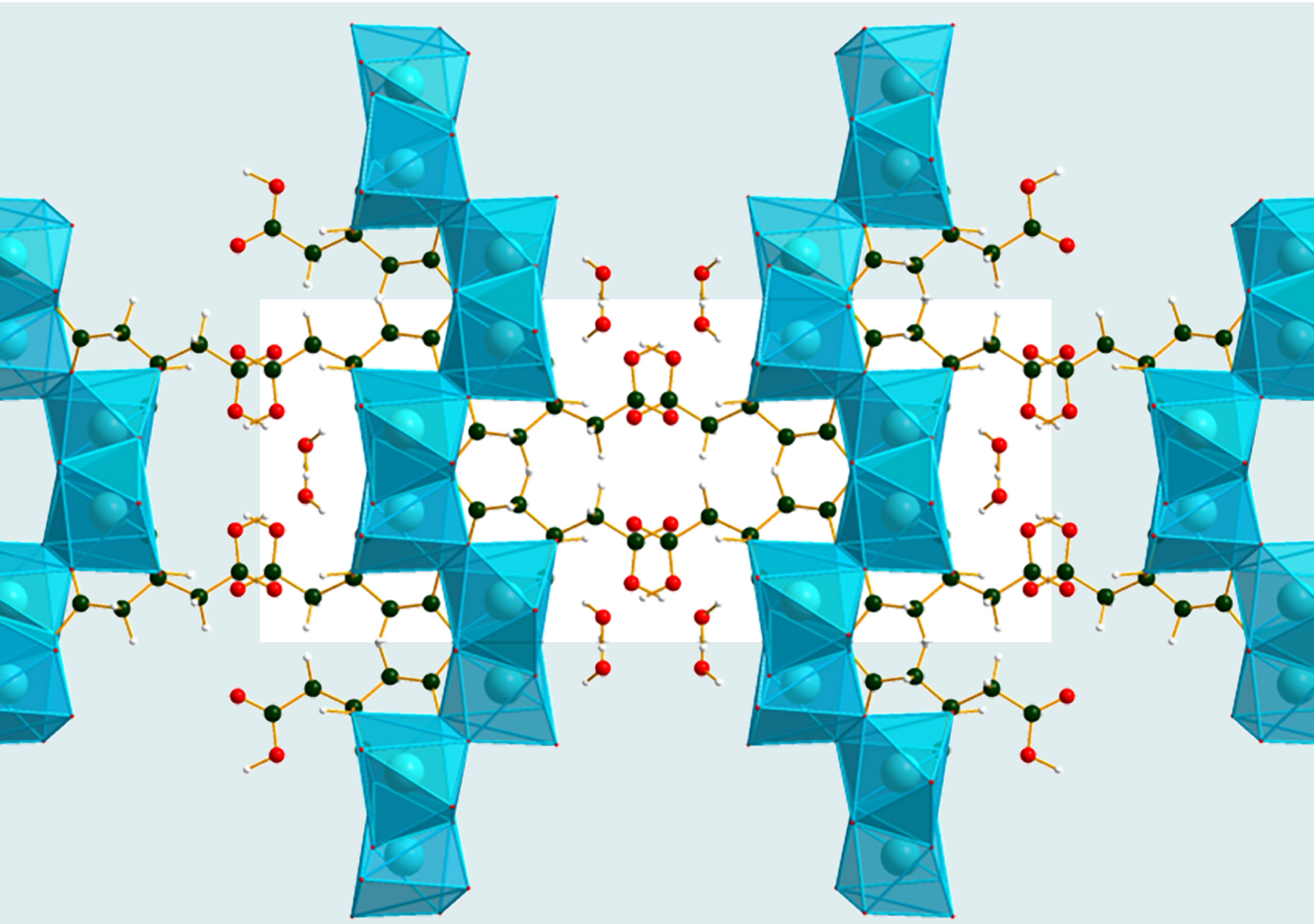
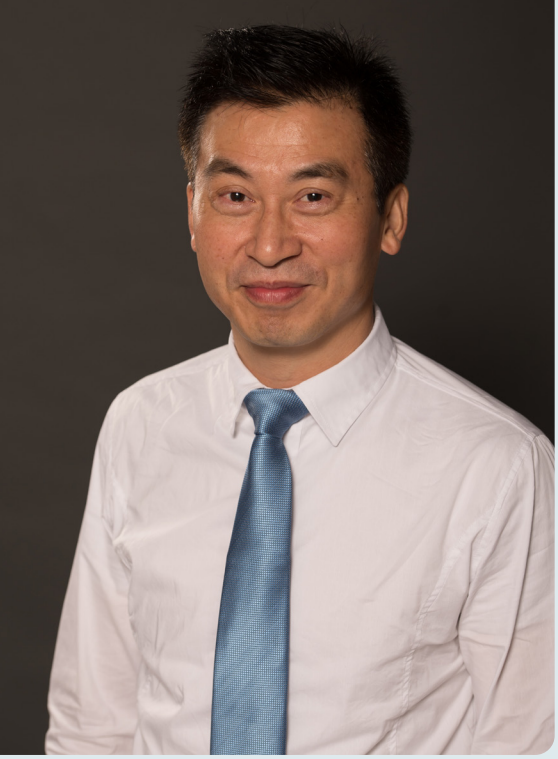
ILLINOIS TECH | Department of Chemistry

CHEMISTRY ELEMENTS

A publication of the Department of Chemistry at Illinois Tech



2021 Issue



Letter from the Chair

Welcome to the ninth annual issue of *Chemistry Elements*. We just participated in the inauguration of our 10th president here at Illinois Tech—Raj Echambadi—on Friday, September 17. We are excited to keep moving forward and embracing new areas of opportunity, including lifelong learning, under his leadership. Along with the inauguration, we were proud to have Ted Brown (CHEM '50), professor emeritus at the University of Illinois at Urbana-Champaign, back on campus to accept the prestigious Alumni Medal, the highest honor bestowed by the Illinois Tech Alumni Association. On the morning of inauguration day, Ted gave a special lecture to our students and faculty on the milestones of his career and his interdisciplinary successes—for example, Beckman Institute at University of Illinois, for which he served as the founding director. Ted has authored a number of books, most importantly co-authoring *Chemistry: The Central Science*, now in its 14th edition. Ted continues to support our students and department through several different means.

Another piece of remarkable news is that we welcomed 11 new undergraduate students—the second-highest number in the last 30 years or so, even under the severe impact of the pandemic. We appreciate the support from various offices, including the Office of Undergraduate Admission and the Office of Marketing and Communications, along with the efforts of our faculty, especially Braja Mandal and Katie Leight. We strive to keep increasing our student population.

In the meanwhile, we have offered several opportunities to enhance our students' experience this past year. In January 2021 we arranged the Virtual ACS Career Kick-Starter workshop for all of our chemistry students and post-docs to learn about chemistry career paths. Our chemistry students also had fun planting perennials at our building entrance for Earth Day in April. To learn from our students' perspectives, we had exit interviews with our graduating undergraduates in May. We did have a small in-person spring commencement ceremony in the Robert A. Pritzker Science Center building with Lewis College of Science and Letters Dean Christine Himes and chairs of the science departments. Kaitlin Lerner (M.S. ACHM '21) gave the commencement speech representing our graduating students in chemistry for the larger virtual ceremony.

In the summer, we held the Summer Scholar program again, where more than 10 high school and community college students conducted hands-on research in our faculty labs. David Minh held an international workshop in the summer on modeling biological macromolecules, utilizing various software programs and web browsers. On the Friday before the fall 2021 semester started, we joined the other Lewis College departments in a gala poster session at Hermann Hall, which also included a barbecue picnic. This event was well attended by all, and we had several chemistry student poster winners at the undergraduate and graduate level. During the first week of the fall semester, we held a lunch gathering to welcome our new students. In the second week, we had a department gathering to build stronger connections between our students and faculty.

Notably, after offering the Environmental Chemistry course in fall 2020, we offered an Environmental Analytical Chemistry course in the spring, also for the first time, as part of our recently developed Bachelor of Science in Environmental Chemistry. Wayne Whipple, a retired analytical chemist from the United States Environmental Protection Agency, led the lectures and brought in several well-known scientists for guest lectures. In the fall, we invested in our new Forensic Chemistry lecture and lab courses—a real project and undertaking—that serves as a basis for the Bachelor of Science in Forensic Chemistry. We are partnering with the facilities and staff at McCrone Research Institute and are having expert Wayne Moorehead lead both courses.

We are pleased to welcome Sameh Elsaidi to our faculty as an assistant professor in January 2022. Elsaidi's work focuses on the exploitation of crystal engineering concepts and catalytic applications of porous materials, particularly the capture and conversion of gases (such as carbon dioxide, methane, and hydrogen) into useful materials. He has previously worked at Alexandria University in Egypt, the Pacific Northwest National Laboratory, and the National Energy Technology Laboratory in Pittsburgh. On the other hand, Jean-Luc Ayitou relocated to our neighbor institute, University of Illinois Chicago, in August 2021. We wish him all the best at his new position.

Congratulations to Adam Hock for his new research awards: one from Argonne National Laboratory involving interface synthesis, and one from the Semiconductor Research Corporation involving copper atomic layer etching. Joy Chong was recently featured in Illinois Tech news, and continues her endeavor to develop safe, effective, and targeted drugs for cancer and neurodegenerative diseases while she receives more funds from the National Institutes of Health. Rong Wang secured a new grant from the NIH by collaborating with UIC and leading several chemistry faculty members, including Richard Guan, Ishaque Khan, David Minh, and myself, among others, on new research pertaining to a salivary sensor. Adam Hock and Richard Guan are on sabbatical this semester; we anticipate hearing about their interesting pursuits.

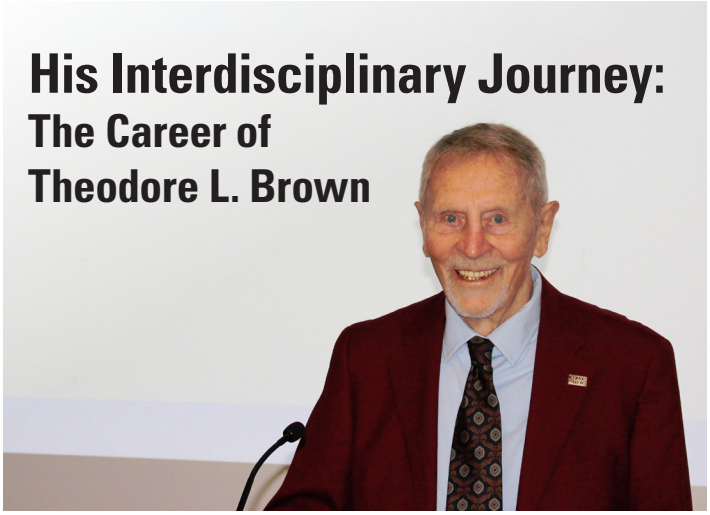
We look forward to climbing out of the pandemic hardships and developing exciting scholarly and educational enterprises in the year ahead. Thank you all for your continued support of the Department of Chemistry at Illinois Tech.

I wish you good health and much happiness in 2022!

Yuanbing Mao
Professor and Chair
Department of Chemistry

December 2021

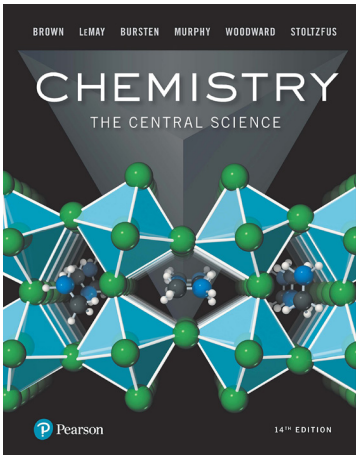
His Interdisciplinary Journey: The Career of Theodore L. Brown



The recipient of the 2021 Illinois Institute of Technology Alumni Medal award (the highest honor bestowed by the Illinois Tech Alumni Association), Theodore L. "Ted" Brown (CHEM '50) spoke in the Department of Chemistry on September 17. His talk was autobiographical, with the intent of inspiring interdisciplinary thinking. After graduating from Illinois Tech, and following three years of service in the United States Navy, Brown completed his Ph.D. work at Michigan State University, focusing on the structures and properties of alkyllithium compounds. He joined the faculty of the Department of Chemistry at the University of Illinois at Urbana-Champaign in 1956. His multifaceted career culminated with his leadership in establishing the Beckman Institute at Illinois. Brown is now professor emeritus at University of Illinois.

Brown began his talk by providing examples of great interdisciplinary thinkers such as Aristotle in ancient Greece, who invented several fields of science, and Robert Hooke in the eighteenth century, who was the inventor of modern microscopy and a London architect. Brown reviewed how, especially from the 1940s through the 1980s, specialization was emphasized—departments became "silos" with little encouragement for faculty to collaborate across departmental or college boundaries.

Brown related that early in his career, he sought to establish collaborations by opening up channels of communication. In addition to his scientific publications, he co-authored a textbook, *Chemistry: The Central Science* in 1977. Now in its 14th edition, the textbook discusses the roles of chemistry in society.

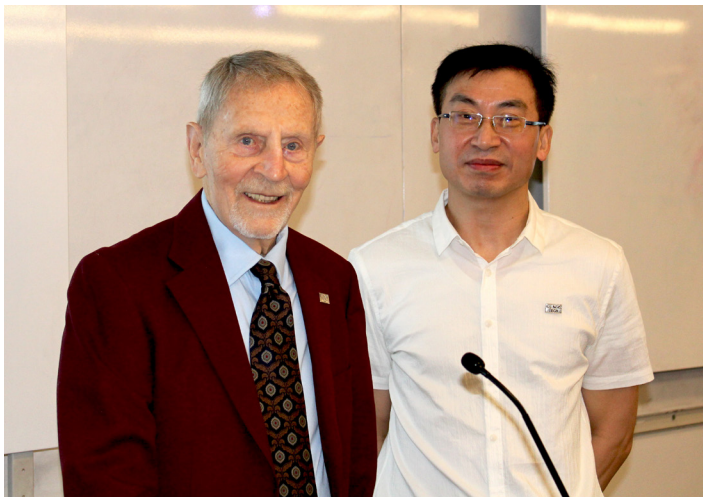


In the early 1970s Brown took a sabbatical at the International Meteorological Institute in Stockholm to learn more about the emerging issue of global warming. He was appointed vice chancellor for research and dean of the Graduate School at Illinois in 1980. In 1985 Arnold and Mabel Beckman gave a major gift to Illinois to design and build the Arnold and Mabel Beckman Institute, the largest interdisciplinary center in academe. Brown was charged with leading the project, and became its founding director in 1987 as the institute was under construction.

The Beckman Institute formally opened at Illinois in 1989. Brown details the experience of seeing this dynamic project through in his book *Bridging Divides* (2009). A few of the institute's "thrust areas" include molecular and electronic nanostructures, biological intelligence, and human-computer intelligent interaction. Brown stepped down as director when he retired in 1993.

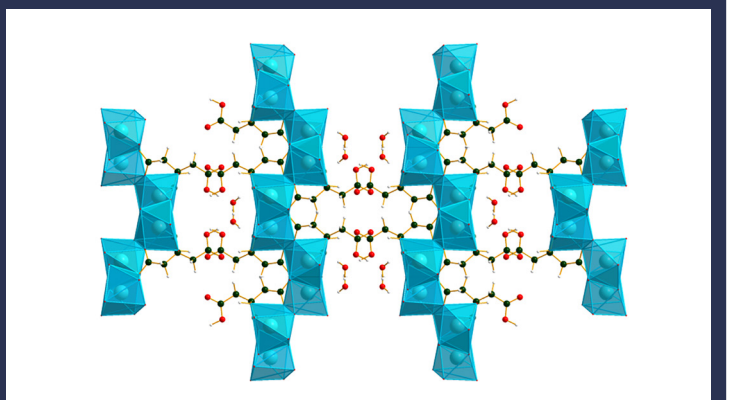
Brown closed his talk with a warm thank you to his alma mater for the award of the Alumni Medal.

Beckman Institute



Theodore L. Brown and Yuanbing Mao

COVER: Strontium (hydrogen citrate) monohydrate, one of the citrate structures, the microstructural properties of which are researched by Illinois Institute of Technology Research Professor of Chemistry James Kadu



Welcome to New Assistant Professor Sameh Elsaidi

Sameh Elsaidi, who begins his role as assistant professor of chemistry at Illinois Institute of Technology in January 2022, joins us as our newest materials chemistry faculty member. Elsaidi received his B.Sc. and M.Sc. degrees from Alexandria University in Egypt and his Ph.D. from the University of South Florida. After graduating from USF in 2014, he returned to Egypt to assume the position of assistant professor of chemistry at Alexandria. He secured funding for his research from the institutional partnership program that supported his return to the United States to work as a visiting assistant professor at Pacific Northwest National Laborator. Before joining Illinois Tech, Elsaidi worked as a research scientist at the National Energy Technology Laboratory. His research focuses on the design, synthesis, and applications of functional porous materials, composite materials, and multicomponent membranes. He has more than 30 publications and one patent in the field of metal-organic frameworks and their composites for gas separations (CO_2, Xe, Kr), aqueous separations (rare-earth elements), gas storage (H_2 and CH_4), and nuclear waste management (TcO_4^-, Xe, Kr, Cs^+, radiation-resistant materials) and their processing in the form of monoliths, thin-films, membranes, and core-shell composites. His contributions to the field have been recognized by more than 1,200 citations, an h-index of 18, and several featured works. His recent work has been featured in the following news releases:

- MIT News, "Novel Gas-Capture Approach Advances Nuclear Fuel"
- The front page of the premiere issue of NETL's Carbon Capture Newsletter
- The NETL's News, "Novel Carbon Capture Technology is More than the Sum of its Parts"
- PNNL's News "Form Damages Function and Magnetism Suffers"

Sameh Elsaidi

Elsaidi was the conference chair and organizer of the Smartly Engineered Materials International Meeting 2021. In 2017 he organized the International Conference on Chemistry Progress for Sustainable Development in Egypt. He chaired a session on Chemistry of Materials: Metal Organic Frameworks at the 2019 American Chemical Society meeting. He is also a guest editor for a special issue of *Membranes* published by the Multidisciplinary Digital Publishing Institute titled "Advances in MOF-based Membranes."

New Research Aims to Make PET Scan Imaging Safer

by Linsey Maughan, reprinted from Illinois Tech News, October 2021

When an imaging agent meant to help detect diseases gets flagged for causing harm to the body, it's time to reassess. Together with a team of three graduate student researchers in her lab, Illinois Institute of Technology Professor of Chemistry Hyun-soon (Joy) Chong is working to develop a new, healthier imaging agent for use in positron emission tomography scans. Chong's four-year research project launched in September 2020 with a grant from the National Institutes of Health totaling $1.5 million. The first and second years of the project are focused on the synthesis of new chelating agents for PET imaging, Chong says, while the third and fourth years will focus more on testing the agents.

PET scans, though non-invasive and more sensitive in nature than other forms of imaging, use a radioactive tracer to locate and detect diseased cells such as tumors, and to produce images of tumors. One component of a radioactive tracer is Zirconium-89, a radioactive metal that often binds to bones and can cause radiation toxicity including bone marrow toxicity. Use of an effective chelating agent—or binding agent, in other words—that can tightly hold Zirconium-89 is critical for safe PET scans, Chong says.

Additional concerns about less stable Zirconium-89-based PET tracers include diminished image quality and inaccuracies in measuring the dosage absorbed by the body. Chong and her colleagues aim to develop chelating agents that can serve as safer and more effective alternatives to the chelating agent for Zirconium-89-based PET imaging that is used now.

"A chelating agent is a kind of chemical that binds to a metal," Chong says. "[We have] a long history of making chelating agents for potential applications in PET imaging of cancer. We are working now [on the fundamental chemistry] to make better chelating agents for Zirconium-89 to realize sensitive and safe PET imaging." Once the new chelation agents have been produced, Chong and her team will combine Zirconium-89 and an antibody using the new chelation agent. They will create antibody-targeted Zirconium-89-based PET tracers with which they can test their new chelating agents in live tumor-bearing mice. A longtime collaborator of Chong's, Buck Rogers, a professor of radiation oncology at Washington University in St. Louis and co-investigator on the project, will provide support with molecular imaging and animal studies. "We are making many different chelating agents and will select the best agents," Chong says. "The best one will be conjugated to an antibody, and that antibody conjugate will be labeled with Zirconium-89. We are sending [Rogers] the antibody conjugates. His lab will conduct the preclinical studies involving the tumor-bearing mice."

Joy Chong

If the new chelating agents prove successful in binding Zirconium-89 stably, the team will then work to develop viable preclinical tracers for PET imaging.

In the future, Chong says she would like to develop superior chelation chemistry for Zirconinum-89 that can be used to make many different PET tracers. "There are many antibodies that are clinically approved for cancer therapy," Chong says. "The new chelating agents bound to Zirconium-89, if successfully developed, can be linked to any of the clinically available antibodies for targeting and visualizing tumors. That's a follow-up study."

Research reported in this publication was supported by funding from the National Institutes of Health under award number R01EB029800. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Illinois Tech Chemistry Chair is Honored Guest at Nanomaterials Indo-U.S. Event

Professor Yuanbing Mao was a guest of honor for a summer webinar (June 1–2) with lecture series (June 3–9) on Advanced Functional Materials. The event was organized by Jamia Millia Islamia Department of Chemistry to highlight useful advanced functional nanomaterials in the area of hydrogen/green/renewable energy and environmental remediation. Mao, along with Sarbajit Banerjee, a professor of chemistry from Texas A&M University, gave the special address about the program and collaborative research.

Chemistry Professor Uses Science to Help Improve Others' Quality of Life

by Linsey Maughan, reprinted in part from *Big Picture Magazine*, spring 2021

What if your toothbrush could detect a gum infection, helping to prevent the need for dental surgery? Or if silk cocoons from silkworms could help restore vital tissue in the female body? These are just two of the latest scientific advancements underway in Professor of Chemistry Rong Wang's research lab. "We make basic science useful in practical applications for improving the quality of life," says Wang, who is celebrating 20 years of teaching and research at Illinois Institute of Technology. "I always tell my students that I partner with them to explore new areas and find solutions by invention."

Originally from China, Wang studied physics as an undergraduate at Jilin University in Changchun, China, and then studied chemistry as a doctoral student at the University of Tokyo. After completing her Ph.D., Wang conducted biology research as a post-doc at Los Alamos National Laboratory in New Mexico. "I am particularly excited about learning from natural biological processes, then tailoring functional materials and inventing new methods for early disease diagnosis, prevention of disease progression, and effective treatments." Wang says.

In 2020 Wang, along with a multidisciplinary team of 15 other professors from Illinois Tech and the University of Illinois at Chicago's dental school, began work toward the development of a saliva-based point-of-care sensor device that will enable the detection of early signs of periodontitis (gum disease). The Centers for Disease Control and Prevention report that nearly 50 percent of adults have some form of periodontal disease. Wang and her colleagues will work to develop novel sensor modalities capable of detecting a variety of chemicals in saliva. The sensors will be placed in a microfluidic device—also referred to as a "lab-on-a-chip"—that will be placed inside a toothbrush that will send low-power signals and communication to clinicians using technologies such as Bluetooth and Linux. The team has received funding support from the Pritzker Institute of Biomedical Science and Engineering via the Exploratory Initiative Program, as well as funding from the National Institutes of Health and National Institute of Dental and Craniofacial Research. "By integrating research advances in sensing elements, microfluidics, communications, data analysis, and artificial intelligence, we would ultimately like to develop a Smart Total Oral Care (STOC) system that can be used for unobtrusive, accurate, and real-time saliva-based self-monitoring for health care," Wang says. "Such a device will assist in the modern clinical advancements, such as teledentistry and telemedicine. New commercial products can be developed based on the biosensor, such as smart toothbrushes and wearable oral devices similar to nightguards."

Additional research ongoing in Wang's lab includes a project utilizing silk cocoons from silkworms to support the regeneration and restoration of pelvic floor tissue in women to help treat pelvic organ prolapse. Prolapse occurs when muscles and tissue in the female body weaken and can no longer hold pelvic organs including the uterus, bladder, and rectum in place. Wang says the silk material can help revive the function of fibroblasts—cells that help make up the structural framework of tissue—through an in vitro electrical stimulation process. A cell imbedded fiber matrix can be injected or applied as an internal bandage or implant, and can be repeatedly used to stimulate the cells' renewal through a medicated electrical stimulation process. The matrices degrade in approximately 20 days and should be replaced by native tissue. The project began with the use of spider silk proteins, but the team later replaced them with silkworm silk proteins. The silk cocoon research is funded by a $440,000 grant from the National Institutes of Health; collaborators include colleagues from Rush University Medical Center and Cleveland Clinic Lerner Research Institute.

Research reported in this publication was supported by funding from the National Institutes of Health and National Institute of Dental and Craniofacial Research under Award Number R01DE031832, as well as funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development of the National Institutes of Health under Award Number R15HD096410. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Summer International Workshop in Modeling Biological Macromolecules

Associate Professor and Robert E. Frey Jr. Endowed Chair in Chemistry David Minh hosted an International Workshop on Modeling Biological Macromolecules from June 28 to July 2. This was a one-week event that included both theory and computer laboratory. Students were allowed to participate as part of CHEM 456, Computational Biochemistry and Drug Design.

In-person workshop participants from the Minh research group

New Course Offering in Forensic Chemistry

In fall 2021 the Department of Chemistry at Illinois Institute of Technology offered its first course on forensics chemistry, CHEM 475 and the CHEM 476 lab, which has proven to be quite an undertaking, gathering together the many types of lab supplies. The course is headed by expert Wayne Moorehead, who earned a bachelor of science in criminalistics from University of California, Berkeley and a master of science in criminalistics from California State University, Los Angeles. Moorehead is a fellow of the American Academy of Forensic Science who worked for 30-plus years with the Orange County Sheriff's Department crime laboratory. Before retiring, Moorehead contracted with the crime laboratory of the Los Angeles County Sheriff's Department to teach explosives analysis to three senior criminalists, created an online course for National University's forensic science master's program, and helped develop a high school program.

CHEM 475/476 spans a variety of topics including theory and application of forensic microscopy, and covering drug analysis, toxicology analysis, trace evidence, along with fire debris and explosives. In addition, the instructor presents principles of criminalistics and scientific philosophy. He explains the importance of chain of custody and proper packaging of evidence, and differentiates ethics from morals and ethical importance as it relates to criminalistics.

During the first six weeks, students went to the McCrone Research Institute in Chicago to learn theory and hands-on polarizing light microscopy (PLM). Theory of light interaction with matter was presented with hands-on microscopy in order to rapidly identify particles using optical properties, and various methods and tests. In the second part of the lab course at Illinois Tech, students follow standards and lab accreditation guidelines for case notes, reports, evidence handling, toxicology disciplines, and simulated court testimony. They use multiple chemical analytical techniques that forensic scientists use in their typical analyses.

Sky's the Limit

By Linsey Maughan, reprinted from *Big Picture Magazine,* spring 2021

Third-year student Diana Csercse is the first-ever Illinois Institute of Technology student to enroll in the new Bachelor of Science in Bioanalytical Chemistry program, which itself is the first program of its kind in the United States. A native of Brasov, Romania, Csercse is now gaining hands-on experience in an Analytical Method Development Lab course.

"This is an important lab because we are able to directly experience the equipment and work through the data analysis," Csercse says. "We have worked with gas chromatography, high-performance liquid chromatography, ultraviolet visible spectrometry, and atomic spectrometry machines. We write extensive reports to finish off the experience."

Csercse is also making valuable connections at Illinois Tech, including with industry experts who visit her classes as guest speakers. One guest in particular—a bioanalytical chemist working at NASA—made a potentially life-changing impression on Csercse.

Diana Csercse (CHEM 3rd Year)

"[The fact that she worked for NASA] gave me chills," Csercse says. "I didn't know it was possible to be a chemist and work for NASA. I should've known, but it was almost an unreachable goal in my brain. When we spoke, she not only gave me her email to connect with her, but she applauded me. She said, 'NASA looks for people like you: someone who will make their way up and introduce themselves. She showed me it is possible."

Csercse says she plans to find a laboratory job upon graduation and work her way up in the field.

"I do dream big, with one ultimate goal, and that is to work for NASA," she says.

The Importance of Data Integrity in the Analytical Chem Lab

Greg Vanderstel, a current Illinois Tech analytical chemistry student and master's candidate, and Adjunct Instructor of Chemistry Kim Huynh-Ba published an article on the Institute of Validation Technology Network in the *Journal of GXP*, volume 25, issue 2 in March 2021. The paper, titled "Contemporaneous Data Recording: How Does It Impact the Analytical Laboratory?," responds to a disturbing trend of increased warning letters concerning data integrity in recent years. Good data must meet the "ALCOA" standard, established in the 1990s, of being attributable, legible, contemporaneous, original, and accurate. Since the '90s, however, the acronym has been expanded to include new criteria: Complete, Consistent, Enduring, and Available. Vanderstel and Huynh-Ba's article explores the global regulatory expectations regarding data and how contemporaneous data (data recorded in the lab, whether it is a time, measurement, or observation when the work is being completed) is a critical requirement of data integrity.

Congratulations to Our 2021–22 Kilpatrick Fellow

Damola Taye Shuaib, Ph.D. Candidate

New Environmental Analytical Chemistry Course Taught by Expert in the Field

In spring 2021 environmental chemist Wayne Whipple taught CHEM 473. Whipple received his Ph.D. in physical chemistry with an emphasis on atmospheric chemistry at the University of California, Irvine. He received his B.S. degree in chemistry from the University of Alaska Anchorage. Whipple has worked for the United States Environmental Protection Agency for about 20 years, the U.S. Army in Europe for three years, and has worked on research with NASA as part of the Global Tropospheric Experiment. Whipple brought some excellent researchers to the course as guest lecturers, including alum Susan Solomon (CHEM '77), Ellen Swallow Richards Professor of Atmospheric Chemistry & Climate Science, Massachusetts Institute of Technology.

Students use statistical calculations for analyzing data and assessing data quality. It is hoped that after the course students can look more critically at methodologies for collecting environmental data and the results from analytical tools. The data from analytical chemists are

used by policymakers for regulatory purposes, earth systems researchers to study the health of our planet, health care professionals, and legal and justice fields. Defining the quality of the data collected is critical in order to effectively protect health and the environment. The data shared around the planet must be comparable and contain a known and defined quality. Organizational institutions have been developed to standardize the methods and techniques to collect this data, an important and difficult part of the field. Students learn about the instruments used and methods ranging from space-based remote sensing, aircraft, and mobile and stationary ground measurements to laboratory-based analysis. Students also work with individual case studies where they are presented with environmental problems and must define the tools used to collect the necessary data. Whipple assigns videos that describe major health concerns affecting the planet as a whole, the nation, and individual regions, and students can choose what to investigate and report on.

Congratulations to Katie Leight

Katherine (Katie) Leight, senior lecturer and associate chair of the Department of Chemistry, received the 2021 Illinois Institute of Technology Board of Trustees Outstanding Undergraduate Teaching Award.

Earth Day Celebrated at Illinois Tech

The Department of Chemistry at Illinois Institute of Technology hosted an Earth Day event on April 22 in which undergraduate and graduate students planted perennials at the west entrance of the Pritzker Science building. This event was a cooperative effort with the Illinois Tech facilities department, and faculty member Ben Zion provided an ecology-oriented music playlist that emanated from a large guitar amp, energizing the event. The yellow black-eyed Susan daisies, orange and red butterfly weed, and purple-hued prairie dropseed grass bloomed in the summer and presented a colorful display for the start of the fall semester. Some students reported that this was their first gardening experience and that they could see the fruits of their labor. A big thanks is due to the facilities department for finding these plant varieties and taking care of their regular watering.

2020–2021 Student Awards

Kilpatrick Scholarship

An Ling L. Engebretson
Aaron S. Gregory

Undergraduate Service Award

Enya H. Mulroy

Undergraduate Junior Award

Andres Martinez

Undergraduate Senior Award

Rachel Bechtel

Chemistry Graduate Research Fellowships

Elwin Clutter
Forough Jahanbazi
Artur Suzanowicz

Chemistry Graduate Teaching Fellowship

Thi Hong Ha Nguyen

Best TAs

Thi Hong Ha Nguyen
Thulitha Abeywickrama

Graduate Service Award

Artur Suzanowicz

Summer Scholars

Amie Kitjasateanphun, Whitney Young High School (Chong lab); **Christina Li**, Whitney Young High School (Chong lab); **Lluvia Munoz**, De La Salle Institute (Chong lab); **Miguel Arroyo**, De La Salle Institute (Hock lab); **Bianca Turner**, Oak Park River Forest High School (Mandal lab); **Nicolette Bennett**, Saint Ignatius College Prep (Mandal lab); **Sam Nobile**, Whitney Young High School (Mandal lab); **Ahmed Ahmed**, Amos Alonzo Stagg High School (Mao lab); **Katerina Alikakos**, Amos Alonzo Stagg High School (Mao lab); **Diamond Cox**, De La Salle Institute (Mao lab); **Hazem Daghamin**, Amos Alonzo Stagg High School (Mao lab); **Autumn Provine**, Saint Ignatius College Prep (Mao lab); **Olga Garklavs**, Wilbur Wright College, City Colleges of Chicago (Wang lab)

2020-2021 Degree Conferrals

Bachelor of Science in Chemistry

Abdallah Hasan
Victoria Sabo
Zachary Schauerman
An Ling Engebretson
Helena Janinah
Shawna Jumper
Ameen Khan
Joseph O'Shea
Isaiah Pittman
Ismael Sanchez

Master of Science in Chemistry

Youngjin Lee
Xueying Fang
An Ling Engebretson
Joseph O'Shea
Ismael Sanchez

Master of Science in Analytical Chemistry

Alexis Hightman
Andres Yepez
Kathryn Alic
Makayla Chipka
Emily Kaniewski
Kaitlin Lerner
Samuel Giuffre
Meghan Griffiths
Joseph Lustig
Jackyln Merson
Matthew O'Connor
Elliott Rice
Nick Schimp
Ariella Tavor
Daniel Taylor
Andrew Taylor

Doctor of Philosophy in Chemistry

Ao Guo (Adviser: Rong Wang). Dissertation: "Unraveling the Factors Affecting Virus Adhesion to Food Contact Materials and Virus-Virus Interaction: A Nanoscopic Study"

Pengfei Liu (Adviser: Adam Hock). Dissertation: "Atomic Layer Deposition Studies of Gold and Tungsten Disulfide"

Yin Ma (Adviser: Rong Wang). Dissertation: "The Role of Fibrillar Collagen in Tissue Function"

Wendy Zhao (Adviser: Braja Mandal). Dissertation: "Investigation of Novel Solid Polymer Electrolytes and Lithium Salts for Rechargeable Lithium Batteries"

ILLINOIS TECH | Department of Chemistry

Department of Chemistry
Robert A. Pritzker Science Center, Rm 136
3101 S. Dearborn Street
Chicago, IL 60616

Annual Poster Day Event Brings Departments Back Together

On August 20 departments in Lewis College of Science and Letters held a poster event in Hermann Hall. An outdoor barbecue followed that helped welcome new students to the departments.

2021 Poster Day Chemistry Department student award recipients:

Undergraduate Best Poster Award
Aaron Gregory (Mao lab)

Master's Best Poster Award
Rediet Adugna (Biomed Eng) and Deborah Adesina (Biomed Eng/Chem Eng) (Wang lab)

Ph.D. Poster Awards in Chemistry:

Best Poster
Arthur Suzanowicz (Mandal lab)

First place
Forough Jahanbazi (Mao lab)

Second place
Thi Hong Ha Nguyen (Minh lab)

Third place
Shuyuan Zhang (Chong lab)

Undergraduate poster award recipients with Illinois Tech President Raj Echambadi and Provost Peter Kilpatrick

Graduate poster award recipients with Illinois Tech President Raj Echambadi

Poster Day August 20, 2021

Photos by Tom Irving