C. William Anderson

The summer of 2017-18 found the Chemistry Department continuing to find ways to support student exploration. While we had to abandon our plans for an Internuclear Space Station to be located just on the other side of the moon, we did manage to keep pace with other long-term projects. Let's start with efforts that cut across the entire department before addressing individuals.

The academic year began with a replacement of the JEOL 400 MHz multinuclear NMR. We kept the superconducting magnet, but replaced all other hardware and software components. As an added bonus, we incorporated an autosampler to help with throughput. Every student also has a personal copy of the Delta 5 software so they can do data workup on their own computers. The new system shortens training time and allows us to run more spectra. This "several hundred thousand dollar" addition was made possible through the generosity of the Spaulding Professorship Endowment. Students, staff and faculty of the chemistry department are very grateful for this advance.

We are continuing to develop the pattern of courses and laboratories to support the new major in Biochemistry and Molecular Biology (BCMB). This major is not housed in one department, but supported by both the two obvious participants. We have an initial squad of a dozen junior and senior participants in the program that recognizes a long-standing student interest that goes well beyond getting a minor in one of the participating departments. As a result, enrolment in Physical Chemistry, Advanced Laboratory and Biochem II are moving up.

This year's outing to the Pittcon International Conference and Expo for seniors taking Instrumental Analysis sent six students to Orlando (**Gui Guimaraes '18, Grayson Cogan '18, Eric Bowen '18, Hayden Dougherty '18,**

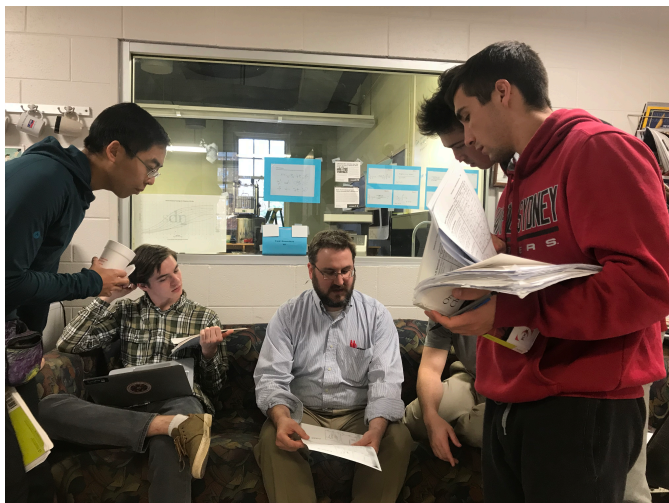
Andres Garcia '18 and Chance Hastings '18). We are sorry they did not get the full ice and snow that the February conference can bring, but students got to see dozens of presentations (like Dr. Jeremy Nicholson's Informatic molecular medicine), posters as well as explore all the new laboratory instrumentation and techniques. We were fortunate to talk or have dinner with four H-SC alums there (Mitch Owens '14, Bob Rogers, and Drs. Rob Lemert and Trey Henry) who each were insightful, helpful and interested in helping our soon-to-be-graduates. Additional thanks to the gracious alums who funded this important outing.

Mrs. Chemistry 2017-18 (**Beverly Hines**) continued to attempt to organize students and faculty while making great strides with stockroom chemical safety. Our "Spring" cleaning resulted in a significant improvement in the state of the stockroom holdings and we are all healthier and more functional. The several trips and pallet-loads of reagents can only be described as "historically significant".

Dr. Paul Mueller spent the Fall '17 semester on sabbatical investigating pottery glazed with an eye towards the role of barium leaching. He was able to visit Antoine Lavoisier's laboratory in France. That is precisely the kind of thing that can add to the insight expected for studying chemistry in a liberal arts atmosphere. It is already paying benefits in his "Chemistry in Art" course this semester. His advanced laboratory students are continuing to explore synthesis of organic ligands (**JT Taylor '18**) and LC-MS investigations of the complex mechanisms followed in the synthesis of the family of mauvines (**Hunter Lee '19**).

Dr. Bill Anderson guided advanced lab students in fabrication of functionalized carbon nanotubes (Hayden Dougherty), electronics upgrading of spectrometers (Grayson Cogan '18 and **Hunter Weiland '19**) and benchtop DNA sequencing with Oxford Nanopore Minlon sequencers (Gui Guimaraes '18 and **Jason Pough '19**). In the classroom, he gave a class in Atmospheric modelling and measuring to a mixed audience of students in Gilmer hall at H-SC and students at Adams State University in Alamosa, Colorado, as a teleconference. This exploration was a part of an NSF project - Engaged Student Learning: Coalition for Undergraduate Computational Data-enabled Science & Engineering (CDSE) Education where students interfaced sensors to Raspberry Pi computers for deployment in atmospheric and terrestrial settings. They also learned digital simulation of mass transport and python coding of those models on the Raspberry Pis. His blood pressure is returning to normal after returning from the Pittcon trip with the same number of students that left. He continues efforts on his cinematic masterpiece "A day in the Life of the Blue Couch" (working title).

Soap continues to provide the bubbles to **Dr. Kevin Dunn's** chemistry efforts. Responses to his now annual talks to national audiences of handcrafted soapmakers regularly find their way into social media as that community constantly expresses their thanks for the professional scientific efforts to deal with issues they (but not large multinational manufacturers) have. In the two terms this year, Dr. Dunn has led two teams into developing methods of determining the components of soap residue on skin. Chance Hastings '18, **Brandon Knouse '19**, **Reed Mingione '19**, and **Mark Mason '18** focused on the methodology of sample acquisition and spectroscopic identification, while **Brian Goodwyn '18**, **Noah Frazier '18**, and **Eric Bowen '19** each developed proficiency in a different sample material determination by GC-MS.



Dr. Nick Deifel leads an informal discussion group to help students in his Fall 2017 Organic Chemistry class

Dr. Nick Deifel capped off his year with a recommendation that he be granted tenure and promoted to Associate Professor. That is a good year for anyone. He maintained his efforts for departmental outreach with events like Boy Scout merit badge events and demonstrations of how chemical methods play a role in forensic investigations. In the classroom, he is developing a class on the rhetoric of science with Dr. Mike Wolyniak (Bio) and Dr. Trey Thurman (Phy) within the rhetoric department. In the lab and using his own hands, Dr. Deifel published (with R. G. Surbella III, L. C. Ducati, J. Autschbach, C. L. Cahill) "Thermochromic uranyl isothiocyanates: Influencing charge transfer bands with supramolecular structure." in *Inorganic Chemistry*, and as a Part of a special issue on *Thermodynamics of Nuclear Materials* in *J. Chem. Thermodyn.* with C. L. Cahill, D. Reusser, L. Zhang, and A. Navrotsky, "Thermochemical properties of U(VI) hybrid materials containing uranyl tetrachloride anions". He has focused his advanced laboratory students around classes of Schiff base ligands with specific

symmetry or ligand Lewis base atom identity, etc. Gui Guimaraes '18 has been working all year on synthesizing

and characterizing one of these unique groups, a tetrudentate antimicrobial with a 7 step synthetic protocol. Hayden Dougherty '18 and Andres Garcia '18 are currently mid-synthesis.

Dr. Rupak Dua's interests have continued to expand the horizons of our chemistry students. His expertise in bioengineering materials has led to advanced lab projects that focus on materials that will need to reside and interact with the human body. His direction of student projects has included the surface modification of titanium for the purpose of biocompatibility with muscles and prevention of bacterial growth (Drew Elliott '18). He also guided 3D printing of structures intended as spinal support cages (Brian Goodwyn '18, Eric Bowen '19). These ideas are spread throughout the students via the weekly Friday seminars. While all the students have an understanding that medical devices need to have certain properties, Dr. Dua gives them the link between the chemistry they know and the desired properties for these devices.

Dr. Herbert J. Sipe has continued to shoulder the mantle of Department Chair. Please don't let anyone tell him he has any other option. He has stayed on top of the acquisition and installation of the NMR and was able to get it in and flying before the start of classes in the fall. That was not easy. Dr. Sipe plays the role of crow's nest occupant for the faculty as a whole, alerting us to articles or discussions with impact on the greater educational endeavor. In the lab, his students are exploring one of three areas: Silyl chemistry, ESR monitoring fast flow kinetics and instrument modification. This year, he took advantage of the new NMR spectrometer to do ^{29}Si NMR (Bobby Jackson '18), did the fast-flow kinetic observation of the anti-malarial artemisinin (Chance Hastings '18) and construction of a variable temperature sample chamber for the ESR spectrometer (**Zach Smiley '19**). Dr. Sipe continues to investigate aspects of a new science facility at HSC. New Building? Refurbish Gilmer? These are complex questions that require revisiting assumptions and reevaluating usage.

Mathematics and Computer Science—by Rebecca L. Jayne

This year, we have three students completing Senior Honors Capstone projects.

Ryan Yost '18 is working with **Dr. Paul Hemler** on parallel computing. They investigated an inexpensive parallel computer on a chip called the Epiphany. It has 16 parallel processors and two ARM processors which control the parallel processors. The single advantage of this system is that it minimizes power usage and is far more efficient than the massively parallel graphics processors. Their investigation revealed minimal software support for this system and in the end they found its capabilities to be extremely limited. They then turned their attention to the massively parallel graphics cards made by Nvidia. These cards have been designed to perform general purpose parallel computing in addition to speeding up the render of three-dimensional scenes. They found there is significant software support for these cards and a general purpose language CUDA has been implemented that executes on the cards. Their project is now focusing on utilizing CUDA and the graphics card to improve of speed of the convolution operation. They are determining if 2D spatial domain convolution executes as quickly as element by element multiplication in the frequency domain as this is not true when implementing the processing on a serial (conventional) computer.

Wes Kuegler '18 is using software to design a small scale artificial neural network, then realizing the network in hardware using resources from the Physics department. In doing so, Wes hopes to become familiar with the exciting interdisciplinary field known as “neuromorphic engineering”.

Carlo Anselmo '18 is completing his project in mathematical music theory this spring. Carlo's project has focused on mathematical methods for composing and analyzing music. Working with Professor Marcus Pendergrass, he has designed functions and algorithms that are both mathematically interesting and musically meaningful. One of his mathematical results is an explicit solution for a class of substitution scheme problems. For a simple example, suppose we start with two symbols, call them a and b . Let's replace each a by an ab , and each b by a ba . This results in two new symbols ab and ba . Now do the same replacement on them, resulting in $abba$ and $baab$. Continuing this process indefinitely results in two infinite sequences of symbols, the first of which begins as $abbabaabbaababbabaababbaabbaababbabaababbabaabbaabba . . .$

What is the symbol in position 1,000,000 of this sequence? Carlo's work gives a solution to this problem – and many others like it – without having to calculate the 999,999 symbols that go before it. The musical application is to have the symbols represent short musical snippets or motifs. Substitution schemes then give ways of generating long, complex musical compositions from short musical motifs. These kinds of methods can also be used to uncover hidden structures in existing pieces of music.

Carlo's project will culminate in a lecture and concert in mid-April, in which he will explain his mathematical results and give world-premiere performances of original compositions he has made using these techniques.

Dr. Marcus Pendergrass has also been working on another project. Consider two candidates running for office. The first is polling at 52% in the electorate, while the second has 48%. How likely is it that the first candidate will win the election? How much would you be willing to wager on her victory? It turns out that these questions are related, and Dr. Pendergrass addressed them in his report “From Poll Results To Win Probabilities: A Game-Theoretic Approach To Election Prediction,” presented at the Joint Mathematics Meetings in San Diego on January

11, 2018. Drawing on research done during his recent sabbatical, Dr. Pendergrass shows that, while there are many ways to assign consistent win probabilities based on poll results, some ways are better than others when the pollsters are forced to back up their predictions monetarily in a betting game. Dr. Pendergrass presented results from his sabbatical research that identify the optimal way to assign win probabilities in a special case of this betting game. Currently, he is working on extending these results to the general case.

Physics and Astronomy—by Matthew D. Goodson

The H-SC Physics and Astronomy Department was active in research both locally and globally.

Dr. Stanley A. Cheyne and **Cecil Tiblin '18** attended the 5th Joint meeting of the Acoustical Society of America and the Acoustical Society of Japan in Honolulu, Hawaii. Cecil presented a paper, "Phase speed measurements of a bubbly liquid in impedance tubes using a transfer function technique," co-authored with Dr. Cheyne and **Dr. Hugh O. Thurman III**. The essence of the paper is the exciting result of measuring a sound speed of less than 2 meters per second at the single bubble resonant frequency. This is perhaps the lowest sound speed ever measured in any medium.

During Dr. Cheyne's Fall 2017 sabbatical he did a theoretical investigation of acoustic cavitation. Cavitation is the creation and collapse of a vapor bubble. During the collapse, temperatures and pressures increase rapidly. Acoustic cavitation is when high amplitude negative-leading ultrasonic sound causes vapor cavities to grow. This is immediately followed by a high amplitude positive wave which causes the collapse. It has been predicted that the combination of high pressure and temperature could be sufficient to fuse tritium and deuterium. In this fusion reaction, neutrons are emitted. Dr. Cheyne did some preliminary cavitation experiments and is now in the process of building a neutron detector.



Cecil Tiblin '18, and Dr. and Mrs. Cheyne at the ASA Meeting in Hawaii

Dr. Steven D. Bloom is currently working with students **Grayson Cogan '18** and **Ryan Yost '18** on automation of the Hampden-Sydney Observatory using the Astronomer's Control Panel software. The intention is to ultimately use the telescope to conduct an automated survey of extrasolar planets. He is also interested in studying the origin of gamma-rays from quasars both through multiwavelength observations and modeling. In 2016, Dr. Bloom published the book *Physics and Astronomy in Science Fiction* and is currently working on a related follow-up project.

Dr. Walter McDermott was appointed as Dean of the Faculty in the Fall of 2017. He continues to teach in the department and conduct experiments in Mössbauer spectroscopy.

Dr. Hugh O. Thurman III continues his work with several students on research projects during the summer and semester. **Wes Kuegler '18** and **Cody Smith '18** are working on interdisciplinary fellowship projects. Wes is investigating how to mimic neurons electronically with the ultimate goal to be able to perform pattern recognition, and is advised by Dr. Thurman and **Dr. Tom Valente** of the Mathematics and Computer Science Department. Cody is investigating traumatic brain injuries with an ultimate goal of possibly understanding CTE, and he is supervised by both Dr. Thurman and **Dr. Kristen Fischer** of the Biology Department.

Jacob Gray '18 and **Zachary Shermer '18** are completing Independent Research courses under the direction of Dr. Thurman. Jacob is continuing his experiment on trying to measure the Rayleigh scattered depolarization from the 7P doublet in Cesium. Zach is continuing his investigation into concrete with specific emphasis this semester on applications toward safety as a shield for gamma radiation similar to a nuclear power plant.

Cecil Tiblin '18 is completing Departmental Distinction research. Cecil is focused on increasing the efficiency of solar cells by monitoring their temperature dependence and then developing several techniques to mitigate these losses.

Matt Regan '18, Jake Eheart '18, Lee Penninger '19, Jake Burns '18, and Lane Winsett '19 are conducting advanced lab research projects. Matt is working on developing a small scale version of a complete inverter and transformer system to be applied to a solar panel. Jake is working on building a physical model of a Trombe wall and then conducting efficiency tests on it. Lee is working on understanding the different nuclear radiation detectors. Jake is continuing his research into Faraday waves with the ultimate goal to model the wave patterns generated by alligators seen in nature during their mating rituals. Lane is working on developing two mechanisms to be used on testing the quality of water, namely the turbidity and the electrical conductance.



Zach Shermer '18, Ryan Yost '18, and Grayson Cogan '18 at GBO in West Virginia.

Dr. Jonathan W. Keohane has authored an E&M textbook with collaborator J.P. Foy, titled *An Introduction to Classical Electrodynamics*. The text is currently out for final review at Yale University Press. In addition, Dr. Keohane is serving as the Problem Master for the United States Invitational Association of Young Physicists Tournaments (usaypt.org). In the Fall, Dr. Keohane took several astronomy students to visit Green Bank Observatory in West Virginia. The students learned about radio astronomy and the wide array of telescopes needed to observe across the electromagnetic spectrum. In October, Dr. Keohane and **Dr. Matthew Goodson** also attended the North Carolina Astronomer's Meeting at Guilford Tech Community College in Jamestown, NC with three students: **Zach Shermer '18, Grayson Cogan '18 and Ryan Yost '18**. The students met with Dr. John Mather of NASA Goddard, senior project scientist on the James Webb Space Telescope. Dr. Goodson presented a poster on "A Chemical Clock for Massive, Pre-Stellar Cores," which highlights his simulations of interstellar chemical processes and compares to ALMA radio observations.



Dr. Keohane, Zach Shermer '18, Ryan Yost '18, Dr. John Mather, Grayson Cogan '18, and Dr. Goodson at the NC Astronomer's Meeting. Dr. Mather is the senior project scientist on JWST.

The Physics and Astronomy Department welcomed **Dr. Matthew D. Goodson** as Visiting Assistant Professor in 2017-2018. Dr. Goodson received his PhD in computational astrophysics from UNC Chapel Hill in May of 2017, and he is teaching courses in Modern Physics, Computational Physics, and Thermodynamics. He is currently working on modeling star formation by performing fluid simulations of supernovae and examining the effect of magnetic fields and dust dynamics.

Dr. Goodson also spoke on "Processes in Star Formation" at the Staunton River Star Party in

October. Hosted by the Chapel Hill Astronomical and Observational Society (CHAOS), the Star Party hosted over 100 amateur astronomers in a certified International Dark Sky Park.

Finally, the Department began the new Engineering Physics major. There are currently twelve students seeking a major in the new program, which includes several new courses. The program provides a solid foundation for students seeking further education in Engineering programs.

Psychology—by Ivo I. Gyurovski '09

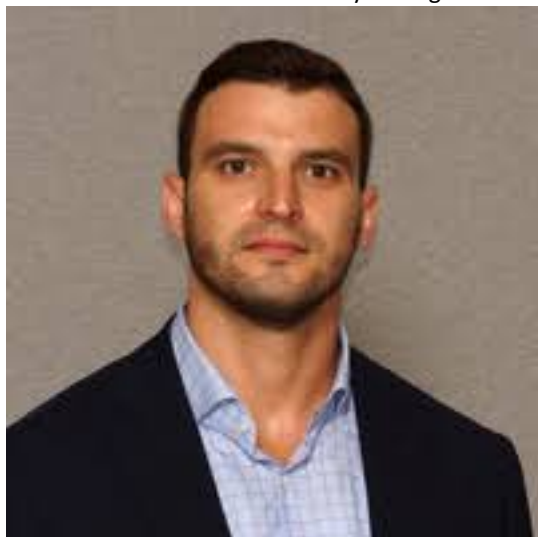
With the fall semester over, and the spring semester in full swing, it is an opportune time to share news about the endeavors of the H-SC Psychology Department with students, faculty, staff, alumni and friends of the college.

Lee Hamlet '18, Chandler Shaheen '18, Jacob Fontana '19, and Austin Fockler '18 earned authorship on a research poster that was accepted for presentation at the annual meeting of the Eastern Psychological Association in Philadelphia March 1-3, 2018. They will travel with **Dr. Dan Mossler** to the conference where they will present their research project that focused on the relationships between digital media use and critical thinking in college students. The 124 male and female

students in their sample reported spending almost two hours each day using social media (Facebook) and over three hours on their cell phones talking and receiving over 100 texts each day. These data are consistent with other published reports about usage by college students. Ninety-two percent of these students reported texting while driving, while 82 percent reported occasionally using their cell phones during class and 51 percent reported occasionally surfing the Internet during class. First year students spent significantly more time each day using digital media (both in and out of the classroom) and less time studying compared to third and fourth year students. They found that social media and cell phone use, and especially heavy use, was negatively correlated with both critical thinking and grades in college. Cell phone use was positively correlated with hours spent each day studying and hours spent each day on the computer providing further evidence of attempts at multi-tasking by these college students.

The department has also added new course offerings. Eating recently has become the latest—and an especially popular—form of entertainment, and cities such as Richmond are now known as food destinations. With all this attention on food and eating, it is only natural that they become the focus of academic investigation. **Dr. Herdegen's** fall semester special topics course, *Psychology of Hunger, Eating, and Food*, looked at the wide range of psychological, neurological, cultural, and even economic factors that influence our experiences of hunger and thirst, and how, why, and what we choose to eat. Using readings from a wide range of sources and hands-on (or perhaps more correctly, hands-to-mouths) experiences, the students explored controversies associated with our relationship to food, trying out a variety of new and often challenging foods, and even being inspired to pursue their own independent research on related topics. The successful and well-received course will be offered again in the fall semester of 2018.

The Department of Psychology hosted a public presentation by Dr. Donna K. Broshek entitled “Keeping Your Head in the Game? Sports Concussion Diagnosis, Recovery, and Current Controversies.” Dr. Broshek is Director of the Neurocognitive Assessment Lab of the University of Virginia Health System, and an expert in assessing and treating traumatic brain injuries—



Visiting Assistant Professor of Psychology Ivo I. Gyurovski '09

what we more commonly refer to as concussions—that occur as a result of physical contact in a wide range of sports. Speaking to a large audience that included students, faculty, community members, and even members of the College's coaching staff, Dr. Broshek deftly explained the mechanisms and underlying neurological processes of head injuries, described current best practices in treating them, and offered a scientific perspective on the controversies surrounding professional football and long term brain damage (including the controversy associated with CTE).

While **Dr. Jennifer Vitale** is still offering her popular Sports Psychology course, she is currently serving as the Associate Dean of the Faculty at H-SC. Filling in for her, **Dr. Ivo Gyurovski '09** joined the department as a visiting assistant professor. Dr. Gyurovski is proud to have earned his B.A. in Psychology and Economics at H-SC. Following his M.A. degree in Psychology at the College of William and Mary, he earned his doctorate at the University of Chicago. Dr. Gyurovski is thrilled to be once again a member of the H-SC community and he is offering courses in social psychology and strategies and processes of negotiation among others. Dr. Gyurovski's research centers on understanding how social status affects humans, and it is structured along two lines of inquiry. The first is focused on person perception where he examines how one's social group of belonging (e.g. race, financial status, etc.) affects processes of

attention and judgment as well as their neural correlates. His second line of research investigates the psychological predictors of personal finance management as a possible mechanism for improving socio-economic status, physical health, and psychological functioning.

In the past year Dr. Gyurovski published research in the journal *Social Neuroscience* investigating how levels and dimensions of social status interactively influence person evaluations indexed by the P300 component of event-related brain potentials. During the fall semester Dr. Gyurovski travelled to Atlantic Beach, Florida, in order to present research at the annual meeting of the Society of Southeastern Social Psychologists. His talk focused on how individual differences in personal finance management predict socio-economic status, physical health, and psychological well-being.

As we gear up for the end of the 2017-18 academic year we are excited to see Psychology Department majors continuing their scholarly careers and pursuing graduate work. **Matt Carter '18** was accepted to pursue a Psy.D. in Clinical Psychology at Argosy University. **Jordan Dimmick '18** will be pursuing a Masters Degree in Clinical Mental Health Counseling

at the William & Mary School of Education. **Roger Smith '18** will be continuing his studies at Radford University's Masters Degree program in Industrial and Organizational Psychology. We all wish them best of luck in their future scholarly pursuits.