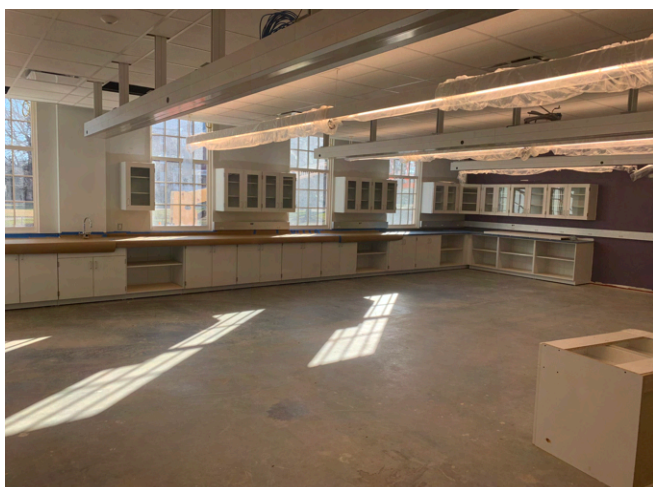


News from the Hampden-Sydney Sciences 2021-22

Pauley Science Center nears completion; new \$11 million endowment supports the Hurt Scholars Program



Outside and inside shots of the Pauley Science Center as construction nears completion and move-in begins in the summer of 2022.

STEM at Hampden-Sydney in 2021-22 has been dominated by two major events: the construction of the Pauley Science Center and the establishment of a new endowed scholarship program designed to attract and retain more top students at the College. The Pauley Science Center is quickly approaching completion, and the STEM departments plan to move into the new building over the course of the summer of 2022. College Trustee **Trevor Boyce '83** donated \$1 million in support of Pauley's infrastructure as the STEM faculty plan how to best utilize the new space. The new scholarship initiative, named the Hurt Scholars, is derived from an \$11 million endowment from the estate of the late **W. Glenn Hurt '60**, a consistent generous donor to his *alma mater*. Starting with the Class of 2026, Hurt Scholars will receive \$10,000 per year in scholarship support plus two summer experiences with support of up to \$5,000 each. Meanwhile, the Robert Leroy Atwell and Lucy Williams Atwell Foundation donated \$250,000 to support student research initiatives.

Biology—by Scott M. Starr

The Biology Department had another busy and productive year. The department is currently preparing for the move to the Pauley Science Center later this spring as construction completion nears. **Dr. Alex Werth** continued his work with the architects and preparing for the transition from Gilmer to Pauley. In addition he has been supervising an experimental research project by **Joe Corbett '22** on the effects of ocean acidification and decreased oxygen levels on vision in fish. Together, Corbett and Werth also published a peer-reviewed article ("The brain limit") in the journal *eLife*, about echolocation in whales and the limits

imposed by neural and musculomotor feedback.

Dr. Kristian Hargadon '01 was involved in a variety of scholarly pursuits during the 2021-2022 academic year, including experimental work and writing projects related to tumor immunology, cancer genetics, and various aspects of the COVID-19 pandemic. Building on previous bioinformatics studies involving RNA-sequencing datasets from The Cancer Genome Atlas, Dr. Hargadon continued to mentor two undergraduate students, **Jeb Wall '22** and **Taylor McGee '23**, both of whom presented aspects of their work at the Spring 2021 Annual Meeting of the American Association for Cancer Research. Jeb's work focused on the identification of oxidative stress response biomarkers that predict cancer patient survival, while Taylor's work involved an analysis of interferon pathway genes that carry prognostic significance for melanoma patient response to ipilimumab, the first FDA-approved immune checkpoint inhibitor for cancer. Of note, Taylor was recognized for his work with a Margaret Foti Foundation Undergraduate Prize for Cancer Research (Honorable Mention Award) at the meeting's Undergraduate Student Caucus and Poster

Competition. Jeb has also continued his analysis of data from The Cancer Genome Atlas this year, working under Dr. Hargadon's mentorship to investigate oncogenic functions of the FOXC2 transcription factor in the context of melanoma. He was recognized in Fall 2021 with an Honorable Mention Award for this work at the Virginia Academy of Science Fall Undergraduate Research Meeting, and he will soon present his most recent data at the upcoming Annual Meeting of the American Association for Cancer Research in New Orleans. In addition to these bioinformatics studies, Dr. Hargadon also recently published a review article on the role of interferon pathway defects in melanoma resistance to immune checkpoint blockade in the *British Journal of Dermatology*, one of the most prestigious journals in the field of dermatology. He was also recognized with an R. Davilene Carter Presidential Prize for Best Manuscripts for a 2021 publication in the *Journal of Cancer Education*, which highlighted the pedagogical benefits of a course-based bioinformatics approach to study cancer genetics that Dr. Hargadon developed for his Biology 201 – Genetics and Cell Biology course. In addition, Dr. Hargadon was recognized with a Molecular Cloud Distinguished Research Award for Genome Editing for his use of the CRISPR-Cas9 gene editing system to gain insight into the oncogenic functions of the FOXC2 transcription factor.

Dr. Hargadon also recently joined the Advisory Board for the journal *Clinical and Translational Discovery*, where he is the only professor from an undergraduate liberal arts institution on an international team that is otherwise comprised of clinicians and clinical research scientists. For the journal's inaugural issue, Dr. Hargadon published an invited Editorial highlighting potential overlaps in the use of -omics-based bioinformatics approaches to study factors that influence the progression of both cancer and COVID-19. He also published an article in the *Journal of Global Health Reports* related to the need for improved education efforts on the role of clinically silent risk factors for severe COVID-19 disease progression as a means of overcoming SARS-CoV-2 vaccine hesitancy and combatting the COVID-19 pandemic. Additionally, Dr. Hargadon's edited volume, *Melanoma – Methods and Protocols*, was published at the start of 2021 in the prestigious *Methods in Molecular Biology* book series. This two-year project brought together cutting-edge basic science, translational, and clinical protocols from leading researchers and oncologists around the world. Among its 45 chapters are two protocol chapters authored by Dr. Hargadon, one on CRISPR-Cas9 gene editing of melanoma cells that features **Corey Williams '19**, **Coleman Johnson '19**, and **David Bushhouse '19** as co-authors, and another on tumor cell-lymphatic endothelial cell adhesion assays that also features Coleman Johnson as a co-author. Lastly, Dr. Hargadon also joined the Editorial Board of the Handbook of Cancer and Immunology book series and the Universal Scientific Education and Research Network, where he serves as a Supervisor of the Cancer Immunology Project that supports research and educational activities of junior scientists in the field of cancer immunology.

Dr. Mike Wolyniak is the co-PI on a new 5-year, \$500,000 grant from the National Science Foundation with collaborators from The University of Houston and The University of Wisconsin-Stout. The grant funds a series of summer workshops for undergraduate faculty who seek to integrate CRISPR into their teaching and laboratory activities at their home institutions. Given the rapid rise of CRISPR as a mainstream tool for molecular biology, these workshops will be a valuable tool for undergraduate faculty who want to give their students the most up-to-date educations in molecular biology possible but have not had any training in this new technology.

Dr. Wolyniak's research students continue to present their work at regional and national conferences. **Caleb Manu '23** presented his ongoing bacteriophage research at the 2022 National Conference on Undergraduate Research, the Network for Undergraduate Research in Virginia (NURVa) meeting, and the Virginia Academy of Science Fall Undergraduate Research Meeting. Taylor McGee also presented his work at the Virginia Academy of Science meeting and received a prize for best poster in his disciplinary group. **Tobias Konieczka '22**, **Trey Grimes '23**, **Tyler Hobart '23**, and Taylor McGee all accompanied Dr. Wolyniak to Philadelphia, PA to present their research at the Annual Meeting of the



Summer research student **Josiah King '23** isolates a segment of DNA from a gel in preparation for work on the spike protein of SARS-CoV-2 (read more about his research in this issue).

American Society for Biochemistry and Molecular Biology (ASBMB). After 2 years of mostly virtual meetings, it was exciting to finally return to an in-person gathering!

Dr. Kristin Fischer and **Andrew Howell '20** published their research entitled “Reusability of Autoclaved 3D Printed Polypropylene Compared to a Glass Filled Polypropylene Composite” was published in the 3D Printing in Medicine journal in August 2021. Dr. Fischer continued to collaborate with **Dr. Paul Mueller** on exploring ZIF-90 nanoparticles as an additive to increase skeletal muscle maturation with **Tyler Hobart '23**, **Erin Copeland**, **Dr. Trey Thurman**, and Dr. Fischer also worked on modelling multi-axis brain oscillations after an impact.

Dr. Rachel Goodman has been working on a project with collaborators around the world to study differences in basking patterns of turtles and the possibility of emergence at night. The new logs and trail cameras that popped up on our campus ponds were placed to facilitate behavioral observations for this project. During the summer of 2021, she also began a project with **Henry Carman '23** (leading) and **Paul Mahaffy '22** (assisting) that examines



Paul Mahaffy '22 and Henry Carman '23 take samples from a turtle collected from the H-SC campus (read more about their research in this issue).

the impact of ranavirus, a wildlife pathogen, on turtles in Tadpole Hole and Chalgrove ponds. The group conducted trapping and weighed, measured, marked and took tissue samples from all turtles captured. This work will be repeated in 2022 to investigate how the presence of ranavirus (as indicated by presence of viral DNA in tissue samples) impacts growth and longevity of turtles. For another project, Paul (leading) and Henry (assisting) recreated a network of artificial cover objects, 2x4 foot plywood and tin sheets, along the Wilson Trail and behind the Observatory on campus. After placing 200 of these objects in the woods, Paul conducted surveys of each site twice per week, and the two students weighed, measured, and marked all snakes they found and took samples to test for ranavirus. In the course of this research, they noticed lesions on snakes which Paul is now investigating for the causative pathogen of Snake Fungal Disease, *Ophidiomyces ophiodiicola*, as his Departmental Distinction project (in

collaboration with Gaelle Blanvillain at Virginia Tech). After a pause during the cold winter months, the lab is resuming surveys of snakes to take tissue and swab samples to test for DNA of ranavirus and *O. ophiodiicola*, respectively. Both students presented their summer research at the Mid-Atlantic Regional Conference of Undergraduate Scholarship (MARCUS) at Randolph College in 2021 and the Network for Undergraduate Research in Virginia Conference (NURVa) in 2022.

Professor Bryan Tims '98 continued to teach many of the principles of biology lecture and laboratory sections. He has been working with Dr. Scott Starr to help transition the Principles of Biology Labs into a Compass course for the Fall 2022 semester and has been helping the department prepare for the move to the Pauley Science Center.

Dr. Ed Lowry and his lab have been working on expanding their martian soil growth experiments and extra-terrestrial conditions like ultraviolet light exposure to a project screening for mutants that can tolerate these extreme conditions. He has been using a common model organism, rapid-cycling *Brassica rapa*, and will soon expand to include *Arabidopsis*. **Jake Beavers '22** pioneered the work last year where he set-up high-energy UV lights in the HSC greenhouse. This simulates the sort of radiation that could be encountered one day by plants grown in extraterrestrial environments like on Mars or space habitats that would lack the protective layers of Earth's atmosphere. Jake continues to be the principal student investigator along-side **Josh Fentress '23** who conducted superb research under similar conditions over the past summer. Students in BIOL 355 Community Ecology class have been assisting in the research as part of their class project. Other projects in the greenhouse are actively developing, including research into plant root propagation and mycorrhizal symbiosis conducted by **Izac Mercer-Olatunji '23**. He has extended investigations to include an attempt to propagate the much-beloved Fig tree that serves as door-warden to Gilmer Hall (originally planted by Dr. Mueller). If Izac's research proves a success, you may get the chance to own your very own clone of the “Gilmer Fig.”

Dr. Scott Starr joined the biology department this past summer as an assistant professor. He is originally from Hanover, Pennsylvania. He earned his B.S. in Environmental Biology from Millersville University of Pennsylvania, a M.S. in Biology from the University of Alabama, and a Ph.D. in Biology from Texas Tech University. Dr. Starr will be teaching courses focused on environmental biology, ecology, entomology, aquatic ecology, and geographic information systems. His research is focused on aquatic ecosystems and how surrounding landscapes and human activities affect these systems. Dr. Starr likes to use aquatic invertebrates as model organisms to study aquatic systems and ecological principles. This summer Dr. Starr along **Victoria Fenton '23** and **Roman Trettel '23** will start research projects focused on regional surveys of the adult dragonfly and damselfly communities, aquatic macroinvertebrate communities, and water chemistry of streams of Central Virginia. Dr. Starr is currently a Co-editor for the special collection titled "The Ecology and Biology of Aquatic Insects" in the Journal Insects. Dr. Starr is collaborating with Dr. Mike Wolyniak, Dr. Rachel Goodman, **Dr. Sean Gleason**, and **Declan Kent '23** to process the Farmville Heat Watch data collected this past July. The goal of the Heat Watch project is to study urban heat islands across Virginia and specifically within Farmville to determine the areas experiencing elevated air temperatures and determine the best locations to plant trees to help alleviate elevated air temperatures. In addition, **Mr. Scott Schmolesky**, Director of the H-SC High Adventure, Dr. Goodman, and Dr. Starr received a grant for \$9,280.00 from the Virginia Department of Wildlife Resources to run the H-SC Wildlife Viewing and Habitat Exploration Camp this June for two groups of Prince Edward County High School students



Dr. Scott Starr joined the H-SC Biology Department in 2021

Chemistry—by Paul H. Mueller

The Chemistry Department is in a state of transition. With our move to the Pauley Center this summer, **Dr. Nicholas Deifel's** leave of absence, **Dr. Kevin Dunn's** sabbatical, **Dr. Paul Mueller's** imminent retirement, and continued adjustments due to the pandemic, change is happening. But since chemistry is often described as the science of change, we as chemists are adapting. Special kudos this year should be given to **Dr. Herb Sipe** for his unflinching presence, energy, and long institutional memory, to Dr. Dunn for his guidance in departmental matters, to **Dr. Tim Reichart** for the new energy, research opportunities and perspectives he brings to the department, to **Mrs. Beverly Hines** for being the glue that holds the department together, and to Dr. Mike Wolyniak for being our partner in biochemistry as well as academic searches. We are currently interviewing candidates to fill the tenure-track organic position and a visiting professorship in inorganic chemistry.

The move to the Pauley Center is anticipated with both joy and some apprehension. Completion of the Pauley Center is nearly on schedule, and the move from Gilmer will happen over our summer recess. The department will likely upgrade the magnet on the NMR. Other new research grade instruments acquired within the last two years—UV-Vis, FT-IR, and Fluorescence spectrometers and Herb's JEOL ESR—will find a home in a well-appointed instrument lab along with other workhorse instruments such as the GC/MS, the LC/MS, and the MP-AES. The Department would like to thank donors to the Miller-Porterfield-Sipe Instrument Endowment Fund as well as a generous personal gift from **Professor Emeritus Bill Porterfield** for some of the funds used to acquire our new instruments. The new Advanced Laboratory Research Suite will fit the open model found in most up-to-date grad school labs with desks in a separate write-up room. Also in conjunction with the move, Mrs. Hines has been busy culling unneeded and old chemicals from our stockroom!

It has been a fruitful year for our students. Two senior majors are pursuing Honors in Chemistry: **Daniel Pearce '22**, in collaboration with Dr. Reichart, is synthesizing and testing of peptide-based compounds as inhibitors of immunoglobulin protease and **J. Daniel Smith '22**, working with Dr. Mueller, is synthesizing novel ligands and testing their fluorescence properties as metal complexes. Other senior majors are finishing their chemistry research this spring: **Ashton Dixon '22** is working with Dr. Reichart on a modified peptide synthesis which will be followed by an yne-ene metathesis and Diels-Alder reactions to make novel cyclic peptides; **Titus Dowell '22** and **Caleb Temple '22** are working with Dr. Mueller on finishing loose ends of the research on fluorescent ligands conducted last year

by **Brennan Vaught '21**; **Aron Weldai '22** is working with Dr. Reichart on synthesis of a SARS-CoV-2 protein; and **Mason Willis '22** is working on an ESR project with Dr. Sipe. We will also be graduating Tobias Konieczka '22 and **David Ponce '22** this spring as Biochemistry/Molecular Biology Majors. The Department will also graduate six minors in chemistry this year: **Max Lipscomb '22**, **Nicholas King '22**, **Hunter Martin '22**, **Peter Purkall '22**, **Aidan Sloan '22**, and **Andrew Smith '22**.

Most of our majors already have solid plans for next year: Dixon has applied to graduate school at Old Dominion University; Dowell has secured employment with a cybersecurity firm and plans to apply to Veterinarian School in two years; Konieczka has applied to Virginia Commonwealth University's graduate program in bioinformatics, Pearce, Smith, and Weldai were all accepted to several graduate chemistry or biochemistry programs; Willis is seeking employment in industry, and Temple has been accepted into the Pharmacy PhD program at Campbell University.

One of the hallmark features of our program in recent years has been an active cadre of student researchers over the summer months. Last summer eleven students spent eight to ten weeks on campus working with chemistry faculty. Tim Reichart had five students working with him on campus. Tyler Hobart '23, Trey Grimes '23, **Brett Reis '23**, and Aron Weldai '22 all worked on synthesis and characterization of peptide fragments of SARS-CoV-2 proteins, while Daniel Pearce '22 worked on his project aimed at inhibiting IgA1 protease. Aidan Sloan '22 worked remotely on a literature and computational project with Reichart. Herb Sipe worked with four students, **Nathan Cabrera '24**, **Connor Eickelman '24**, **Ben Rose '23**, and **Becton Topping '24**. All of his students worked on aspects of free radical chemistry and oxidative stress. Paul Mueller worked with **Andrew Rehak '23** and Daniel Smith '22 on synthesis of fluorescent ligands. This summer, despite disruptions from the move, six students plan to work on projects with Drs. Reichart and Sipe. Two others, Ben Rose '23 and Taylor McGee '23, were accepted to NSF REU programs.

Despite some challenging times, including suffering some loss of enrollments at the College due to the pandemic, the department continues to do well. From a relatively small organic class this year nine rising juniors declared chemistry or biochemistry majors. That is a bit above our average over the years I have been at Hampden-Sydney. Dr. Dunn stepped in admirably to act as departmental chairs during our short-staffed fall and Dr. Sipe has done the same during the spring term. Dunn is on sabbatical this spring but has remained engaged with the Department, and Ben Rose '23, one of his students from fall Advanced Lab, will present a poster at the ACS Sectional meeting in Charlottesville.

I will end on a personal note. My thirty-seven years in this department have been rewarding beyond measure. I look at many of my students and my colleagues as family. I will miss the communion of sitting on the blue couch with them.



Dr. Paul Mueller is retiring in 2022 after 37 years of service to the College

Mathematics and Computer Science — by Drs. Dara Jaiyeola and Rebecca L. Jayne

Dr. Dara Jaiyeola joined the Department of Mathematics and Computer Science of Hampden-Sydney College as a Computer Science faculty member in Fall 2021. She grew up in the Southwestern part of Nigeria in Africa and she obtained her Bachelor's degree (with honors) in Computer Science from Bowen University, Nigeria where she was the 2012 university-wide Best Graduating Student. She received her master's degree (with distinction)

in Computer Science from Liverpool Hope University, England in 2015; and she was awarded her Doctoral degree in Computer Science from Mississippi State University, USA at the end of 2021.

Her dissertation is titled "A longitudinal analysis of pathways to computing careers: Defining broadening participation in computing (BPC) success with a rearview lens" and it studied the educational pathways of underrepresented minorities who have successfully transitioned into the computing workforce and identified the common roadmaps that contributed to their retention, persistence, and success in attaining computing employment.

Dr. Jaiyeola's research interests are within the broad field of Computer Science Education with a focus on broadening participation in computing, studying the computing educational pathways and their effects on employment outcomes, employability of computing graduates, curriculum design, development, and assessment for successful employment outcomes in computing, among others.

Dr. Michael Strayer published a paper titled "Classifications of Γ -colored minuscule posets and P -minuscule Kac-Moody representations" in the *Australasian Journal of Combinatorics*. He is also leading senior **Blakeney Alec Wesson '22** in an Honors Senior Capstone project. Alec is finding bijections between different sequences of sets of objects whose cardinalities (sizes) are known to be given by the famous Catalan sequence of numbers. Dr. Strayer and **Dr. Sarah Loeb** presented at regional (April 2021) and national (August 2021) conferences hosted by the Mathematical Association of America (MAA) on the experience of their pedagogical reading group after reading the *Instructional Practices Guide* of the MAA.

Dr. Sarah Loeb has had a busy year. She has two papers published or in press: "Strategy-Indifferent Games of Best Choice" (with B. Jones, K. D. Kochalski, J. C. Walk) published in *Discrete Mathematics* and "Determining Number and Cost of Generalized Mycielskian Graphs" (with D. Boutin, S. Cockburn, L. Keough, K. E. Perry, P. Rombach) in *Discussiones Mathematicae Graph Theory*. She also has a book chapter "Symmetry Parameters for Mycielskian Graphs" (with D. Boutin, S. Cockburn, L. Keough, K. E. Perry, P. Rombach) in the book *Research Trends in Graph Theory and Applications* in the Springer Association for Women in Mathematics Series. With her collaborators, Dr. Loeb was awarded a Research Experience for Undergraduate Faculty Continuation Grant by ICERM/AIM to work on the "Strategy-Indifferent Games of Best Choice" mentioned above. She also ran a session introducing mastery grading to the Section NExT participants at the Fall 2021 MD-DC-VA MAA Section Meeting. Dr. Loeb also welcomed new baby Ambrose Redmund Gano to her family in February.

Dr. Loeb has also been working with **James Garrison '22** on his Honors Senior Capstone Project. James and Dr. Loeb are working on symmetry parameters of Kneser graphs. James was accepted to give a poster on his work at the Pi Mu Epsilon poster session at the Joint Mathematics Meetings, typically held in January. Because of changes due to COVID, he will present the poster online next month.



Dr. Dara Jaiyeola joined the H-SC Computer Science Department in 2021



Dr. Tom Valente is retiring in 2022 after 29 years of service to the College

In addition, **Dr. Brian Lins** had a paper “Nonexpansive maps with surjective displacement” published in the *Journal of Fixed Point Theory and Applications*. In November 2021, he gave a talk on this topic at the Virginia Operator Theory and Complex Analysis Meeting (VOTCAM). While on sabbatical in the fall, he wrote a paper “A unified approach to nonlinear Perron-Frobenius theory” which has now been submitted for peer review.

This year, **Dr. Rebecca Jayne** had a paper “Multiplicities of Some Maximal Dominant Weights of the $sl(n)^A$ -Modules $V(k\Lambda_0)$ ” accepted in *Algebras and Representation Theory*. She also gave a talk on similar work at the AMS Special Session on Cohomology, Representation Theory, and Lie Theory at the AMS Sectional Meeting in November 2021.

Dr. Tom Valente is retiring at the end of this year. He came to Hampden-Sydney College in 1993 and was instrumental in developing our Computer Science program. Dr. Valente loves baseball and is excited to travel to more Mets games during retirement.

Physics & Astronomy – by Hugh O. “Trey” Thurman III

The 2021-22 academic year was another busy year for the Physics and Astronomy department. **Dr. Mike McDermott** continued his service to the College as the Dean of the Faculty. The department is pleased to have 13 graduating seniors.

Dr. Steven Bloom continues to work on revised journal articles related to pedagogy of mechanics, such as using EXCEL and Mathematica to study flight of airplanes and rockets. In addition, he is excited to begin his survey of exoplanets using the now automated HSC Observatory. He also hopes to monitor some interesting quasars!

Dr. Stan Cheyne continued research on sound speed measurements in ethanol/water solutions. Sound speed measurements were made with a standard time-of-flight technique while changing the percent ethanol and temperature. A prototype was designed and programmed to determine the alcohol content based on these measurements. A recent paper was published entitled, Sound speed measurements in ethanol/water solutions and Kentucky bourbon whiskey, in the *Journal of the Acoustical Society of America*. He also worked with a student making acoustical measurements in many of the classrooms on campus. Finally, he continued his work with Professor Thurman on sound speed measurements in bubbly liquids using a transfer function method in impedance tubes.

Dr. Jonathan Keohane has primarily worked on a network of automated observatories, which includes the Hampden-Sydney Observatory. Keeping a high duty-cycle of observing with our observatory has required continual trouble-shooting and nightly monitoring. **Anthony Pinchefsky**, the Physics Department technician, upgraded the observatory dome hatch to open using bicycle chains and replaced the dome wheels so it would rotate better. Most importantly, Dr. Keohane was part of large team of astronomy instructors who received a \$3 million Department of Defense grant to develop a second-year laboratory curriculum centered on the use of these automated observatories, and to upgrade the detectors on 6 radio telescopes in West Virginia, North Carolina, and Tasmania. Finally, senior physics major **Jason Covaney '22** has worked with Dr. Keohane to write an observing proposal for the Chandra X-ray Observatory. If the proposal is accepted, Jason will work with Dr. Keohane on the project when the data arrive.

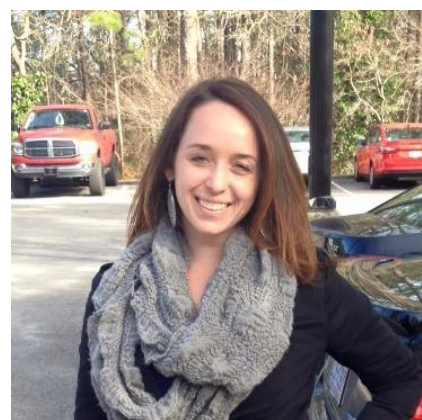
Dr. Hugh Thurman conducted an independent study course with **Andrew Cheyne '22** focused on materials used in construction. This course has direct application to Mr. Cheyne's Advanced Lab project investigating how to improve the strength of permeable concrete. Professor Thurman continued his research efforts with Professor Cheyne in attempting to measure the dispersion curve for the phase speed of a bubbly liquid using a two microphone transfer function technique.

Psychology—by Ivo I. Gyurovski '09

The 2021-2022 academic year was another busy year for the Psychology department. **Dr. Dan Mossler** retired after having taught in the department for 28 years. His courses centered primarily on lifespan development and quantitative methods. After a national search, the department is pleased that **Dr. Rebecca Bauer** will be joining our group to teach courses in developmental psychology, research methods, and cognitive psychology. Her research focuses on understanding creative thinking in children, and she is coming from the University of Alabama.

Dr. Dan Weese published a manuscript, which continues his work on understanding how the thalamic reticular nucleus supports action selection. The article is titled *Action Selection Is Impaired by Unilateral Lesions in the Rostal Thalamic Reticular Nucleus*, and it is published in the prestigious *Behavioral Neuroscience* journal. Due to the fact that we can usually engage in one behavior at a time, there should be a process by which an action appropriate for the situation is selected and alternatives are inhibited. This is the first experiment to demonstrate behaviorally that the thalamic reticular nucleus (TRN) plays a role in the inhibition of inappropriate behaviors. The TRN plays an analogous role in attention or stimulus selection (Weese, Phillips, Brown, 1999).

Hampden-Sydney Psychology students made a big splash at the Society for Personality and Social Psychology Conference in San Francisco held February 16-20. **Coleman Meadows '22** and **Jackson Eisele '23** were two of just a handful of undergraduate students invited to present at the conference. Working with Professor of Psychology **Dr. Jennifer Vitale** as well as Dr. Gyurovski, Coleman—who has ambitions of becoming a school psychologist—studied how perception and approval of a marginalized group, in this case, gay men, was affected by age. Participants either viewed or read about young and old gay men engaging in



Dr. Rebecca Bauer joins the Psychology Department in 2022

stereotypically gay behaviors. When seeing pictures, perceivers were more likely to approve any behavior of younger gay men; however, when reading vignettes, participants were more likely to approve of any age gay men attending a pride event than their wearing non-gender conforming clothing or kissing another gay man.

Jackson was interested in third party judgments of morally questionable behaviors that are likely to occur in a workplace environment. $N=626$ participants judged moral violations of care and authority principles occurring in hypothetical workplace environments where the race and the sex of both the transgressor and the transgressed were manipulated. Harshest evaluations of care violations occurred when a Black male wronged any race female. In contrast, judgments of authority violations were harshest when a Black male wronged another Black person, regardless of their sex.

Assistant Professor of Psychology **Ivo Gyurovski '09** also gave a talk at the same conference. His presentation discussed findings from three experiments (Total $N=1046$) that examined fungibility (the idea that social group members are interchangeable) in moral decision-making where participants had to choose between sacrificing a majority or a minority soldier in the context of a dilemma. Manipulating targets' race in Study 1 demonstrated that participants are likely to sacrifice a White soldier when Black soldiers have been killed or endangered. However, participants were equally likely to sacrifice a White or a Black soldier when White soldiers were killed or endangered. Manipulating target sexual orientation in Study 2 demonstrated a similar



Coleman Meadows '22 (top) and Jackson Eisele '23 (bottom) present their research in San Francisco at the Society for Personality and Social Psychology Conference

effect, where participants were more likely to sacrifice a Straight soldier when Gay soldiers were killed or endangered; however, people were fungible in their choice when Straight soldiers were killed or endangered. Manipulating targets' socio-economic status in Study 3 showed that high and low socio-economic status are seen as fungible categories when the soldiers were endangered; however, participants were significantly more likely to sacrifice a high SES soldier when low SES soldiers were killed and remained fungible when the killed soldier was from a high SES background.

The department is especially pleased to induct **David Banton '23**, **Deanna Camp '23**, and **Anthony Isom '23** as members of the Psi Chi honor society.