

Research Endowment Hits \$1 Million Milestone



Summer 2021 Researchers

Just as the Chemistry and Biochemistry Department returned to in-person laboratory research this summer, we reached a major milestone in our research endowment fundraising campaign. The Department is very excited to announce that the research endowment has now surpassed the \$1 million mark! This represents an extraordinary achievement in the history of the Department. Without the generous financial support of our amazing alumni, reaching this milestone would not have been possible.

The main goal of the research endowment is to provide a reliable source of stipends for students engaged in summer research projects with Department faculty. These research experiences play a crucial role in their educational experience, enabling them to gain acceptance into prestigious Ph.D., medical school, and other graduate and health related programs. Thank you for your confidence in our ability to deliver a quality educational and research experience to our students.

While we celebrate this major accomplishment, we also realize that the hard work is not over. The Department now embarks on a journey to raise the next \$1 million for the research endowment. With these additional resources, we will be able to provide funds for research laboratory supplies and equipment for our students. This will ensure the success of the Department summer research program far into the future. We hope that we can continue to count on your generous support to make this goal a reality, which will allow us to produce the next generation of successful Canisius Chemistry and Biochemistry graduates!







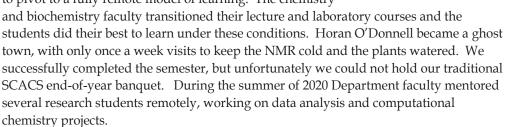
A Message

from the Chair

Greetings to All Griffin Chemists and Biochemists!

I hope this newsletter finds each of you and your families healthy and well.

It's been 2 years since the last edition of this newsletter; another disruption caused by the pandemic. In March 2020, rising COVID 19 cases in Erie County prompted Canisius to pivot to a fully remote model of learning. The chemistry



The summer of 2020 also brought big changes to the Department. College budget issues led to staff reductions and for us this meant the loss our extraordinary Administrative Associate, Alice Steltermann. A subsequent retirement incentive for faculty led to the early retirements of Roberto Gregorius and Mary O'Sullivan. We also welcomed Zeenat Bashir as our Teaching Post-Doctoral Fellow in Biochemistry.

Fall 2020 saw a return to classes with a hybrid in-person/remote learning experience. All chemistry and biochemistry lecture and laboratory courses were offered with an inperson option. The semester was intense, with no breaks until Thanksgiving followed by a few weeks of all remote instruction. We were fortunate to conclude the spring semester with a small, in-person picnic celebration with our seniors. Summer 2021 saw a much anticipated return to in-person research. This fall our classrooms are almost back to a pre-pandemic 'normal'.

To say the past two years have been challenging is an understatement. In spite of everything, Department faculty have continued to offer an excellent educational experience to our students. I am particularly proud of our majors for their continued hard-work and dedication to their studies during this difficult time.

While it's been some time since we have been able to gather in-person, please stay an active part of the Canisius Chemistry and Biochemistry family by letting us know how you are doing. Always know that we are proud of everything you have accomplished. Thank you for your continued support of the Department. Stay healthy!

Phil Sheridan, Professor and Department Chair



This issue of Periodical, the Canisius Chemistry and Biochemistry Newsletter, was prepared under the guidance of Phil Sheridan and Rachel Lapinski.

Faculty & Staff

Phillip Sheridan, Ph.D. Chair, Physical Chemistry Allyson Backstrom, Ph.D. **Organic Chemistry**

Zeenat Bashir, Ph.D. Biochemistry

Joseph Bieron, Ph.D. **Professor Emeritus**

Timothy Gregg, Ph.D. Organic Chemistry

Mariusz Kozik, Ph.D. **Inorganic Chemistry**

Kristina Marohn, M.S. General Chemistry Laboratory

Mary O'Sullivan, Ph.D. **Professor Emeritus**

Peter Schaber, Ph.D. Analytical Chemistry

Jaime Sheridan, Ph.D. Director of Chemistry Laboratories

Steven Szczepankiewicz, Ph.D. Analytical Chemistry

Contact the department office at: sheridap@canisius.edu Or visit us at: canisius.edu\chemistry



Department News



Zeenat Bashir, Teaching Post-Doctoral Fellow in Biochemistry, joined the Department in 2019. Zeenat received her Ph.D. in Molecular Microbiology in 2018 from the University of Nottingham in the UK. Over the past two years she has taught the Introduction to Biochemistry, Cellular Biochemistry, and Molecular Biology courses, as well as several lab classes. This past summer, she conducted research on cellulases from microorganisms with the assistance of two research students.



Roberto Gregorius, Associate Professor of Chemical Education, retired in 2020. Roberto arrived at Canisius in 2008 as an Associate Professor in the Department of Adolescence Education, specializing in chemical education methods. In 2011 he received a joint appointment in the Department of Chemistry and Biochemistry and in 2017 he became a full member of the Department. Roberto was a key contributor to the Department's efforts to increase student success in General Chemistry.



Mary O'Sullivan, Professor of Organic Chemistry, retired in 2020. Mary arrived at Canisius in 2000, quickly endearing herself to the students and her fellow faculty. Mary introduced countless students to the joys of organic chemistry and mentored numerous students in her research laboratory. She was famous for her description of a hybrid orbital (it has a little "s-ness" and a little, well you know the rest), finding the best inexpensive lodging while attending a conference, Britishisms, and supplying cookies for study workshops and seminars. Mary was accorded the title Professor Emerita following her retirement.



Alice Steltermann, Department Administrative Associate, "retired" in 2020. Alice began her career at Canisius over 40 years ago and joined the Department in 2006. She was always a welcoming face in the Department office. Whether dealing with a jammed photocopier, helping frantic students who needed to borrow a calculator before an exam, maintaining the sign-up sheets for SCACS events, or just asking "how's it going", Alice always found time to help everyone who came into the office. The Department isn't the same without her.



Class of 2020

Josh Bobak (BCH): Manufacturing Technician, Thermo Fisher Scientific

Thomas Chameli (CHM HT PSY): Medical School, Georgetown University

Maxwell Chrzanowski (BCH): Medical Physiology M.S., Case Western Reserve University

Patrick Comerford (BCH): Medical School, University at Buffalo

Sean Gibson (CHM HT): Medical School, University at Buffalo

Brittany Gorczyca (BCH): Dental School, University at Buffalo

Daniel Kowalski (CHM)

Hannah Kralles (CHM HT): AmeriCorps Washington AIDS Partnership Health Corps Team; Medical School, George Washington University

Marissa Rizzo (CHM HT): Medical School, LECOM

Lauryn Rudin (BCH): Medical School, University at Buffalo

Alyia Ruggles (CHM HT): Educator, Philadelphia Insectorium and Butterfly Pavilion

Derek Tabaczynski (CHM HT): Medical School, University at Buffalo

Lindsey Williams (EDAD, CHM minor): Chemistry Teacher, Cuba-Rushford High School

Max Yargeau (BCH)

Salvatore Zarrella (CHM HT): Biomedical Forensics M.S., Syracuse University

Class of 2021

Rose Durnell (BCH): Medical School, University at Buffalo

Xavier Krull (CHM ACS): Ph.D. Program Chemistry, Northwestern University

Michael Miller (BCH)

Taylor North (CHM HT): Medical School, LECOM

Jennifer Sescil (BCH ACS): Ph.D. Program Biochemistry, University of Michigan

James Spence (CHM HT)

John Sullivan (BCH): Emergency Medical Technician

Marianthi Vasiliadis (BCH): Applying to Medical School

Wesley Wolf (BCH): Dental School, University at Buffalo

Donors

We would like to express our sincere gratitude to all those listed here who have Elisabeth Geyer, Ph.D. ('13); Jamie made a recent financial contribution to the Department:

Joseph Malinowski ('21); Sean P. Gibson ('20); Peter Krickovich ('20); Joshua Canavan ('19); Filippo Gentile ('19); Matthew Smardz ('19); Peter Weimer ('19); Livia Chase ('18); Kathryn Hobika ('18); Erika Mackie ('18); Joseph Lesh ('17); W. Benton Swanson ('17); Jenna Wallace ('17); Nicole Fusco ('16); Danielle Puglisi ('16); Jonathan ('15) & Nicole Binns ('15); Adam Dannenhoffer ('14); John Heck ('14); Jesse Fodero,

M.D. ('13); David Fortman, Ph.D. ('13); Hitro ('13); David J. Szczur ('13); Jessica Stachowski, Ph.D. ('12); Sean Balkin, J. D. ('11); Robert Stewart, Ph.D. ('11); Ryan Campagna, M.D. ('10); Stephanie Krull ('10); Christopher R. Mekelburg ('10); Kristina B. Garcia ('08); Andrew Minkel ('08); Kathryn E. Leach, Ph.D. ('03); Thomas Marinello ('03); Jeffrey, Ph.D. ('03) & Lindsay Rose, Ph.D.; Muris ('85); Joanne Huber ('82); John, M.D. Kobaslija, Ph.D. ('02); Veronica Maher ('02); Stephanie Soehnlein, M.D. ('02); Sellitto ('01); Ronald Szumigala ('98); Steven H. Szczepankiewicz, Ph.D. ('96);

Lingyun Chen ('95); Maureen Kane, Ph.D. ('95); Leah Cunningham, M.D. ('92); Mark Nowak ('92) and Carolyn Dudek, Ph.D. ('93); Brian Riegel, M.D. ('92); Christopher D. Kane, Ph.D. ('90); Kristen Kulinowski, Ph.D. ('90); Gregory Agoston, Ph.D. ('89); Domenico, D.D.S. ('89) & Maria Berardi ('89); Michael R. ('88) & Colleen Becht; Carolyn K. Weinreb, Ph.D. ('88); Michael F. Inglisa ('82) & Gail Zvijac ('82); Ronald, Ph.D. ('78) & Mary Spohn; Jonathan Stoberl Aaron & Amy Godert, Ph.D. ('01); Laura ('78); Edward ('75) & Mary Bogdan ('77); Mary Theresa A. Colson ('77); Michael J. Cubera ('75); Peter Schaber, Ph.D.



NIH Graduate Fellowship

Ben Swanson (CHM ACS '17) received the Ruth L. Kirschstein National Research Service Award from the National Institutes for Health (NIH). This prestigious fellowship provides funding for predoctoral students enrolled in a program that integrates research with clinical training. Ben's award will provide full financial support for his remaining years of graduate study. Typically, only 300 of these fellowships are awarded annually nationwide. Ben is currently in his fourth year of the D.D.S./Ph.D. program at the University of Michigan. Ben's proposal, "Exosome-mediated Craniofacial Bone Tissue Engineering" was ranked in the top 5% of all proposals submitted that year. His research work focuses on creating ways that augment bone regeneration in the oral cavity to support dental implants. During his time at Canisius, Ben conducted research for three summers with Mariusz Kozik. While presenting a poster on his undergraduate research at the 251st American Chemical Society national meeting, Ben discovered his interest in the dual D.D.S./Ph.D. program at Michigan.



American Chemical Society Fellow



Kristen Kulinowski, Ph.D. (CHM '90), director of the Science and Technology Policy Institute (STPI), was recently named an American Chemical Society (ACS) Fellow in recognition of her outstanding achievements and contributions to science, the profession, and ACS. Kristen currently leads more than 40 researchers at STPI, a federally funded research and development center operated by IDA that provides analysis of national and international science and technology issues for the Office of Science and Technology Policy in the White House, the National Institutes of Health, and the National Science Foundation, among others. "I first became involved in ACS as a student affiliate at Canisius and have been a member ever since," says Kristen. She inspired ACS volunteers to engage effectively with policy makers through her exemplary service as a Congressional Science Policy Fellow, Chair of the Greater Houston Section, and member of the Committee on Chemistry and Public Affairs.

('75); David G. Hangauer, Ph.D. ('74); David Nalewajek, Ph.D. ('74); Daniel E. Rega ('74); Frederick Wiatrowski ('73); Teresa M. Amabile, Ph.D. ('72); Michael V. Darby, Ph.D. ('72); Paul A. Hojnacki ('72); Paul ('72) & Marjorie Inderbitzen ('72); Chris Josef ('72); Michael R. Krajewski ('72); Robert J. Lynch ('72); Paul L. Piciulo, Ph.D. ('72); Stanley Zak, D.D.S ('72); William C. Bogdan ('71); Edmund D'Orazio, M.D. ('71); Steven P. Driska, Ph.D. ('70); Gregory R. Krawczyk ('61); David W. Teloh ('61); James ('70); Carlton H. Jewitt ('69); Martin Besant ('68); Robert D. Inderbitzen ('68); Ann Kuczkowski; David Skelly, Ph.D. Patrick J. Mudd ('68); Paul M. Nagel, Ph.D. ('68); Joseph Rozak ('68); Peter

J. Schirmann, Ph.D. ('68); Stanley A. Sojka, Ph.D. ('68); Thomas R. Stabler ('68); Gerald Wilemski, Ph.D. ('68); Simon W. Ulmer, Jr., Ph.D. ('67); John, Ph.D. ('67) & Lynn ('70) Wieser; Gerald Zon, Ph.D. ('67); Dennis P. Bakalik, Ph.D. ('65); Joseph P. Lafornara, Ph.D. ('64); Joseph A. Kuczkowski, Ph.D. ('63); David J. Manzo, Ph.D. ('63); Kenneth F. Pompi, Ph.D. ('63); William N. Knopka, Ph.D. ('61); Raymond J. Lange, Ph.D. Maul, Ph.D. ('60); Robert, Ph.D.('60) & ('60); Joseph F. Bieron, Ph.D. ('59); James J. Duffy, Ph.D. ('59); Anthony

Marzullo ('59); Robert F. Czaja, Ph.D. ('58); Daniel Jaszka ('52); Daniel & Lisa Canavan; Raymond, Ph.D. & Mary Anne Dannenhoffer, Ph.D.; Kristen Fodero, Pharm.D.; Gerda Gassman; Timothy M. Gregg, Ph.D.; Mariusz Kozik, Ph.D.; James A. Leone, Ph.D.; Kristina Marohn; Mary O'Sullivan, Ph.D.; Phillip Sheridan, Ph.D.; Richard E. Stanton, Ph.D.; Alice F. Steltermann; George Vasiliadis



Alumni Notes

Hannah Kralles (CHM HT '20) received a full-tuition scholarship to George Washington University School of Medicine.

Benjamin Russ (CHM PHY '19) is enrolled in the Ph.D. program in Physics at Old Dominion University.

Matthew Smardz (BCH '19) accepted a position as a Biology Patent Examiner USPTO in Alexandria, VA.

Joshua Canavan (BCH '19) was elected Class President, Class of 2023, at The Ohio State University College of Optometry.

Joseph Lesh (CHM HT '17) served as President of Polity, the medical student-run government of the Jacobs School of Medicine & Biomedical Sciences at the University at Buffalo.

Amy (Forand) Burkhead (BCH '97) was promoted to Group Leader/Principal Scientist in Analytical Formulations Sciences at KBI Biopharma, Inc. in Durham, NC.

John Chodkowski (CHM '80) retired as a Senior Technical Service Specialist at Occidental Chemical Corporation.

Peter Harrington (CHM '72) has published a book titled, *Routes to Essential Medicines: A Workbook for Organic Synthesis*.

Department Seminar Speakers

Ben Swanson (CHM ACS '17), graduate student in the Ph.D./D.D.S. program at the University of Michigan presented a seminar titled, "Biomaterial Approaches to Skeletal Stem Cell Tissue Engineering".

Lauren Evans (BCH ACS '16), graduate student in the Human Genetics and Molecular Biology program at Johns Hopkins University presented a seminar titled, "Determining How Cells Detect and Respond to Centriole Amplification".

Christopher Raylea (CHM HT '14, MBA '17), Research Assistant, Cannabis Clinic at Dent Neurologic Institute presented a seminar titled, "Medical Cannabis: Research and Application in a Clinical Setting".

Matthew Robson, Ph.D. (BCH '07), Assistant Professor, College of Pharmacy, University of Cincinnati presented a seminar titled, "Impact of 5-HT signaling in Traumatic Brain Injury".

Brian Eckenrode, Ph.D. (CHM '81), Research Analytical Chemist at the FBI Counterterrorism and Forensic Science Research Unit (CFSRU) presented a seminar titled, "An Overview of the Research and Support Unit within the FBI's Laboratory Division".

Leadership in Medicine Seminar Course Speakers

Thomas Chameli (CHM HT '20) shared his experiences as an M1 student at Georgetown University School of Medicine. Tom has joined the US Army Health Professions Scholarship Program.

Kristen Robillard, M.D. (BCH '91) shared her journey in medicine including establishing and managing her own practice, serving as the Chair of the Board of Directors for Catholic Medical Partners, and stepping up during the pandemic to serve as Medical Director to open up Western New York's first COVID-19 Post-Acute care facility.

Richard Battaglia, M.D. (BCH '79) discussed some of his many leadership roles in medicine, including international health consulting when he lived for three years in Qatar to help modernize their state health system and his current role serving as the Chief Medical Officer of the American Board of Internal Medicine.



Senior Awards

V. A. Ruskiewicz (1921) Award: Recognition of superlative academic achievement demonstrated by the highest GPA.

WNY ACS Student General Excellence Award: Highest award given by the Department; the recipient is acknowledged for outstanding achievement and significant research accomplishments.

American Institute of Chemists (AIC) Award: Recognition on the basis of a demonstrated record in leadership, ability, character, scholastic achievement, and advancement potential in the chemical professions.

Gerald Zon (1967) Undergraduate Research Award: Recognizes significant research accomplishments.

American Chemical Society Analytical Division Undergraduate Award: Recognizes an outstanding senior undergraduate analytical chemistry student.

Matthew Berardi ('20)

Gerald Zon Research Award

Maxwell Chrzanowski ('20)

American Institute of Chemists Award in Biochemistry Gerald Zon Research Award

Patrick Comerford ('20)

Gerald Zon Research Award

Sean Gibson ('20)

Gerald Zon Research Award

Brittany Gorczyca ('20)

Gerald Zon Research Award

Marissa Rizzo ('20)

Gerald Zon Research Award

Lauryn Rudin ('20)

V. A. Ruszkiewicz Award

WNY ACS Student General Excellence Award in Biochemistry

Gerald Zon Research Award

Alyia Ruggles ('20)

American Institute of Chemists Award in Chemistry

Derek Tabaczynski ('20)

V. A. Ruszkiewicz Award

WNY ACS Student General Excellence Award in Chemistry

ACS Analytical Chemistry Undergraduate Award Gerald Zon Research Award

Lindsey Williams ('20)

Gerald Zon Research Award

Salvatore Zarrella ('20)

Gerald Zon Research Award

Rose Durnell ('21)

American Institute of Chemists Award in Biochemistry Gerald Zon Research Award

Xavier Krull ('21)

V. A. Ruszkiewicz Award

WNY ACS Student General Excellence Award in Chemistry

Taylor North ('21)

American Institute of Chemists Award in Chemistry

Jennifer Sescil ('21)

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Gerald Zon Research Award

Marianthi Vasiliadis ('21)

V. A. Ruszkiewicz Award



Senior Party 2020

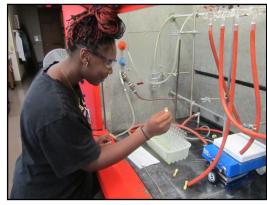


Student Researchers

The Department is happy to report that, barring any unforeseen circumstances, the 6th annual Summer Research Symposium will take place on Friday July 8th, 2022. Please save the date and we hope to see you there!













Frank Dinan Research Scholars

John Federice (CHM ACS '23) was selected as this year's Frank Dinan Research Scholar. The Frank Dinan Research Scholars are supported by a continued generous financial gift from David Hangauer (CHM '74) in honor of Professor Emeritus Frank Dinan. John worked this summer in the research laboratory of Tim Gregg on the synthesis of a member of the 5,6-dihydro-2H-pyran-2-one class of compounds, with the goal of determining the absolute configuration of the target compound, rhytismatone B.





Zeenat Bashir: Isolation of novel cellulases from decaying wood

Nicholas Gossels (BCH '23) Shane Sullivan (CHM ACS '23)

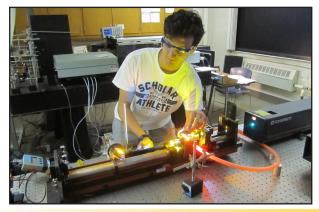
Timothy Gregg: Towards a total synthesis of rhytismatone B and a novel dihydroisocoumarin

Vanessa Mason (CHM '22) John Federice (CHM ACS '23)

Mariusz Kozik: Theoretical predictions of ³¹P NMR chemical shifts for paramagnetic polyoxotungstates Dylan Lis (CHM HT '22),

Peter Schaber: Analysis of lead soil contamination in samples collected along the Buffalo and Niagara Rivers

Lanie Masset (ENV SCI '23) Hannah Rivett (BCH ACS '23) Julia Schurr (PSY '23)



Phillip Sheridan: Computational and laser excitation spectroscopic studies of metal isothiocyanates

Andy Erdman (BCH ACS '22) Alann Au (CHM ACS '23)

Steven Szczepankiewicz: PCB analysis of salmon and trout samples from Lake Ontario

Nathan Kohler (CHM ACS '22) Benjamin Oreskovic (CHM ACS '22) Aaron Szczepankiewicz (CHM ACS '24)





Peer-Reviewed Publications*

W. B. Swanson, D. Tabaczynski, D. Lis, E. Zurek, and M. Kozik, "Direct Experimental ³¹P 2D DOSY NMR Evidence for Oligomerization of Transition-Metal Substituted Polyoxotungstates in Nonpolar Solvents," *Polyhedron*, **2021**, 204, 115174.

M. D. Berardi, F. Gentile, I. Kozik and T. M. Gregg, "Aldol Condensation Reaction Rate Demonstrates Steric and Electronic Substituent Effects in the Organic Chemistry Lab," *J. Chem. Educ.*, **2021**, 98, 1732.

*Canisius Undergraduates in Bold

Meeting Presentations*

M. Burton, P. M. Sheridan, and L. M. Ziurys, "The Pure Rotational Spectrum of the SiP Radical ($X^2\Pi$)," International Symposium on Molecular Spectroscopy(virtual), Champaign-Urbana, IL, 2021.

A. C. Erdman and P. M. Sheridan, "DFT Study of Aluminum Monoisothiocyanate Isomers," 261st ACS National Meeting(virtual), San Antonio, TX, 2021.

*Canisius Undergraduates in Bold



A Blast from the Past...



1972



2009

2003



2009



1980's

Department Scholarships

Joseph F. Bieron, Ph.D. '59 Scholarship Andrew Erdman (BCH ACS/MAT '22)

James G. Colson, Ph.D. '58 Scholarship Benjamin Oreskovic (CHM ACS '22)

Emil R. Inderbitzen '40 Memorial Scholarship Jennifer Sescil (BCH ACS '21)

Eileen Hogenkamp Klubek '90 Scholarship Marianthi Vasiliadis (BCH '21) Manzo Family Scholarship

Xavier C. Krull (CHM ACS '21)

Austin V. & Lillian J. Signeur Scholarship John Bressette (CHM/EDU '23) Nathan J. Kohler (CHM ACS '22)

Gerald Zon '67 *Scholarship in Chemistry and Biochemistry* Rose Durnell (BCH '21)



The Student Chapter of the ACS

In the fall semester of 2019, the Canisius SCACS hosted a number of well-attended events, including a trip to the Sky High Ropes Course in Ellicottville, an element themed scavenger hunt during National Chemistry Week, an "Over the Falls" escape room adventure, and the annual Christmas party and chaotic gift exchange. The spring 2020 semester started out strong with a bowling night and senior party, however, the shift to remote learning caused by the pandemic resulted in the cancellation of remaining planned activities. Canisius SCACS received an Honorable Mention Award for the 2019-2020 academic year. The 2020-2021 academic year saw a cautious return to in-person activities with a trip to the Cambria corn maze, roller-skating, and a small end-of-semester gathering to celebrate the seniors.

2019-2020

President: Matthew Berardi (BIO '20) Vice President: Joseph Malinowski (BIO '21) Treasurer: Sean Gibson (CHM HT '20) Secretary: Xavier Krull (CHM ACS '21) Historian: Jesse Canavan (PreEng '22) Faculty Advisor: Phil Sheridan

2020-2021

President: Rose Durnell (BCH '21) Vice President: Xavier Krull (CHM ACS '21)

Treasurer: Grace Gibson (BCH '22) Secretary: Dyaln Lis (BCH '22)

Historian: Andrew Erdman (BCH ACS '22)

Faculty Advisor: Phil Sheridan













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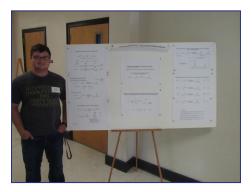
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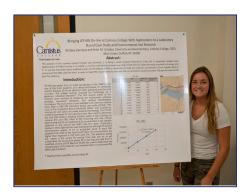
Keep us up to date! https://www.canisius.edu/content/chemistry-and-biochemistry-alumni-information-update

Thank You For Your Continued Support!

Only seven years ago, the Department began an ambitious journey to raise \$1 million to create a research endowment to support our student-centered summer research program. Because of your generosity, we have reached that milestone! Your financial support has directly contributed to the success of our students. We hope that we can continue to rely on your generosity as we build on our success by raising the **next \$1 million**.



Jacob Iannuzzelli (CHM ACS '17) **University of Rochester** Chemistry Ph.D. Program



Brittany Gorczyca (BCH '20) University at Buffalo Dental School



James Rutowski (CHM ACS '17) University at Buffalo Medical School