Driven by Curiosity

Richard F. Jordan, Paul Snowden Russell Distinguished Service Professor Emeritus
Driven by Curiosity

Richard F. Jordan converses with Irene C. Hsiao upon his retirement.

Is it true you created catalysts that are used in the manufacture of plastics?
Correct. We developed new catalysts for making polyolefin plastics—polyethylene, polypropylene, and related polymers and copolymers. The kinds of catalysts we developed are used in industry to a significant extent and allow us to make new types of plastics that can’t be made any other way.

It wasn’t what we set out to do. We started the project in the mid-1980s when I was an assistant professor at Washington State University. We were interested in making organometallic compounds that were highly reactive in order to understand the factors that control reactivity from a basic science perspective. During the course of this work we developed a class of cationic metal alkyls that turned out to undergo an olefin insertion reaction, which is the basic chain growth step in polymerization. We didn’t set out to develop polymerization catalysts per se, but, having made this particular class of compounds, we recognized the potential applications and investigated them.

That’s often how basic research goes—you’re opening up new chemical space and making new types of compounds with new types of bonds, functional groups, and structures to explore the limits of bonding and the types of structures you can make. Then you explore the reactivity of these new compounds and often discover new reactions, new catalytic processes, new applications, and so forth. Our research has always been more exploratory and fundamental than goal-oriented or applied.

Are there catalysts that break down plastics? Not yet! That’s a tough reaction that involves breaking C-C bonds.
There’s no effective way to do that for simple plastics—that’s the problem. Polyolefin plastics are not biodegradable or easily degradable. You can burn them or recycle them, but burning is problematic because there are many different grades of polyethylene, polypropylene, and related copolymers that are optimized for particular applications. You can’t separate them easily when you recycle, so you end up with a mixture of plastics that can only be used in applications with less stringent requirements. If you think about a bottle cap, that’s a very sophisticated material, a linear polyethylene with a certain amount of branching to give you enough flexibility so that when you screw the cap down it seals, whereas a milk jug is also polyethylene but doesn’t have the branching, so it’s more rigid. When you recycle, they get mixed together and the resulting material would not be suitable for either of the two applications, so it’s called “downcycling” instead of recycling. There is a movement now to get rid of single-use plastics like straws and water bottles and to make cheaper, biodegradable plastics. Society needs to move in that direction as rapidly as possible because plastic pollution in the environment is a serious problem. I read the other day that by 2050 the weight of plastics in the ocean will be greater than the weight of fish.

In the last ten years, we’ve been working on ways to synthesize functionalized polyolefins by copolymerizing ethylene with other types of monomers, and we’ve explored new classes of palladium catalysts for this reaction. One of the drivers is the need for biodegradable materials. Polyethylene is just a chain of carbons with two hydrogens on each carbon. If you can replace some of the hydrogens with other functional groups, you can make the material more reactive and hence more biodegradable. We have not solved this problem yet, but we have made significant progress and have done some nice work in this area.

Were you morally driven to do that? I don’t know about morally—it was curiosity. It’s an important problem for society, and it’s a challenging problem scientifically because there’s no easy way to do it. A successful solution will require a lot of creativity and new insights and advances on the fundamental science side. I worry more and more about these issues because I am probably not as environmentally conscious or socially responsible than anybody else. I understand the scientific underpinnings of problems such as climate change, but my research has always been more curiosity-driven and exploratory than practical or problem-driven.

I’m a synthetic chemist. I like to make new compounds and discover new reactions. If we can do something useful with them, that’s great, and in certain cases that’s happened. But if I look back at what my group and I have done, many of what I think of as our

I don’t know about morally—it was curiosity. It’s an important problem for society, and it’s a challenging problem scientifically because there’s no easy way to do it. A successful solution will require a lot of creativity and new insights and advances on the fundamental science side. I worry more and more about these issues because I am probably not as environmentally conscious or socially responsible than anybody else. I understand the scientific underpinnings of problems such as climate change, but my research has always been more curiosity-driven and exploratory than practical or problem-driven.

I’m a synthetic chemist. I like to make new compounds and discover new reactions. If we can do something useful with them, that’s great, and in certain cases that’s happened. But if I look back at what my group and I have done, many of what I think of as our
most interesting projects and papers don’t have a direct practical impact. They uncover some new chemical principle or disclose unusual structures that people didn’t think would be possible. It is a long series of steps from that to actually having an impact on society.

Was it surprising that something you made could have a massive impact on society?

Oh yeah—it was amazing. I didn’t expect it. It was my best work. It’s why they hired me here, and it led to a lot of interactions with industry. I think the basic discoveries that we made and the principles for catalyst design that we worked out have had a broad impact.

Lots of other groups have picked up on what we did and advanced it in many new directions. The field is now called single-site catalysis, single-site olefin polymerization catalysis, or metallocene catalysis. It’s now an enormous area that came about from the work we and other groups did in the ‘80s and developed in a big way in the ‘90s. We’re not doing it anymore; we stopped about ten years ago because we wanted to do other things, but a lot of people around the world are still working in this area.

You say that this was your best work, but you implied that your most interesting work was something else—how do you define and what do you think was most interesting for you?

My favorite was a paper that involved a “self-correcting” catalyst.3 This was a paper that was originally rejected, and to this day it has not been appreciated by the broader community. In catalysis you have the issue of selectivity: you’re converting A to B but A could also be converted to C—a stereoisomer, a geometric isomer, or another compound entirely. You want to convert all of your reactant into a single product in 100% yield with no waste and no byproducts. Typically that doesn’t happen; you make a mixture of several products, and you have to modify the reaction conditions and/or the structure of the catalyst to favor the formation of the desired product over the other products. We discovered a catalyst that, like many catalysts, could make two different products, the desired product and the undesired product. But in this case the change in catalyst structure to the new structure that didn’t cause the change in catalyst structure to the new structure that didn’t make the wrong product. I thought it was a really interesting case of unusual behavior. The selectivity of the catalytic reaction increased over time, so in the beginning, there were 2 products, and the ratio was something like 4 to 1, and after awhile it was 5 to 1, 10 to 1, and then 100 to 1. So the ratio of the major product to the minor product increased dramatically over the course of an hour or two as the reaction proceeded. At the same time, by in situ NMR analysis, we could see the structure of the catalyst changing from the original structure to the so-called self-corrected structure. We could correlate the change in structure with the increase in selectivity of the reaction, and from that and some other observations, including a detailed kinetic analysis, we were able to conclude that the formation of the wrong product caused the change in catalyst structure to the new structure that didn’t make the wrong product. I thought it was a really interesting case of unusual reactivity and took a lot of interesting detective work to figure out what was happening. At the time we did not see an obvious way to generalize what we found to other systems, but perhaps a young chemist somewhere might be able to do so.

Did you intentionally create this catalyst, or was it something that just happened?

We weren’t trying to solve a particular problem. We made a new class of compounds, namely early metal carbamato complexes. We were exploring their reactivity with different substrates, and we observed unusual behavior. The selectivity of the catalytic reaction increased over time, so in the beginning, there were 2 products, and the ratio was something like 4 to 1, and after awhile it was 5 to 1, 10 to 1, and then 100 to 1. So the ratio of the major product to the minor product increased dramatically over the course of an hour or two as the reaction proceeded. At the same time, by in situ NMR analysis, we could see the structure of the catalyst changing from the original structure to the so-called self-corrected structure. We could correlate the change in structure with the increase in selectivity of the reaction, and from that and some other observations, including a detailed kinetic analysis, we were able to conclude that the formation of the wrong product caused the change in catalyst structure to the new structure that didn’t make the wrong product. I thought it was a really interesting case of unusual reactivity and took a lot of interesting detective work to figure out what was happening. At the time we did not see an obvious way to generalize what we found to other systems, but perhaps a young chemist somewhere might be able to do so.

When I was an undergraduate, I was not a very serious...
It all goes back to Mr. Zoranski, my high school chemistry teacher. He was a really cool guy, we did a lot of fun experiments, and he made chemistry very interesting, which it is.

student. I got good grades, but I wasn't particularly concerned about my future career. I was more interested in surfing than in school. No one in my family had ever gone to graduate school, so I didn’t know much about it. During my years at ARCO, I interacted with a lot of PhDs and realized that what they were doing was more interesting than what I was doing as a bachelor's level chemist. When I figured out they would pay you to go to grad school at Princeton, and when I became aware of the lifestyle grad school, it was a no-brainer! So I ended up going to grad school at Princeton. When I graduated, I interacted with a lot of PhDs and realized that what they were doing was more interesting. They were doing very interesting research. Once you are experienced, you can do some cool stuff: make new kinds of compounds, discover new reactions, and figure out how to control the chemistry.

You don’t sound tired of it! I’m not tired of it. I love it. But academic chemistry is exceedingly competitive. To work at a high level requires a major commitment. It’s like a baseball player at the end of their career in their late 30s or 40s; they’re just not physically able to play at a high level, so they retire rather than hang on year after year, performing at a lower and lower level. I recognized as I got older that I didn’t have the drive that I had when I was younger to be thinking about chemistry all the time, coming in on Saturday, and so forth. It’s not fair to my graduate students if I’m not fully committed in that way, so I retired.

Is it hard to step away when you’re doing well? Everybody’s different. We have guys in their 80s who still come in. That’s what they're into, and I have a tremendous respect for that. It’s just not me. I have many other interests that I want to pursue. My goal this year was to ski 100 days; I ended up skiing 107 days, including 7 days of heliskiing in the Canadian wilderness. My wife and I do a lot of outdoor adventure-type stuff. I want to do that while I’m still healthy. Several years ago we bought a house in Avon, Colorado, near some of the best skiing and hiking in the country, and we’re excited to spend more time there.

I’m really interested in climate change and will be doing some climate change advocacy work, probably with the Earth Island Institute. There’s a large underprivileged Latino community in Colorado serving the ski areas, and I’d like to do something with those kids. In the Vail Valley area, you’ve got a lot of rich people, and you’ve got an underclass of mostly Latino people running the hotels, doing all the manual labor, and the school system is not that great out there. Property taxes are relatively low, and retirees and second homeowners who don’t have kids in school don’t want to invest in education. I’m interested in doing something with the school systems out there, maybe tutoring or a Big Brother type thing.

I feel I had a great career that far surpassed anything I could have imagined when I started. I enjoyed teaching, I enjoyed research. It was stimulating; it was challenging. I felt I had an impact on the Department and the University. It was often a pain in the neck, but we were able to do a lot to improve the Department. All of that was great, but now it’s over and time for the next stage.

What do your last days as a professor look like? My last two PhD students graduated 2019—Alison Johnson Wilders defended in March ["Synthesis and Olefin Polymerization Behavior of Electronically-Unsymmetrical Pd(II)-Alkyl Catalysts"] and Erik Reinhardt defended in June ["Metal Complexes Supported by Novel Ligands"]. Erik will spend a few more months with me as a postdoc, finishing up several projects. And when he’s done, I’ll shut down the lab, write a few more papers, and be finished.

What is the work you’re finishing your career with? My last generation of students focused on three projects. We discovered a way to make all “cage catalysts,” complex structures that form by self-assembly and display interesting performance features in olefin polymerization reactions. We have tried to understand the self-assembly process and the origin of the unique behavior in olefin polymerization. A second area involves the chemistry of palladium fluoride complexes. We discovered that certain Pd catalysts can copolymerize ethylene with vinyl fluoride to generate fluorinated polyethylene and that a key reaction in this process is the insertion of ethylene into Pd-F bonds. This reaction is unique and was very surprising to us, and we are trying to understand how it occurs mechanistically. Finally, Erik is working on multinuclear ligands that are designed to position two metal centers in close proximity to each other in order to achieve new reactivity modes. All of these studies are synthetic chemistry projects aimed at making new types of compounds and structures.

can you describe how projects are conceived in your lab? You start out with an idea: maybe a structure we think is going to do something interesting. Maybe it has an unusual bond in it, maybe it has unusual steric features, maybe it’s chiral and might be used for enantioselective chemistry. Or maybe we have a known reaction, and we’d like to figure out the mechanism. A lot of the ideas come from my students. When I get a new student, I give them an initial project to get started as a vehicle for training them in techniques we use in our type of chemistry, but it’s understood that the original goal of the project might not be achievable and/or that we may find something more interesting than the original goal along the way, and we’ll go in that direction. It’s also expected that the grad student is going to conceive of some new direction to take the research, and that’s really going to be their PhD thesis.

I know a student is ready for their PhD when they’ve reached the point when they’re having ideas that I would never have or solving problems I would never be able to solve. When that happens, I know they’re ready to graduate. That’s really the goal of a PhD program for a student to become an independent scientist, someone who can come up with their own problems and solutions completely inde- pendently. At the beginning, I tell the students what to do. At some point they’re going to say, “You told me to do this, but I thought it would be better to do it this way, so here’s what I’ve done and here are the results”—that’s really what it’s all about.

I have found that watching the evolution of students from first-year grad students who know very little to functionally independent scientists is a lot of fun and is very rewarding. It’s impressive how smart they are and interesting to see the different kinds of intelligence. People approach things in their individual way. A student may not be good at quantitative analysis but may be great at pattern recognition, or may not be good at seeing the big picture but may be a great detail person. Everyone’s got their strengths and weaknesses, and if you work with a student for five years, you really get to know who they are. And they get to know your strengths and weaknesses too! Working with my students and postdocs has been an incredible experience. That’s what I’ll miss the most.

Do you have any advice for young chemists? I would say to follow your heart. Do what excites you. You only get one shot at life, so do it your way. What differentiates an academic from an industry career is that in academics we can do whatever we want. We don’t have to solve a particular problem. We don’t have to make a product that has a million dollars in sales. We’re here to train students, to do basic research, and to make discoveries, so take ad- vantage of that freedom if you’re going to pursue an academic career. Do what you think is interesting, and you’ll be successful because you’ll be motivated.

“As far as we know,” writes R. Stephen Berry, James Franck Distinguished Service Professor Emeritus, on the first page of *Three Laws of Nature* (2019), thermodynamics “applies to everything we observe in the universe, from the smallest submicroscopic particles to entire clusters of galaxies.” Thermodynamics, described by Albert Einstein as “the science most likely to be true,” developed in the eighteenth and nineteenth centuries in parallel with the rise of the steam engine, as “the science most likely to be true,” developed in the eighteenth and nineteenth centuries in parallel with the rise of the steam engine, and I can be assured that the structure with the lowest free energy is the most stable. By thinking carefully about the various flows induced by non-equilibrium driving, we have achieved some success in understanding how similar design principles can be written for far from equilibrium systems,” he says.

“*As far as we know,*” writes R. Stephen Berry, James Franck Distinguished Service Professor Emeritus, on the first page of *Three Laws of Nature* (2019), thermodynamics “applies to everything we observe in the universe, from the smallest submicroscopic particles to entire clusters of galaxies.” Thermodynamics, described by Albert Einstein as “the science most likely to be true,” developed in the eighteenth and nineteenth centuries in parallel with the rise of the steam engine, as “the science most likely to be true,” developed in the eighteenth and nineteenth centuries in parallel with the rise of the steam engine, and I can be assured that the structure with the lowest free energy is the most stable. By thinking carefully about the various flows induced by non-equilibrium driving, we have achieved some success in understanding how similar design principles can be written for far from equilibrium systems,” he says.

That’s the beauty of thermodynamics: there are a few simple variables, like temperature, pressure, and entropy, that seem to be important no matter how complex the system is.

“*As far as we know,*” writes R. Stephen Berry, James Franck Distinguished Service Professor Emeritus, on the first page of *Three Laws of Nature* (2019), thermodynamics “applies to everything we observe in the universe, from the smallest submicroscopic particles to entire clusters of galaxies.” Thermodynamics, described by Albert Einstein as “the science most likely to be true,” developed in the eighteenth and nineteenth centuries in parallel with the rise of the steam engine, as “the science most likely to be true,” developed in the eighteenth and nineteenth centuries in parallel with the rise of the steam engine, and I can be assured that the structure with the lowest free energy is the most stable. By thinking carefully about the various flows induced by non-equilibrium driving, we have achieved some success in understanding how similar design principles can be written for far from equilibrium systems,” he says.

That’s the beauty of thermodynamics: there are a few simple variables, like temperature, pressure, and entropy, that seem to be important no matter how complex the system is.
Weldon Grant Brown was born on 4 February 1908 in Saskatoon, Saskatchewan, Canada. He received his BS with high honors in 1927 and his MS in 1928 at the University of Saskatchewan. In the summers, he studied aviation with the Royal Canadian Air Force, obtaining a Sword of Honour upon graduation. Brown then continued his studies at the University of California, Berkeley, where he received his PhD in physical chemistry in 1931. He held positions as a research scientist and NMR lab manager at the Pacific Northwest National Laboratory in Richland, Washington, and at the Phillips Petroleum Company in Bartlesville, Oklahoma. Jurkiewicz then joined the Department of Chemistry at the University of Chicago in August 2000 and helped design the current NMR facilities in Searle and GCIS with chairs Mike Hopkins and Rich Jordan.

During his retirement, Jurkiewicz anticipates spending time with family, traveling, and attending to “unfinished business” with his research. “I was never bored in my life,” he says. “I’m not worried I will have nothing to do—no way. Never in my life. If you have something to do, you are young. If you have nothing to do, you are old. I have to be young until the end.”
C ongratulations to Cheryl Sandari Dembe (MS 1970), who received her PhD in August 2018. A graduate student in the Department of Chemistry from 1968 to 1971, Dembe conducted research in Lothar Meyer’s lab on quantized vortices in superfluid liquid helium at temperatures millidegrees from absolute zero and developed thermometry in this region. On February 1, 1971, just weeks after declaring Dembe ready to write up her thesis for graduation, Meyer unexpectedly passed away. Following this shocking loss, the Department informed her that she would have to begin her research once more “from scratch” in a graduate student in the Department of Chemistry, the first female head of the Division of Physical Science and Engineering, and one of the first women on the DVC faculty to have children. Dembe speaks with pride about her career at DVC, noting that students from their chemistry department had an extremely high transfer rate to four-year colleges. “People would get into Harvard and Stanford from our school. I once taught a twenty-five-member organic chemistry class where fourteen got into Berkeley,” she says, citing a longer semester, sophisticated instrumentation designed for the teaching of undergraduate chemistry, and student resiliency training as factors in her students’ success.

While taking a course on the achievements of women in science during a sabbatical, Dembe read about Stanford physics professor Douglas Osheroff’s 1996 Nobel Prize in Physics. The prize (shared with David Lee and Robert Richardson) had been for the discovery of superfluidity in helium-3, research he conducted in 1972 as a student at Cornell. To her surprise, her graduate research looked reminiscent of her own low-temperature studies of helium. She contacted Osheroff, who acknowledged her work and encouraged her to seek her degree from the University of Chicago.

Dembe wrote to the Department of Chemistry in 2000 explaining her case but received no reply. Dembe did not pursue the communication again until the #MeToo movement garnered nationwide attention. In April 2018, she wrote directly to President Zimmer: “The recent #MeToo movement has led me to focus more clearly on the strong injustice done to me at the time, because I was a woman. It has only once again led me to write the University of Chicago and ask that re-

dress be made for the substantial and life altering effects the University of Chicago chose to impose upon the trajectory of my life. I request that The University of Chicago address and make right this matter. I ask to be awarded the doctorate I earned at that time.” This time, her letter did not go unnoticed. A committee in the Department of Chemistry meticulously reviewed her 475-page lab notebook from 47 years prior, concluding that Dembe was on track to receive her degree, had her studies not been interrupted. Undeterred by the time that has passed, Dembe says, “I’m an extraordinarily energetic person. Scientific contemplation continues to inspire me, and there’s research I would still love to pursue.”

“I went into science to learn the truth,” says Dembe, who published a memoir in 2016 called The Choice of Happiness: Glimpses from an Extraordinary Ordinary Scientific Mystical Life. “In every aspect of my life, nothing has been more valuable to me than the scientific method. To take the time to observe, take data, check reproducibility, and hold off on conclusions. I see the actions of the Department of Chemistry, the University, and my degree committee as a miraculous template for how to respectfully consider our issues with each other and look for the position of being each other’s solution into greater joy and connectivity—a process where each person can leave with the feeling of integrity.”

THE DEPARTMENT OF CHEMISTRY continues its mission of research and education with the help of alumni and friends like you. You can be a catalyst in the process of scientific discovery by making a gift to the department. Donate at chemistry.uchicago.edu/giving-to-chemistry, selecting Chemistry under Area of Support and listing the fund to which you would like to contribute under Special Instructions, or send a check to:
The University of Chicago | Department of Chemistry Attn: Laura Baker 5735 South Ellis Avenue, Chicago, IL 60637

The students, faculty, and staff of the department are grateful for your support.

CHIMISTRY EVENTS The most up-to-date information on Department of Chemistry lectures and events can be found online at events.uchicago.edu/chem/index.php.

LET’S KEEP IN TOUCH The Department of Chemistry is updating its records. Send your current e-mail address and other contact information to chemistsclub@uchicago.edu.

CONNECT WITH US on Facebook, LinkedIn, Twitter, and Instagram @UChiChemistry!
DEGREES AWARDED AUTUMN 2018 – SPRING 2019

BS
Maria Margalit Bederson
Lianne Wang Blodgett
Jauna Delas
Jenna Feng
Shanece Antoine Gatibidou
Sarah Patricia Greta
Kelsey Leigh Hopkins
Freda Hu
Elizabeth Faramade Huapatis
Darren Neville Kahan
Sarayjai Narayana Krishnan
Kirk Ryan Lancaster
Owen K. Leedy
Maria Isabel Merolle
Priyadarshini Mirmira
Alice Wen Qin
Zaineb Aziz
Nicholas Robert Wang
Jennifer Delgado
Eleanor Dunietz
Abraham Herzog-Arbeitman
Katherine Elizabeth Hicks
Sophie MacFarland
Amy Samantha Metlay
Joseph Dalton Mitchell
Linsey Matic Nowack
Pau Oliveres
Ellen Hey Purdy

BA
Morgan Elizabeth Reik
Tania Ruiz Velasco
Peter Coborn Ryffel
Emma Hilde Scott
Carter Nathan Stout
Ranjan Lakshmi Sundar
Tina T. Tan
Samuel Svoboda Veroneau
Sara Elizabeth Warrington
Olivia Abbie Wierba
Amanda Walter Wilson
Natalie Angelica Swenson Yaw

MS
Brennan George Ashwood
Jin-Nildas Boyma
James Michael Callahan II
Victoria Leigh Cochran
 Philipp Michael Gemmel
John Hack
Abraham Herzog-Arbeitman
Ram Chandra Iruan
Amananth Kamath
Elizabeth Wells Kelley
Pit Qii
Carter Nathan Stout
Cooper Ashley Taylor
Isaac Nathaniel Wappes
Hao Zeng
Linda Zhang
Lynden Naozi Zhang

PhD
Kasturi Chakraborty
Patrick David Cunningham
Lin Deng
Kyle Joseph Gibson
Nicole Marie James
Pengfei Ji
Thomas Matthew Kuntz
Gilbino Lee
Michael James Luckschrude
Sara Chamberlin Massey
Joseph Nathaniel Mastros
Daniel Micheroni
Andrew West Phillips
Jonathan Greer Raybin
Erik Reinhardt
Manas Sujan
Paul Jonathan Cregan Sanstead
Jeffrey David Saylor
Morris Eli Sharp
Guobua Shen
Minting Shen
Nolan Miller Shepherd
Hailing Shi
Vu Thinh Seivastava
Donghyuk Suk
Sheercofe Thekkan
Erik Harrikingh Tebeé
d
Hunter Bakus Vihert
Jianguan Wang
Zongan Wang
Benjamin P. Weissman
Allison Marie Wilders
Nicholas Edward Williams
Yan Xu
Quancheng You

Lisheng Zhang
Chun Zhou
Ye Zhou

Student Honors

Barnard Memorial Award
Laura Watkins

Class Teaching Award
William Guy
Sofiya Malteva
Andrzej Niedzchadz
Ferdinand Tamerller

Cross Prize
William Carpenter

Gilbert Memorial Prize
Vladimir Liynik

Knock Prize
Ellen Purdy (Chemistry)
Sara Warrington (Biological Chemistry)

Nachtrieb Memorial Award
Sam Verneue

Norton Prize
Matt Ackerman
Pengfei Hu
Vu Thinh Seivastava
Hailing Shi

PS Department
Service Award
Jade Higgins
Josh Portner
Laura Watkins

Shiu Department
Service Award
Timothy Grabnic

Selent-Bestmann Fellowship
McKenna Goetz

Sugarmann Teaching Award
Sammi Abdullahi
McKenna Goetz
Alexandra Lamistrygina
Sarah Willson

Van Dyke Tieres Fellowship
Charles Cole

Olshaneky Fellowship

Dear friends,

This is my last issue as editor of the Chemists Club newsletter. Over the past four years, it has been my honor to produce this newsletter, plan our (almost) annual alumni reception, and regularly update you with news of the Department on our social media and website.

I am extremely grateful to have had the opportunity to celebrate the achievements of our community in big and small ways, from curating and hanging an exhibition of paintings by Dr. Danute Nitecki (PhD 1961) in the Gordon Center Atrium, to establishing the Department of Chemistry Distinguished Alumna/us Award. I am particularly proud that the Department honored Dr. Reatha Clark King (PhD 1963) as the first recipient. It has been wonderful to highlight her accomplishments, and those of other outstanding members of UChicago Chemistry, during my time here.

It has been a pleasure to get to know current and past members of this department. I wish you all the best.

Yours sincerely,
Irene Hsiao
Dear friends,

Welcome to the Autumn issue of the Chemists Club and to the start of another exciting academic year at the University of Chicago! This issue highlights the stories of several individuals who have helped shape the Department of Chemistry.

I would like to congratulate Cheryl Sundari Dembe, SM’70, who returned to the University to receive her doctoral degree in Chemistry this June, albeit nearly fifty years too late. This alumna’s story figures prominently in this issue and has been extensively covered by the national media. Dembe was close to completing her dissertation in 1971, but after her advisor’s untimely death, extreme gender discrimination in the Department of Chemistry made it impossible for her to continue. We sincerely apologize for this shameful behavior and for how long for us to acknowledge our negligence. Dembe was inspired by the #MeToo movement to reach out to the University of Chicago, successfully petition for her degree, and bring the discrimination she experienced to light on a national scale. We thank Cheryl Dembe for her perseverance and for giving us the chance to partially right this wrong and properly recognize her achievements.

We are happy to welcome some new faces to the Department of Chemistry, but are sad to see some longtime colleagues depart. In this issue we talk with Richard Jordan, Paul Snowden Russell Distinguished Service Professor, who retired this year. In addition to his major contributions to inorganic chemistry and catalysis, Jordan left a lasting impact on the Department as Chair from 2009 through 2015. He worked tirelessly to expand the Department into the highly ranked scientific force it is today. Also, on his retirement we would like to thank Dr. Antoni Jurkiewicz for nineteen years of service as the Department’s NMR Facilities Manager, and we welcome Dr. Josh Kurutz who is taking over in that role. Lastly, we are happy to welcome two new junior faculty members to our department: Mark Levin (organic chemistry) and Weixing Tang (chemical biology). We are thrilled that they are joining us and cannot wait to share their future endeavors with you.

Best regards,

Andrei Tokmakoff
Professor and Chair