

The Cavendish Chronicle

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*Kaluza in lab at August Schell
Brewing; Doze links in to
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Ardolf Science Students Persevere in Summer Quests Amid Chaos of COVID-19 Pandemic

The summer of 2020 was a difficult year for all of us. For science students, eager to expand their horizons on summer research projects, COVID-19 meant hundreds of canceled Research Experience for Undergraduate programs and lost industrial internships. Nevertheless, a few lucky CSB/SJU students reported on how they made it work.

Elizabeth Bartlett, Chem '22 continued research on self-adsorbed monolayers. Working remotely from her grandparents' old house in St. Joseph, she analyzed STM images for Dr. Annette Raigoza. The project was made possible

by the Claire-Boothe Luce Scholar Program.

Val Doze, Bchm '21 worked remotely from her home in Grand Forks, ND, with Dr. Dwight Bergles' lab in the Department of Neuroscience at Johns Hopkins University. She used bioinformatics to compare glial cell populations and run differential gene expression analyses on datasets containing glial cells.

Abby Kaluza, Bchm '22 interned at the August Schell Brewing Company in New Ulm, MN. Daily responsibilities included membrane filtering as well as testing color, pH, and bitterness units. In addition,

she contributed to some sustainability projects.

Buck Strain, Bchm '21 had an internship at RWDA, a major producer of polyhydroxyalkanoates, linear polyesters produced by the fermentation of sugar or oil.

Anna Zeleny, Chem '21, who spent last summer at the Bigelow Institute for Ocean Sciences in Maine, adapted when she saw a number of REU prospects disappear. Instead of hitting the lab, she volunteered at a Buddhist meditation center in New Mexico, working on

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Alternative Summer Experiences

(continued from page 1) a sustainability and self-sufficiency initiative. The effort entailed experimentation with desert agriculture techniques (hydroponics and drip irrigation), construction projects, and water quality monitoring.

Undeterred, students who lost opportunities this year are looking ahead to next.

“I’m already working on my applications,” said **Mackenzie Claypool, Chem ‘22**, who saw a prized opportunity with Sherwin Williams fall through in the wake of the pandemic.

Zeleny hangs Buddhist prayer flags in NM.



In Memoriam: Nicholas Schumacher Briese, 1984-2020



Nick Briese, Chem ‘06 died of leukemia on July 9, at his home in Minneapolis. He was 36. A native of Appleton, WI and Rochester, MN, he was a boy scout and soccer kid who decided to pursue his education at Saint John’s. In addition to his studies, Nick made many friends through intramural sports, including Nicole Huebner, CSB ‘06. After graduation,

Briese spent a year with the Benedictine Volunteer Corps at St. Benedict’s Preparatory School in Newark, NJ. In addition to teaching high school chemistry, Nick also served as a coach for the water polo team.

“A particularly interesting assignment considering his lackluster swimming skills,” noted Huebner.

Briese returned to the midwest and attended University of Minnesota Medical School, graduating in 2011. Along the way, he and Huebner decided to give dating a try, which worked out well enough that they married in 2012. After completing his residency at Hennepin County Medical Center, serving as Chief Resident, Briese joined the Hennepin faculty in the Division of Hospital Medicine. His ongoing commitment to teaching resulted in his being awarded the Exceptional Affiliate Faculty Teaching Award. Meanwhile, Briese and Huebner built a life together, working on their house, adopting two rescue dogs, and enjoying backyard meals together with friends.

At Christmas, 2018, Briese was admitted to hospital, the beginning of

eighteen months of chemotherapy, a stem cell transplant, remission and relapse. He remained hopeful throughout that he could return to teaching and working with patients. He is remembered by his students as genuine, caring, and patient. His colleagues recall his calm demeanor. His friends will miss his dry wit.

A final farewell for Briese will be postponed until the summer of 2021. For additional details, please visit: <https://www.caringbridge.org/visit/nickbriese>.



Briese with Prof. Henry Jakubowski

Jakubowski Retires After 32 Years

Prof. Henry Jakubowski has retired. Jakubowski, who arrived at CSB/SJU in 1988, taught biochemistry in the department for many years. A native of up-state New York, he is a graduate of SUNY Albany, where he was a physics major with an interest in astronomy. During summers, he worked at Eastman Kodak in Rochester, NY. However, he became intrigued by the wonders of the cell and chose to pursue graduate study in biochemistry at the University of Iowa, where he focused on enzyme kinetics. He followed up with post-doctoral study at the Mayo Clinic.

Jakubowski has had a distinguished scholarly career, mentoring undergraduate research in the lab as well as devel-

oping educational tools. His most recent publication, in *BAMBA*, focused on a virtual experiment with an ELISA assay for COVID-19. He has been deeply involved in online educational resources for decades, first with his own biochemistry online textbook and later through a collaboration with LibreTexts. He has also been active in professional service, working with the ASBMB as well as the AAMC, notably during the effort to revise the MCAT prior to 2015.

Jakubowski and his wife, who recently retired from Centracare Health, have moved to New York City to be closer to family. Their daughter, a physician in the city, recently gave birth to a baby girl.



Jakubowski receives honorary degree from Southwest University, Beibei, China

New Prof in Ardolf Sci Center

Prof. Lisa Gentile joins the Chemistry Department starting in Fall 2020. A biochemist by training, Gentile brings both teaching and academic leadership experience with her. She will be teaching primarily in Structure and Reactivity courses and foundation labs, but she will also play a role in Advanced Laboratory and biochemically-oriented in-depth courses. Educated at Colgate University, a small, primarily undergraduate liberal arts college, Gentile also earned a Ph.D. in biochemistry from Brown University, where she was a National Institutes of Health pre-doctoral fellow. She completed post-doctoral work in biophysics at

Cornell University and at the University of British Columbia.

Undergraduate research has always been important to Gentile. Her interests are centered on protein structure and dynamics. In the past, she has worked primarily on proteins involved in disease. She enjoys working with students to help them identify a research question in an area of their interest and mentoring them as they move their projects forward. She is a big fan of collaboration and the interdisciplinary approaches needed to answer interesting questions.

Jones Returns to Pacific Northwest

Prof. T. Nicholas Jones has left CSB/SJU to take a faculty position at Peninsula College in Washington State. Jones, a native of Portland, OR, was motivated to relocate to the Pacific Northwest for family considerations, among other reasons.

"It was just too sunny there," said Jones, when asked to comment.

Jones, the former chair of the Chemistry Department, had also been teaching summer term at Montana State University for a number of years. He developed a unique collaboration with the lab of Dr. Mary Cloninger, sending his CSB/SJU research students to Montana during the summer.



Back to familiar trails.

Alum Notes *Reports from CSB/SJU Chem & Biochem Grads*

Anna Selmecki, Chem '02 has moved her research lab from Creighton University to the Department of Microbiology and Immunology in the U MN Medical School. Selmecki is also a National Academy of Sciences Kavli Fellow.

Hadley McIntosh, Chem '10 defended her Ph.D. thesis at the University of Maryland Center for Environmental Science. Her thesis topic was the dynamics of methane in Arctic lakes in the MacKenzie River delta. She is a contributing writer for Geobites.

Alex Hansen, Bchm '11 earned an MBA from the Carlson School of Management at U MN and took a position at PNC Financial. Hansen previously worked at Tapemark.

Danelle Rolle-McFarland, Chem '12 is a Clinical Research Scientist at OncoSynergy. McFarland earned a Ph.D. and MPH at Purdue University.

Christopher Seiler, Chem '12 published an article from his Ph.D. work at U MN in *Scientific Reports*, a *Nature* publication (Inhalation exposure to cigarette smoke and inflammatory agents induces epigenetic changes in the lung. *Sci Rep* 10, 11290 (2020)). Seiler is currently employed at WuXi AppTec.

Eric Uzelac, Chem '12 is working as a Materials Scientist at Marvin in Fargo, ND.

Hasini Kalpage, Bchm '14 recently received a predoctoral fellowship from the American Heart Association to continue research on the role of Cytochrome c phosphorylation. Kalpage is pursuing a PhD in biomedical sciences at Wayne State University. Last year, she published two first-author papers in *The FASEB Journal*.

Jay Zachman, Chem '14 earned a Masters in Healthcare Administration from U MN and is a Senior Project

Manager at CentraCare in St. Cloud, MN.

Autumn Flynn, Chem '15 completed a Ph.D. in chemistry from Emory University and has started post-doctoral work at University of Utah.

Paige Armbrister, Bchm '14 has taken a position as a staff physician at Princess Margaret Hospital in Nassau.

Ben Korr, Chem '15 is in residency at the Mayo Clinic.

Anna Luke, Chem '15 recently defended her Ph.D. thesis at U MN and published her fifth paper (Mechanism of Initiation Stereocontrol in Polymerization of rac-Lactide by Aluminum Complexes Supported by Indolide-Imine Ligands. *Macromolecules* 2020, 53, 1809–1818). She is doing postdoctoral work at U MN.

Erica Sinner, Chem '15 has published a first-author paper in *Chem Comm* (Methylations in complex carbapenem biosynthesis are catalyzed by a single cobalamin-dependent radical S-adenosylmethionine enzyme. DOI: 10.1039/c9cc07197k). Sinner is a graduate student at Johns Hopkins University in Baltimore, MD.

Tom Steichen, Chem '15 has moved to a new job as a Materials Engineer at Medtronic.

Tom Nilles-Melchert, Bchm '17 is starting medical school at Creighton University. He previously served with Benedictine Volunteer Corps.

Jasmine Tutol, Chem '16 had a top-downloaded paper last year in *ChemBioChem* (Identification of mNeonGreen as a pH-Dependent, Turn-On Fluorescent Protein Sensor for Chloride. doi.org/10.1002/cbic.201900147). Tutol is a graduate student at University of Texas-Dallas.

Alvin Burrows, Chem '17 is a Chemist at Merriex Nutrisciences. Burrows earned a M.S. from U MN-Duluth.

Maeve Ryan, Chem '17 is a Field Service Engineer at Agilent Technologies. Ryan has a M.S. from U MN-Duluth.

Ellen Arnold, Bchm '18 has started pharmacy school at University of Minnesota.

Talitha Burtis, Chem '18 graduated from Sam Houston University with a M.S. in Forensics.

Hannah Holst, Chem '18 published a paper from her graduate work at U MN (Reagent Control Enables Selective and Regiodivergent Opening of Unsymmetrical Phenonium Ions, *Journal of the American Chemical Society* 2020, 142, 18, 8090-8096).

Samantha Tinucci, Chem '18 started a new position as a Research and Development Chemist at Tapemark. Her job includes stability, method development, and method validation activities in pharmaceutical drug delivery.

Susie Xiong, Chem '18 has taken a new post at Kolmar Labs in New York. Xiong, who has a Masters of Business and Science from Rutgers University, previously worked at Chanel.

Megan Barta, Chem '19 is an Applications Specialist at BioAutomation in Carmel, Indiana.

Caitlin Loeffler, Chem '19 is working on a masters at St. Scholastica while teaching at Tech High School, St. Cloud.

Jose Martinez, Chem '19 is a Quality Control Technician at Agilex Fragrances in Van Nuys, California.



Alumna, Surgeon, Keeps Calm and Carries On

COVID-19 has upended all of our lives, and **Dr. Trish Valusek, Chem '97** is no exception. A pediatric surgeon and Director of Surgical Quality with Children's Minnesota, she spent weeks conferring with colleagues in New York City, Seattle, and around the world, trying to develop new policies and standard operating procedures for a host of processes. Meanwhile, almost all surgeries were put on hold.

"Those early days were dark," she recalled. "We were hearing of colleagues dying. Trying to make safe decisions in a void of data when emotions are running high stretched me to my limit." Of particular concern were aerosol generating procedures, which occur during almost any surgery, and which are strongly linked to contracting the most severe cases of the disease. Things eventually settled into a new rhythm, and although there is still a general shortage of personal protective equipment, strong protocols and training routines are in place. For example, all patients are now tested for COVID-19 prior to surgery.

Normally, Valusek is in surgery two days per week, consults pre- and post-operative patients one day per week and spends the rest of her time on activities related to surgery quality. Surgery generally involves anything with children except, brain, heart, or orthopedic surgeries; a typical day might include anything from repairing a congenital defect in a newborn to removing a tumor from a teenager's chest. She is also on-call every fourth night plus one weekend per month. Half of those call dates are spent "in-house" at the hospital in order to respond immediately to Level 1 traumas and critical emergencies. The other half are spent at home, where she is available to provide pediatric support to other hospitals if needed.

Valusek was drawn to surgery during her early days in medical school, based on the simple joy in fixing things. This affinity was confirmed when she assisted

in an umbilical hernia procedure in a small child: a belly button repair. After a successful procedure, the relief of the child's family made a lasting impression.

"There are few fields I can think of," Valusek explained, "that challenge both the analytical and the emotional the way that medicine does."

With two kids of her own, ages 9 and 10, Valusek understands very well how much trust parents place in her. Although the pandemic has disrupted the children's normal activities, she does appreciate the extra time she has with them. Spending quiet evenings together or getting away to their island cabin in Wisconsin help give her some balance.

"I love taking a book and my kayak out and finding a cove where I can just sit in the quiet and read," she said.

Those quiet moments are something Valusek still holds dear from her days at college.

"I have one vivid memory from my senior year that always brings me right back. It was probably late October. There were still leaves on the trees. I was out for a long run late in the evening in the chilly fall rain. As I crossed the footbridge toward St. John's the rain turned to snow. I recall a small house in the woods along that road. The lights were on inside and I could smell the smoke from the chimney. At that moment I felt there was no more perfect place in the world. I stopped running and just stared at the house as the snow fell around me."

It's one of those magic memories of CSB/SJU. We all have them.



Valusek with her two children



Grad Launch *What the Class of 2020 is Doing Now*

Despite the difficulties reported nationwide in a pandemic year, the CSB/SJU chemistry class of 2020 have found a range of positions.

Ana Grace Alvarado is in the Ph.D. program in environmental systems at the University of California, Merced.

David Bedford is a City Year AmeriCorps member, serving as a tutor/teacher's aid in Boston, MA.



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Marissa Behounek is pursuing a MS in food science at the University of Nebraska-Lincoln.

Patrick Erredge is a Lab Technologist at the Mayo Clinic, analyzing blood and tissue samples to aid health care providers in the diagnosis, prognosis, and treatment of COVID-19 patients.

Autumn Fuchs is in graduate school in chemistry at University of Utah.

Gabe Johnson is serving with Benedictine Volunteer Corps.

Quinlen Marshall is a Research Technician II at the Center for Childhood Cancer Research, Division of Oncology, The Children's Hospital of Philadelphia.

Jack Matuska is a Chemical Lab Technician for Avtec Finishing Systems.

Morgan Murphy is in the chemistry Ph.D. program at Penn State.

Ethan Ploeger is doing a master's program at U MN-Duluth.

Savanna Nolan is an analytical chemist working in quality control at Swanson Health Care, Fargo, ND.

Ava Orr is working on a Ph.D. in toxicology at the University of Montana.

The graduating class in biochemistry (a joint major with CSB/SJU Biology) has been similarly successful.

Lauren Clark is going to graduate school in nutritional sciences at UW-Madison.

Allison Grodnick will be an English Teaching Assistant in Poland through the Fulbright US Student Program.

Dillon Hauge is working at Cold Spring Brewery.

Anna Haper is in the medical physiology graduate program at Case Western Reserve University.

Austin Hintgen is in medical school at University of Minnesota.

Jessica Hodges has enlisted as an officer in the US Army.

Abby Houliston is pursuing a masters in biomedical forensic science at Boston University.

Victoria Jennrich is in the Healthcare Administration MBA program at University of Denver.

Taylor Loth is taking a gap year while she applies to medical school.

Joe Miller is working as a medical scribe with EPPA at North Memorial Emergency Department.

Nicole Newman is a Quality / Safety Analyst at Children's Hospital in Minneapolis/St. Paul.

Nathan Patterson is in optometry school at Pacific University.

Michaela Reardon works as a Lab Tech at 3M testing respirators and other personal protective equipment.

Leeah Ruf is a business development manager at Masterson Staffing Solutions, responsible for St. Cloud, Buffalo and Annandale, MN.

Jillian Schulz is taking a gap year and applying to medical school.

Brenna Sharp is a lab technician at Mayo Clinic in Rochester, MN.

Kendra Swanson is in pharmacy school at Regis University in Denver.

Collin Trout is entering pharmacy school at U MN

Tessa Venables is taking a gap year before graduate school.

