COLUMBIA CHEMISTRY DEPARTMENT PRESENTS

CHEMISTRY NEWS

SUMMER 2023

COLUMBIA|CHEMISTRY

Welcome from the Chair

Dr. Laura Kaufman

Dear Friends of Columbia Chemistry,

I am happy to reach out to you from my new position as Chair of the Department of Chemistry. For those of you who do not know me, I am an experimental physical chemist who studies cells, gels, and glasses with a variety of techniques focused primarily on imaging. I have been at Columbia for the entirety of my academic career as a faculty member, since Fall 2004. And, indeed, I was here before that as well, as an undergraduate in the department, graduating in 1997.

My time as an undergraduate at Columbia was inspiring and directly led to me becoming a chemist. I took classes from so many of our esteemed colleagues and was lucky enough to do research with both Brian Bent and Jim Valentini, who not only introduced me to how laboratory science "works" and what academic science looks like but also encouraged me to explore physical chemistry broadly. I certainly felt incredibly lucky to be able to return to the department as a faculty member and now feel the same way about being Chair, trusted to lead the department in what we hope is a time of growth.

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Indeed, it is an exciting time for the department. After some years of deferred maintenance, we have a large renovation of Chandler Hall beginning. This work will renovate the 2nd and 5th floors of Chandler into modern, spacious labs supportive of synthetic chemistry. We look forward to welcoming a new senior faculty member (yet to be identified!) into one of these floors as soon as possible and to temporarily hosting research from Barnard Chemistry in the other for several years as their department undergoes a renovation that will displace them temporarily. Alongside these renovations, a large portion of the 3rd floor of Chandler will also be renovated, and this floor will ultimately house our Precision Biomolecular Characterization Facility. While the renovation will no doubt cause some disruptions around the department, we look forward to the completion of this work, and consider these state-of-the-art laboratories a key feature in maintaining our department's historical strength.

While it is always gratifying to see new laboratory spaces in Columbia Chemistry, it is even more gratifying to see new scientists in our department, and we look forward to the arrival of our new graduate and undergraduate students this Fall. Together with our current faculty and staff, I hope to leverage my previous work as Director of Graduate Studies and Director of Undergraduate Studies to assure our department supports our students and helps them thrive in the lab and beyond. New students always bring energy and vibrancy to our department, and we will eagerly welcome them as new members of our Columbia Chemistry family. I also look forward to hearing from you, our established Columbia Chemistry family. Please feel free to reach out to me with ideas for our department or just to say hello.

We welcome your visits in person and plan to invite alumni to several events in the new academic year. I hope to see you on campus, but if you cannot join us in person, feel free to reach out to me by email at kaufman@chem.columbia.edu.

Ph.D. Alumna Dr. Kathy Chen establishes the Dr. Katherine Lee Chen Graduate Chemistry Fellowship

The Chemistry Department had the opportunity to meet and speak with Dr. Kathy Chen (Ph.D. '61), a Columbia Chemistry alumna who established a new fellowship in 2017. The Dr. Katherine Lee Chen Graduate Chemistry Fellowship is merit-based and supports one 5th-year graduate student each year. Kathy visited the department in person with her daughter, Lisa, on April 27 and spoke to us virtually on May 23.

Kathy credits her career to Columbia. The funding that she received as a graduate student allowed her to finish her degree in 3 ½ years. As a Chinese-American woman she was a minority in the department in those years, Kathy emphasized several times throughout her visit that she never experienced discrimination. Her memories are of the labs and burgeoning uses for computers in her work. She says of the fast pace of her degree, "I worked hard --- that's all we did."

Kathy had a highly international childhood. Her father had a degree in International Relations from Columbia University. She was born in Germany, where he was with the Chinese embassy. Later she was raised in China and the Washington, DC area.

She earned an undergraduate degree from Hunter College in January 1958 before coming to Columbia to study nuclear reactions with Professors Jack Miller and Friedlander Gerhard.

Dr. Kathy Chen

She loved physics and had classes with Nobel laureates, T.D. Lee and Madame Wu. She also recalls Gilbert Stork, Ronald Breslow, Ben Daly, George Fraenkel, Victor La Mer, Rich Bersohn and Ralph Halford. She used a computer IBM 650 at Watson Labs to model nuclear reactions. When she needed a more powerful computer, she traveled to the Time Life Building in midtown to use a IBM 360 Mainframe, bringing her punch cards in a card box. She...

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later used a cyclotron at Brookhaven to bombard samples and studied the products of nuclear reactions. She had a remarkably varied career.

Following her Ph.D., Kathy worked for the Brookhaven National Lab for 10 years. Her family moved to Pennsylvania, where her husband taught at Lehigh University, and Kathy took a teaching position at Muhlenberg College that gave her the flexibility that she needed to raise her children.

In 1978, she resigned her tenured position at Muhlenberg to enter an engineering degree program at Lehigh University. Upon receiving the MS degree in chemical engineering she began her engineering career at Bethlehem Steel Corp in 1980. She subsequently worked at Bethlehem Steel Corporation for 18 years, retiring in 1998 as a senior engineer. One of her projects at BSC, a control system for coke ovens, is still in use.

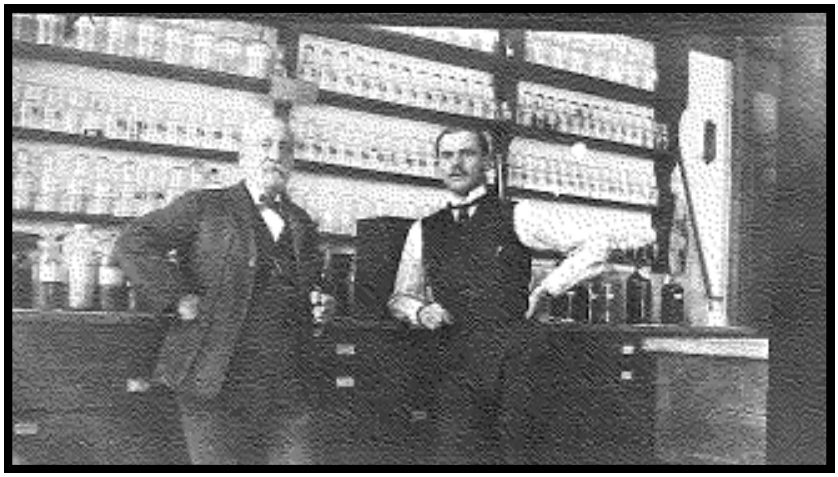
She and her late husband, John Chen, raised three children and have eight grandchildren. Of the three children, one is a chemist, one a chemical engineer and one a computer scientist. As a family, they enjoy skiing and traveling, particularly to New Zealand.

A particular highlight of her April visit was meeting the current recipient of the fellowship, David Vacarro, in the Parkin Lab, and hearing about his novel magnesium organometallic chemistry.

It is difficult to overestimate the impact of graduate fellowships. Kathy has been delighted to see first-hand how her gift to the department has had an incremental positive impact on students and faculty.

Lisa C. Bates, Dr. Laura Kaufman, Julia Morton, Dr. Ann McDermott and Dr. Kathy Chen

The Moloy and Metzger Research Fund Established in honor of Chemistry alumnus



Dr. Charles F. Chandler and Dr. Floyd J. Metzger in the Columbia Chemistry Labs in 1905

Peter Jay Moloy was born on March 21, 1936, and passed away in Irvine, CA, on May 22, 2022, at age 86. He grew up in New York City and attended Choate, followed by Harvard University. He received his medical degree from Columbia University's School of Physicians and Surgeons, graduating in 1962 with a specialization in Otorhinolaryngology (ENT). Peter was one of three brothers whose father passed away when they were young. Their grandfather, Dr. Floyd Jay "FJ" Metzger, an alumnus of Columbia's Chemistry Department, helped raise the boys and put them through school.

Peter wanted to honor his grandfather, and left a gift through his estate to the Chemistry Department at Columbia. In May, Richard, Peter's brother, and Richard's wife, Martha, joined virtually Acting Chair Professor Ann McDermott, Program Manager Sheila Skaff, and Senior Associate Director for Development for the Arts and Sciences, Elisa Heikkila, from their home in Pittsfield, NH, to talk about the family's connections to Columbia Chemistry.

Ann McDermott: We just can't tell you enough how pleased we are that this came to fruition. There are a lot of drivers for why it's harder in higher education right now, so every gift that comes to us makes a difference. Thank you. Many of us might not know about Dr. Metzger. There are several of us in the department who recently have become more interested in the history of the department, but I think there are many others, alums and current members of the department, who really don't know that much about the history. Could you share a bit about who he was?

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Martha Moloy: "FJ" was born in Summit, OH, near Akron, attended college at what is now the University of Akron, and was graduated in 1899. He went on to the University of Pennsylvania for a year, after that to Yale-Sheffield, and then to Columbia, where he got his PhD in 1902. He was first an assistant, and then an associate professor in chemical engineering from 1902 to 1917, and was also an assistant to Department Chairman Dr. Charles F. Chandler. He stayed at Columbia until 1917, before becoming manager of chemical development at the Air Reduction Co. In 1922, he became Vice President of Research and Development there. In 1932, he became Director of Research of the U.S. Industrial Alcohol Co. and the U.S. Industrial Chemicals Co.

Richard Moloy: My grandfather lived in Stamford, CT, and worked in New York City. Later on, when we boys were able to spend more time with him, he was basically retired, but he had an office at Air Reduction, and he went there every day. His chauffeur picked him up daily at the railroad station in Stamford. One of those little idiosyncrasies I can remember was that he was always in the third rail car from the end. I and my two brothers often would go fishing with him, but he was a quiet man and got most of his information about his grandsons from our mother.

Sheila Skaff: Can you tell us a bit about Peter? Do you know what it was that made Peter choose to gift Columbia, rather than the University of Akron or the University of Pennsylvania?

Martha Moloy: He felt a long association with Columbia, which also included his father, Howard C. Moloy, who was an Assistant Professor of OB-GYN at Columbia Presbyterian/Sloan Hospital for Women. Peter was graduated from Harvard in 1958, from Columbia in 1962, and then went into private practice as an ear, nose and throat specialist. He was consigned to the U.S. Air Force after graduation and internship, delivering 2,000 babies at the Alamorgordo AFB in New Mexico. From there, he set up his ENT practice in Burlington, VT, then in Massachusetts and different parts of California.

Richard Moloy: I think Peter just felt a pull. My dad died when we were young, and my grandfather paid our way through private schools and colleges. Peter did go to Columbia for medical school. I think the three-generation connection between Peter, our father's and grandfather's time at Columbia was the mainstay for the donation and the funding.

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The Moloy and Metzger Research Fund is an endowed fund established to support undergraduate and graduate student research in the department.

American Chemical Society

Floyd J. Metzger

having completed Fifty Years of Membership in the American Chemical Society is presented with this certificate as a token of appreciation

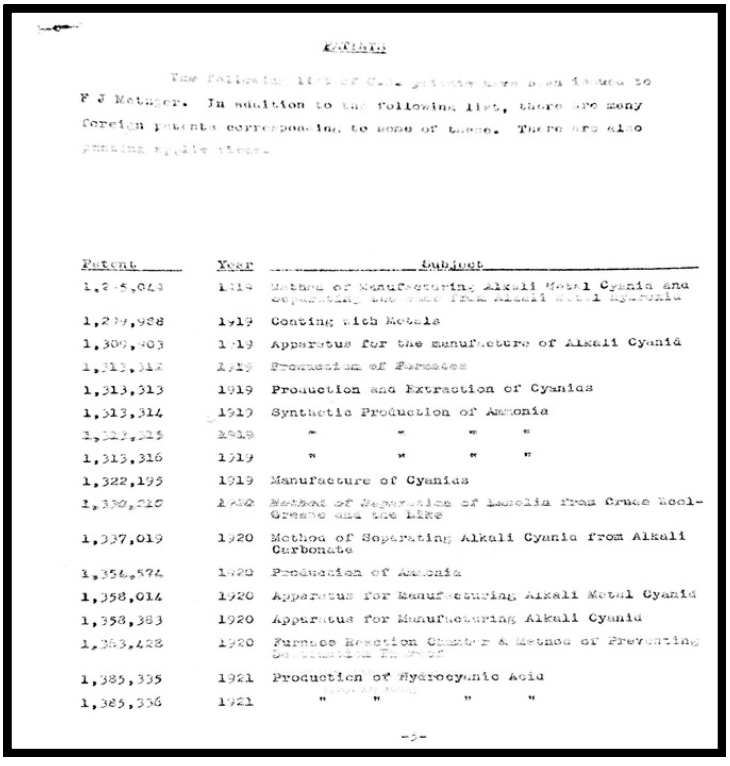
Approved by the Council of the Society

January 1, 1952

Edgar C. Britton, President

Alden H. Emery, Secretary

ACS certificate given to Floyd J. Metzger to commemorate his fifty years of membership in the organization.



Patents

The following list of U.S. patents have been issued to F J Metzger. In addition to the following list, there are many foreign patents corresponding to some of these. There are also pending applications.

Patent	Year	Subject
1,2[illegible]5,643	1918	Method of Manufacturing Alkali Metal Cyanid and Separating the Same From Alkali Metal Hydroxide
1,239,988	1919	Coating with Metals
1,309,903	1919	Apparatus for the Manufacture of Alkali Cyanid
1,313,312	1919	Production of Furnaces
1,313,313	1919	Production and Extraction of Cyanids
1,313,314	1919	Synthetic Production of Ammonia
1,313,315	1919	" " " "
1,313,316	1919	" " " "
1,322,195	1919	Manufacture of Cyanids
1,330,220	1920	Method of Separation of Lanolin From Crude Wool-Grease and the Like
1,337,019	1920	Method of Separating Alkali Cyanid from Alkali Carbonate
1,354,574	1920	Production of Ammonia
1,358,014	1920	Apparatus for Manufacturing Alkali Metal Cyanid
1,358,383	1920	Apparatus for Manufacturing Alkali Cyanid
1,363,428	1920	Furnace Reaction Chamber & Method of Preventing the Formation Thereof
1,385,335	1921	Production of Hydrocyanic Acid
1,385,336	1921	" " " "

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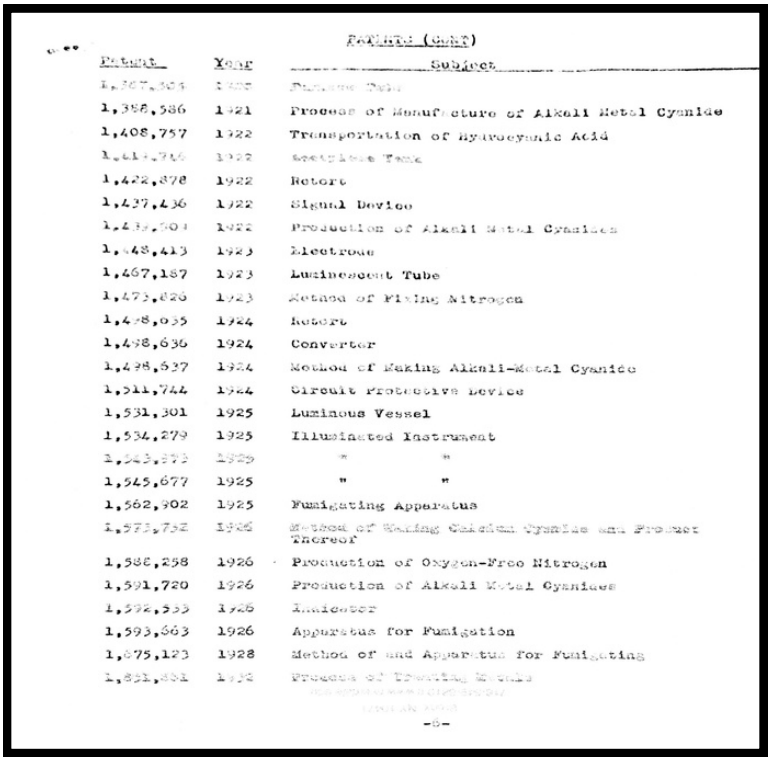

Patents (Cont'd)

Patent	Year	Subject
1,387,361	1921	Furnace Tube
1,398,586	1921	Process of Manufacture of Alkali Metal Cyanide
1,408,757	1922	Transportation of Hydrocyanic Acid
1,414,746	1922	Sectional Tank
1,422,878	1922	Retort
1,437,436	1922	Signal Device
1,439,504	1922	Production of Alkali Metal Cyanides
1,448,413	1923	Electrode
1,467,187	1923	Luminescent Tube
1,473,826	1923	Method of Fixing Nitrogen
1,478,035	1924	Retort
1,498,636	1924	Converter
1,498,637	1924	Method of Making Alkali-Metal Cyanide
1,511,744	1924	Circuit Protective Device
1,531,301	1925	Luminous Vessel
1,534,279	1925	Illuminated Instrument
1,543,272	1925	" "
1,545,677	1925	" "
1,562,302	1925	Fumigating Apparatus
1,573,732	1926	Method of Making Calcium Cyanide and Product Thereof
1,586,258	1926	Production of Oxygen-Free Nitrogen
1,591,720	1926	Production of Alkali Metal Cyanides
1,592,533	1926	Ignitor
1,593,663	1926	Apparatus for Fumigation
1,675,123	1928	Method of and Apparatus for Fumigating
1,851,891	1932	Process of Treating Metals

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Documents displaying the several patents that Metzger filed for his innovations and discoveries throughout his career.

Celebrating the life and legacy of Dr. Marie Maynard Daly: The First African American Female Ph.D. in Chemistry

Columbia Chemistry hosted a National Historic Chemical Landmark Dedication and Symposium in honor of our alumna, Dr. Daly, on May 19, 2023

Faculty News and Awards

Jonathan S. Owen is the winner of the 2023 Inorganic Nanoscience Award from the American Chemical Society for his exceptional research in the area of inorganic nanoscience. Professor Owen studies the interplay between nanocrystal surfaces and ligands, as well as the mechanism governing the nucleation and growth of colloidal nanocrystals. His findings have led to the development of improved synthetic pathways for nanomaterials. Professor Owen has also received the '22-23 Lenfest Distinguished Columbia Faculty Award.

Wei Min has won the 2023 SPIE Biophotonics Technology Innovator Award from SPIE, the international society for optics and photonics, for his extraordinary achievements in biophotonics technology development that show strong promise or potential impact in biology, medicine, and biomedical optics.

Makeda Tekle-Smith has received a Lenfest Junior Faculty Development Grant to support a seminar series on Organic Synthesis and Catalysis.

Gerard Parkin has received the 2022 American Chemical Society Project SEED Mentor of the Year Award.

Colin Nuckolls has received a Humboldt Research Award in recognition of his academic record from the Alexander von Humboldt Foundation.

Congratulations to our Student Awards Winners

Columbia Chemistry celebrated its 2023 student award winners with an awards ceremony and reception on May 16.

The winners of this year's graduate student awards include:

The Hammett Award:
Korak Ray (Gonzalez)

The Pegram Awards:
Steve Jang (Gonzalez)
Arden Lee (Cornish)
Allyson Li (Shah)
Paul Robinson (Reichman)
Xinwen Liu (Min)
Jack Weber (Reichman)

The Jack Miller Awards:
Muinat Aliyu (Norton)
Keaon Brown (Sames)
Paul Brown (Delor)
Kelsey Harrison (Nuckolls)
Tasneem Khan (Rovis)
Shayan Louie (Nuckolls)
Saya Okuno (Nuckolls)
Mariah Ramos (Rovis)
Shu Fay Ung (Reichman)
Bereket Zekarias (Owen)

Arun Guthikonda Memorial Fellowship
David Cabanero (Rovis)

Dr. Katherine Lee Chen Graduate Chemistry Fellowship
Ding Xu (Delor)

The winners of this year's undergraduate student awards include:

The Thomas J. Katz Prize
Sarah Xi

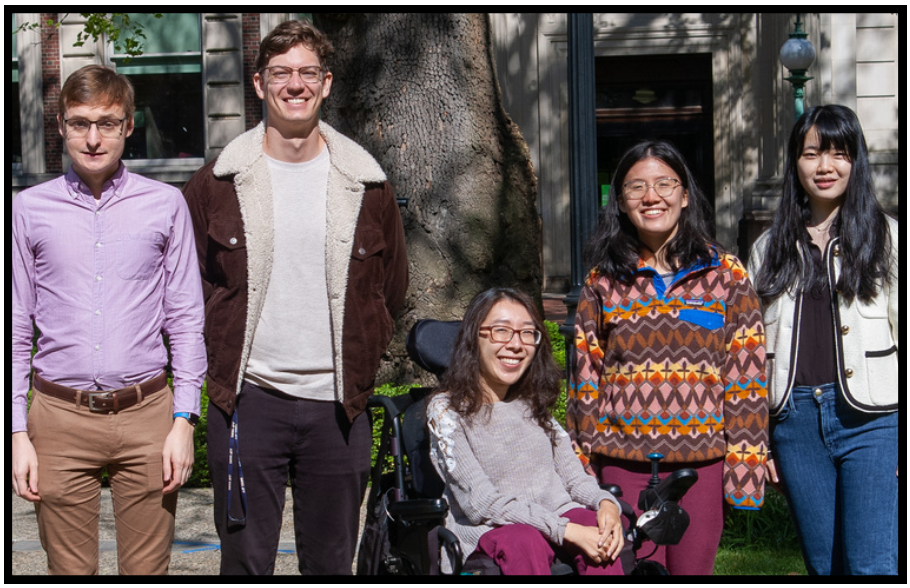
The Richard Bersohn Prize
Ethan Zhang

The Brian Bent Award
Gabriel Chen
Frankie Mendez

The Chandler Society Award
Mariam Saleh

The winners of the inaugural Chemistry Department Service Awards
Arden Lee (Cornish)
Allyson Li (Shah)
Miriam Aziz

Liang Li has received the 2023 Edward Prince Goldman Scholarship in Science from The New York Community Trust.



Pegram Awardees: Paul Robinson, Jack Weber, Arden Lee, Allyson Li, Xinwen Liu

Guthikonda and Chen Fellows: David Cabanero and Ding Xu

Miller Awardees: Muinat Aliyu, Keaon Brown, Tasneem Khan, Paul Brown, Mariah Ramos, Shayan Louie, Shu Fay Ung, Saya Okuno, Bereket Zekarias

Department Life

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Send an email to **chemistry@columbia.edu** to join the alumni mailing list, and find Columbia University Department of Chemistry on Linkedin, Facebook and Twitter!

STAY IN TOUCH!

Share your important updates and experiences in your career and life after Columbia! Send an email with your updates to our Graduate Program Manager, Sheila Skaff at sms2281@columbia.edu, or to our Director of Undergraduate Studies, Vesna Gasperov at vg2231@columbia.edu.