

Shepard Hall and Quadrangle - City College of New York (CCNY) 1904

# Chemical Engineering Newsletter

The Grove School of Engineering at The City College of New York 3/2026

## ChE Celebrates Two Inductees to the National Academy of Engineering

We are immensely proud that two of the 130 new inductees in the 2026 Class of the National Academy of Engineering (NAE) are from the Chemical Engineering Department: alumnus **Israel E. Wachs (ChE BE '73)** and **Jeffrey F. Morris, Professor of Chemical Engineering and Director of the Levich Institute (2016-present)**.



**Prof. Israel E. Wachs**  
**(ChE BE '73)**  
**NAE Inductee**  
**Class of 2026**

Induction into the NAE, one of the highest honors for engineers, is determined by current NAE members who nominate engineers who have made outstanding contributions to the profession through research, practice, and education.

The official NAE election citations for their election read: **Prof. Wachs:** *"For establishing fundamental structure–activity/selectivity rules governing molecular engineering of mixed oxide catalysts."* **Prof. Morris:** *"For research on the fundamentals of concentrated suspension and hydrate slurry flows and for implementing applications in many industries."* Read more about their respective distinguished research careers on pages 3 and 11.

**Prof. Wachs** is the 10<sup>th</sup> ChE alumnus to join the NAE, while **Prof. Morris** is the 6<sup>th</sup> ChE faculty member to earn this recognition. They join a remarkable group of ChE alumni: Andrew S. Grove (ChE BE '60, NAE Class of 1979), George M. Nemhauser (ChE BE '58, NAE Class of 1986), Stanley L. Sandler (ChE BE '62, NAE Class of 1996), Arnold F. Stancell (ChE BE '58, NAE Class of 1997), Martin B. Sherwin (ChE BE '60, PhD '67, NAE Class of 1998), Fredrick L. Krambeck (ChE BE '63, PhD '68, NAE Class of 1999), Amos A. Avidan (ChE BE '63, PhD '68, NAE Class of 2009), Ghebre E. Tzeghai (ChE PhD '84, NAE Class of 2014), Kathleen (Kate) Stebe (ChE PhD '89, NAE Class of 2021), and faculty: Andreas Acrivos (NAE Class of 1977), Benjamin Levich (NAE Class of 1982), Reuel Shinnar (NAE Class of 1985), Morton Denn (NAE Class of 1986), and Gilda Barabino (NAE Class of 2019).



**Prof. Jeffrey F. Morris**  
**NAE Inductee**  
**Class of 2026**



Department website: [www.cuny.cuny.edu/chemeng](http://www.cuny.cuny.edu/chemeng)



[www.cuny.cuny.edu/engineering](http://www.cuny.cuny.edu/engineering)

# MESSAGE FROM THE CHAIR



**Prof. Marco J. Castaldi,  
Chairman**

Dear Alumni and Friends,

I hope you had a great holiday season and survived the winter unscathed. Here in NYC and surrounding areas, we had a good old-fashioned winter. It started like any other, but then the successive snowstorms came and blanketed us with a few feet of snow. Aside from being hard to go anywhere, it is magical when it snows in NYC; even if only for a day or two.

Since the last newsletter we experienced some very good news and some sad news. Emeritus Professor Robert (Bob) Pfeffer passed away on October 24, 2025 at the age of 89 just a few weeks shy of his 90<sup>th</sup> birthday. This was a particularly sad event for me because Prof. Pfeffer had given me great advice when I was preparing to graduate with my PhD. I attribute my presence here at CCNY partly to our conversation. His main point was to get some industrial experience to put into practice what I had learned, then come back to academia. That path would, and ultimately did provided me with a firm foundation to teach engineering topics in which I have practical, working experience, thus making it more impactful. You can read more about the impact Prof. Pfeffer had from several faculty, collaborators, and alumni in the tribute to him on pages 4-7.



**Emeritus Prof.  
Robert Pfeffer  
(1935-2025)**

The good news, or rather great news, is that Prof. Ilona Kretschmar and Prof. Jeffrey F. Morris were recognized in very important ways. Prof. Kretschmar has been selected to be a Fellow in AIChE increasing our ranks of Fellows. Prof. Morris has been inducted into the National Academy of Engineering (NAE), which is an outstanding achievement. He, along with CCNY alumnus Prof. Israel E. Wachs (ChE BE '73), also inducted this year, bring our NAE representation to 16 when counting both faculty and alumni from CCNY ChE.

Our recognition throughout the engineering community also includes Prof. Biddinger's invitation to the Leonard symposium and my receipt of the Excellence in Catalysis award from the Catalysis Society of Metropolitan New York. Complementing these achievements is the expansion and successes of our network including students, collaborators, alumni and friends.

Furthermore, one of our EAB members and alumnus, Dr. Dominick Mazzone (ChE ME '81, PhD '86) invited Prof. Banerjee to present on zinc-based batteries at Bechtel's Energy Technologies Forum. In addition, the restart of our ChE Alumni Nights has brought Dr. Stephen Ma (ChE BE '11), Renee Scarpaci (ChE BE '19) and Mary Coraizaca (ChE BE '21) to talk to our undergraduates about the working life of a chemical engineer. Looking forward, the department is working with Kata (nee Kozma) Pandi (ChE BE '16) to organize a 10-year reunion for the 2016 graduates. Hopefully this will spark others to consider such events. It seems that our efforts in the department to reconnect and engage alumni and friends are bearing fruit. Please consider contacting us if there is any interest to hold an event in our department with alumni and students.

One easy way to start engaging is to attend the Graduate Symposium (April 16th, 2026) that is focused on connecting industry alumni to our current students. On that day, you will also have the chance to meet our new faculty members, Profs. McCrum and Madinya. They have really done well since joining in Fall 2025. In addition to proposal writing and getting more embedded in department and school activities, they have gotten their first cohort of CCNY PhD students, published research papers, and have been invited to give presentations on their work. Finally, you can also meet Sofia Martinez, who was hired from some of the Campaign 2025 funds. She is our social media dynamo since Fall 2025 helping us get more visibility. She is tirelessly working to get the information out about the great things happening in our department.

**Statue of General Alexander  
S. Webb outside Shepard Hall  
in the recent snowstorm**



Again, I would like to thank all who continue to interact and support us in so many different ways. The energy in our department from these interactions is palpable and continues to grow.



**City College on  
February 23, 2026**



**ChE Graduate  
Symposium 04/16/26**

# Alumni News

## Israel E. Wachs (ChE BE '73) - The Art of Molecular-level Detective Work



**Israel E. Wachs  
(ChE BE '73)**

Israel E. Wachs, G. Whitney Snyder Distinguished Professor of Chemical and Biomolecular Engineering at Lehigh University, received his BE in Chemical Engineering at The City College of New York in 1973. Israel reminisces, "If it weren't for CCNY, I would never have been on this career path. The only reason that I could go to college was because CCNY was tuition-free back then. My parents were immigrants and my father wanted me to go into his business to become a barber! The education I received at CCNY prepared me to be successful in graduate school and afterwards." While at CCNY, Israel received several awards including the Steven L. Heller Memorial Award for scholastic achievement and the Edwin G. White ChE Alumni Award (both in 1973). Upon graduation, Israel moved to California and completed a PhD in "The oxidation of alcohols on copper(110) and silver(110) catalysts" with Professor Robert J. Madix at Stanford University. His studies at Stanford inspired his desire to advance the understanding of

heterogeneous catalysis. His interest was particularly piqued by understanding catalysts at the molecular level. He knew intuitively that once understood, the transfer of this fundamental knowledge to the engineering of new and efficient catalysts would be implementable at an industrial scale. The Corporate Research Science Laboratory of Exxon Research & Engineering Company in NJ seemed the ideal place to realize his vision while doing an industrial postdoc. He joined Lehigh University in January of 1987, where he currently directs the *Operando* Molecular Spectroscopy and Catalysis Research Laboratory. Israel's research is focused on providing insights to molecular reaction mechanisms on mixed oxide catalysts under actual reaction conditions. Since joining Lehigh, Israel has published over 400 technical articles (with a citation h-index of 132) and has over 100 patents. Mentoring is important to Israel, he has advised 50 PhD students (40 as dissertation advisor and 10 as co-advisor), 20 postdoctoral researchers, 15 MS students, dozens of undergraduate students, and 25 visiting scholars.



**Prof. Liss presenting the  
Steven L. Heller Memorial  
Award to Israel Wachs (left)  
in 1973**

## Rajesh Goyal (ChE PhD '08) - Founder of PolyProtic Chemicals



PolyProtic has secured a \$190,000 grant from India's Ministry of Mines to advance technology for critical metals recovery toward scale-up and commercialization. We interviewed alum and founder **Dr. Rajesh Goyal (ChE PhD '08)**:

**What does PolyProtic Chemicals do?** It is a specialty chemicals start-up focused on two key areas: advanced extractants for critical metal recovery and the development of unique specialty chemical products for sectors such as agriculture and other industrial applications. In critical metals, we develop separation technologies used in hydrometallurgy to recover metals like cobalt and nickel. In parallel, we are building differentiated specialty chemical products by leveraging our strong R&D and manufacturing expertise in India. My role covers overall execution — industrialization, commercialization, manufacturing scale-up, fundraising, and strategic direction. A significant

part of my work involves translating laboratory chemistry into reliable, scalable, and economically viable production processes.

**How did it all start?** After more than 16 years in the specialty chemicals industry, I recognized an opportunity for India to strengthen its position in innovation-led chemical manufacturing. With the global "China+1" strategy reshaping supply chains, there is increasing demand for alternative manufacturing hubs. India has strong technical talent, but greater emphasis on R&D-driven product development is essential. PolyProtic began with the belief that globally competitive specialty chemicals can be designed, developed, and manufactured in India through strong scientific foundations and disciplined execution.

**What's next?** Our next goal is scaling manufacturing in India while expanding our R&D pipeline across both metal recovery and specialty chemical applications. We aim to build a technology-driven company that combines innovation with robust domestic manufacturing.

**Any advice?** For those interested in entrepreneurship — especially in technical fields — focus on building deep subject expertise around sustainability. Sustainable chemical solutions are needed for the present and future. CCNY had a very important role in my startup journey. I earned my PhD at CCNY, and that experience played a foundational role in shaping how I approach problem-solving and innovation. The research rigor, experimental discipline, and data-driven thinking developed during my doctoral work continue to guide how I design, optimize, and scale chemical processes today. The persistence, resilience, and intellectual independence cultivated throughout that journey have been invaluable in building and leading a technology-driven company.

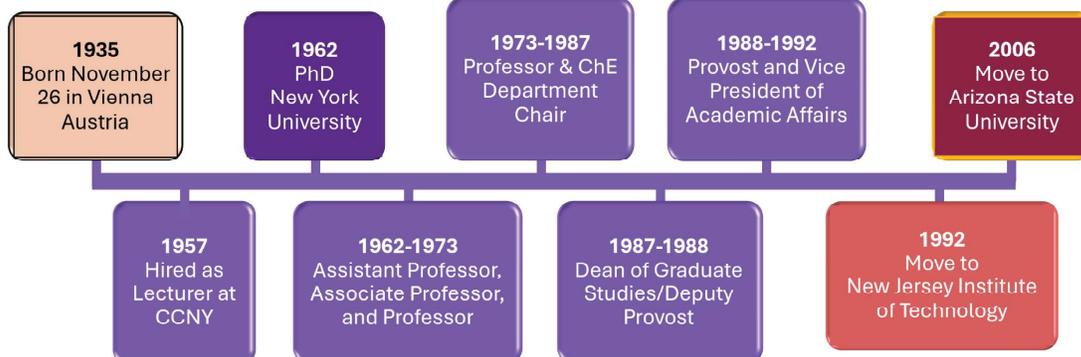


# In Memoriam: Remembering Professor Robert (“Bob”) Pfeffer

*Emeritus Professor Robert (“Bob”) Pfeffer passed away on October 24, 2025. He had a profound impact on the ChE Department through his dedication to hiring excellent faculty and attracting and mentoring outstanding undergraduate and doctoral students. The testimonials below show the breadth of his impact on his colleagues and students at CCNY.*



**Robert Pfeffer (1935-2025)**



**Emeritus Professor Gabriel Tardos** writes, “Bob Pfeffer was my mentor, my boss, my collaborator, and my friend. He excelled in every one of these roles—without exception. Over the course of nearly twenty years, we successfully advised four doctoral students together: Eli Gal (’84), Dominick Mazzone (’86), Junan Kao (’87), and Peter



**Emeritus Professor Gabriel Tardos**

Compo (’89). Working alongside Bob was one of the most rewarding aspects of my professional life. We first met at the Technion in Israel, where I was a graduate student and Bob was on sabbatical in Haifa. During that time, he served as my advisor. My research topic—granular bed separation—aligned closely with his own interests, and our intellectual connection was immediate. Bob later arranged a postdoctoral position for me at CCNY through an NSF grant, where I studied electric effects in porous media. Following that, he played a pivotal role in my appointment as an Assistant Professor of Chemical Engineering. The rest, as they say ‘is history’. I will be forever grateful to Bob for his guidance and advocacy during that critical period of my life.

I learned a great deal from Bob over the years, but two of his guiding ‘principles’ stand out as particularly consequential. He expressed them simply: **Principle #1: ‘You can catch more flies with honey than with vinegar.’** and **Principle #2: ‘Don’t beat (or flag) a dead horse; it is dead.’** At first glance, these sayings may seem to apply only to flies and horses, but in truth they reflect deep and enduring wisdom about how to live and work productively. The first principle emphasizes the power of kindness, patience, and good-natured persuasion in leading others and achieving meaningful results. The second principle speaks to discernment—knowing when effort has been fully expended and when further argument or persuasion is futile. It is, at its core, a principle of efficiency and clarity. Bob embodied these principles effortlessly. He lived them daily as he led the department with distinction for fourteen years and later guided the College for an additional five.

Bob’s influence on my professional life and personal development is immeasurable. I am profoundly grateful to have learned from him, worked with him, and had him as a friend. His legacy lives on through the people he mentored, the students he inspired, and the example he set for all of us.”

**Dr. Dominick Mazzone (ChE ME ’81, PhD ’86)** remembers, “I interacted with Prof. Pfeffer often as he was one of the co-founders of the International Fine Particle Research Institute (IFPRI) in 1979, which supported much of my high temperature fluidization research. After earning my PhD, we kept in touch while I was at Mobil then ExxonMobil and we connected at several IFPRI meetings as I was my company’s IFPRI representative. The picture was taken at Clausthal University at the annual IFPRI meeting in the late 1990’s. Prof. Pfeffer was an excellent administrator and communicator as well as a well-respected researcher. I was always impressed with his eye for technical excellence and talent. The interactions he developed with the Israeli Technion University helped bring many outstanding researchers to teach or become ChE graduate students at CCNY.”



**Dr. Dominick Mazzone (left) and Prof. Pfeffer at IFPRI meeting**

**Dr. Peter Compo (ChE PhD ’89)** recalls, “Professor Pfeffer was both a talented administrator and a scientist, though you often had to pull the science out of him. He wasn’t one to volunteer much; instead, he preferred to let others debate in seminars and never dictated direction to his grad students. He didn’t teach during my time in the department, but I sense he would have been a good professor. Ultimately, I think his greatest legacy was hiring the excellent professors who went on to maintain the department’s high standards.”



**Dr. Peter Compo**

# PhD Alumni Remember Prof. Pfeffer

*Dr. Robert Pfeffer touched many of his students' lives. Here are just four excerpts from four of his doctoral students that show the magnitude and depth of his mentorship:*



**Dr. Ronald S. Kane**

**Dr. Ronald ("Ron") S. Kane (ChE PhD '73)** Dean of Graduate Studies Emeritus, New Jersey Institute of Technology, recalls that, "[Prof. Pfeffer's] steady hand in guiding students and focusing on research was a feature of his mentorship and working with [him] impacted me in many ways—it helped create my career, and was an important early influence on whatever success was achieved for me and my family." Ron also writes that "[Prof. Pfeffer] shared his enjoyment of research and encouraged me all the way through the doctoral process. He was never critical and always supportive." Ron had the privilege of continuing a working relationship with Prof. Pfeffer at New Jersey Institute of Technology (NJIT) where both eventually worked as high-level administrators—Prof. Pfeffer as Vice President for Research and Graduate Studies and Ron as Assistant Vice President for Graduate Studies.

**Dr. Michael S. Kolansky (ChE PhD '76)** fondly remembers Prof. Pfeffer as "a great mentor" who, in the early 1970's, took him and others on a trip to a Euromech conference in Stockholm. It was Michael's first time out of the U.S. and while he learned a lot at the conference, he recalls "enjoying the company and touring the area and feeling like he was on a family vacation." Michael credits Prof. Pfeffer's mentorship and his rigorous education at CCNY for helping him land a job at ExxonMobil where he worked with engineers from prestigious universities such as MIT and Cornell. Michael ultimately ended up working for ExxonMobil for a prolific 38 years.



**Dr. Kolansky's PhD Defense Announcement**



**Dr. Leslie M. Arminski**

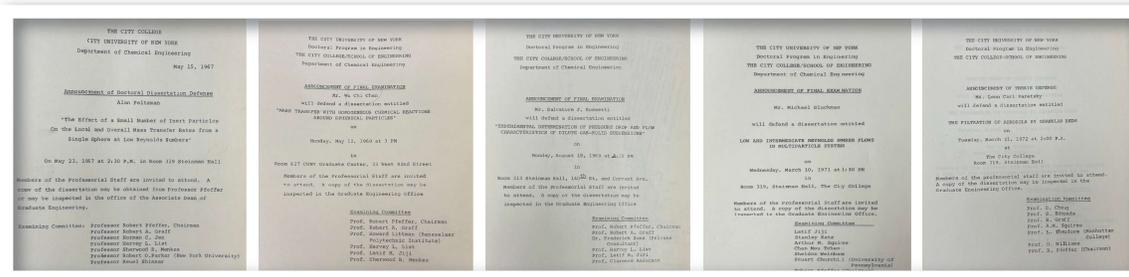
**Dr. Leslie M. Arminski (ChE BE '75, ME '77, PhD '80)** writes that, "[Prof. Pfeffer's] decision to have me work for Prof. Shelly Weinbaum (M.E.) made a profound impact on my eventual career path, which has been biomedically oriented. I probably would have had a completely different career had my thesis been on a traditional chemical engineering subject." Leslie also recalls that Prof. Pfeffer prepped him extensively for his presentation at the AIChE conference in San Francisco in 1979.

**Dr. Ghebre ("Gabe") Tzeghai (ChE PhD '84)** writes that, "I met Prof. Pfeffer in mid 1981 when I came to CCNY from Columbia University for a PhD. After I told him that I wanted to do research in the emerging field of biochemical/biomedical engineering, he replied, 'You may also benefit from having other professors as mentors to help you deal with the complexity of the problem to be solved. Advanced Mathematics and Computer Programming, Biology, Chemistry, Engineering – that will take quite a bit of effort and creativity to integrate into a solution to the one problem.' I ultimately ended up doing research on the topic of "Mass Transport with Mixed Boundary Conditions with Special Application to Problems in Atherogenesis" which introduced a mathematical model for the flow of blood components across very small channels (junctions) in arterial walls that are 1 to 10 angstroms in width and to dimensionalize the transports of molecules and access channels in the arterial walls leading to atherosclerosis. I remember when I was frustrated by not having access to a computer off-hours to do my research and how Prof. Pfeffer came to my aid by loaning me a portable computer terminal. After thanking Prof. Pfeffer for this incredible loan, he responded, 'You are most welcome. That is what mentors do; they remove barriers and enable.' I later learned that I was the first student at CCNY/CUNY to have a computer terminal at home! Twenty-five years after my graduation, together with some distinguished scientists and engineers, we were able to fully decipher the root causes at the cellular level and progression of the disease and to develop a platform technology for prevention, early treatment, and significant delay of chronic diseases like cardiovascular disease, the number-one cause of mortality.



**Dr. Ghebre Tzeghai**

The company name "Summit Technology & Products" was named in honor of the "summit" of great ideas and capabilities in dedication to Profs. Pfeffer and Weinbaum for introducing and inspiring many of us to get in and lead in chemical and biomedical engineering."



**PhD Defense Announcements: Alan Peltzman (ChE BE '60, PhD '67), Wu-Chi Chen (ChE ME '67, PhD '69), Salvatore J. Rossetti (ChE BE '64 or 66, PhD '69), Michael Gluckman (ChE PhD '71), & Leon C. Parettsky (ChE BE '66, PhD '72)**

# Emeritus Professor Robert Pfeffer cont'd

## Emeritus Professor Sheldon (“Shelly”) Weinbaum Pays Tribute

While in some ways he achieved greater recognition both at NJIT and ASU, Dr. Robert Pfeffer’s formative years were at CCNY where he was Chair of the ChE Department for 14 years (1973-1987) and Dean of Graduate Studies/CCNY Provost for 5 years (1987-1992). Bob played a critical role in my coming to CCNY in 1967 and helped prevent me from being fired in 1969. Although I was recruited for Mechanical Engineering (ME) by Latif Jiji in 1967 it was Bob who saw to it that I was not fired in 1969 for calling an illegal meeting of the GSOE faculty when I was a junior faculty member without tenure. I was the only GSOE faculty member who was an outspoken supporter of the Black and Puerto Rican student takeover of the CCNY campus in 1969. I had been working with Bob on fluid mechanics research for two years and we had obtained major NSF grants in low Reynolds number flow fluid mechanics. We were a great team in that we could combine theory and experiment, looking at how our red cells could move through our microcirculation with so little friction. Bob went to [Chair] Alois Schmidt, who invited me to his office and told me that ChE would hire me if ME did not offer me tenure because of my political activities.

1969 was a critical year in that it was the 50<sup>th</sup> anniversary of the GSOE. Bob and I nominated Prof. Yuan-Cheng Fung, considered by many as the “modern father of biomechanics,” to be a guest lecturer for a week-long series of lectures that were televised on CUNY TV. It was the year Bob and I took a series of lectures in Physiology at Columbia Medical School which led to a series of collaborations with Columbia at the graduate level on a joint biomechanics program.

Bob was remarkable as department Chair. In 1985, he recruited Carol Steiner to join the ChE Department, the first female professor to join the GSOE since Prof. Cecile Froehlich had retired from EE in 1965. It is hard to imagine now that in a faculty of 125 there was not a single female faculty member for 20 years! ChE was generally considered the strongest research department in the GSOE. Bob was also instrumental in creating the Levich Institute and recruiting Andy Acrivos from Stanford as the NYS Einstein Chair in 1985 when Levich passed away. At the time, this recruitment was shocking since Acrivos had been actively recruited by MIT and ended up turning them down. What is not well-known is that **Dr. Andrew Grove (ChE BE '60)**, the father of Intel, had been a PhD student of Acrivos' when he taught at Berkeley and that Grove himself was a CCNY alumnus.



**Department Chair Professor Robert Pfeffer (1973-1987)**

Bob was regarded as the elite chair of the strongest research department in the GSOE in 1987. He was recruited as the Dean of Graduate Studies and Deputy Provost and the following year became Provost and President for Academic Affairs. He worked closely with President Bernard Harleston, CCNY’s first Black President. Bob was the only upper administration official who was not asked to resign by the Chancellor when there was a complete change in leadership at CCNY after the startling disaster in 1991, when nine CCNY students were crushed to death in the stairwell of the CCNY gym during a weekend basketball game.

Bob moved on to NJIT to serve as Vice President for Research until 2006 when he decided to move to ASU and then returned to research at age 70. The move was motivated in part by Bob and Marcia’s desire to live near their children and grandchildren who lived in Phoenix. The last 20 years of Bob’s life were in some ways his most productive. In 2024, at age 88, he was nominated by Professor Liang Shih Fan of Ohio State University to the NAE. His nomination was supported by myself and Professor Stuart Cooper (Ohio State University) largely for research that was performed in the last 20 years of his life. Bob has 200 research publications and roughly 10,000 citations. Had he been inducted, his citation would have read, “for outstanding fundamental and applied contributions in particle science and technology and impactful academic, professional and administrative leadership.” I am not aware of anyone who has been nominated at the age of 88 to the NAE. Bob died a few weeks short of his 90<sup>th</sup> birthday. In my letter of support for the NAE, I specifically emphasized that I knew of no one who made many of their most important research contributions after the age of 70.



**Emeritus Professor Sheldon Weinbaum**



**L-to-R: Profs. Ganatos (ME), Weinbaum (ME/BME), and Pfeffer (ChE)**

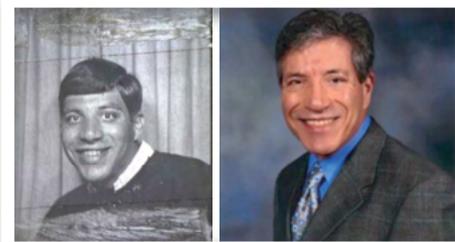
# Undergraduate Alumni Remember Prof. Pfeffer

*We asked a few of our undergraduate program alumni who were taught by Prof. Pfeffer to share their thoughts and any funny stories from their time at CCNY. Do you have a story? E-mail us at [che@ccny.cuny.edu](mailto:che@ccny.cuny.edu)*



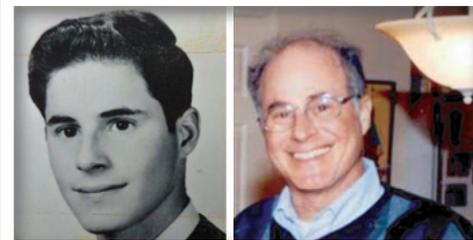
**Jerrold Sameth (ChE BE '71)** writes "I had the privilege to have Dr. Pfeffer for ChE129/130 Thermodynamics [now ChE 229 and 330] in 1970 and still remember Fanno Lines! He was a good soul who cared for all of us." Since graduating, Jerrold has had an illustrious career at Matheson, a compressed gas and equipment company. Then he spent 11 years at Compressed Gas Association. He now works for Electronic Fluorocarbons and Advanced Materials as a Senior Technical Manager assisting the Operations and Technical Team on compressed gas cylinders, valves, and governing DOT Regulations.

**Dr. Jeffrey Silverstein (ChE BE '69, ME '71, PhD '78)** took Prof. Pfeffer's ChE 141 Transport Phenomena 1 (now ChE 341) in Spring 1967 and ChE 142 Transport Phenomena 2 (now ChE 342) in Fall 1968. Jeff has focused his career on the use of fundamental engineering theory and principles, computer-based process simulation, and statistical analysis to define and solve chemical engineering problems. He has had a long career at American Cyanamid Company/Cytec Industries serving as its internal expert consultant for distillation, process analysis, and simulation projects. He is now the Director of Process Simulation Express LLC. Jeff reminisces, "Robert Pfeffer was a wonderful person and a great teacher. He had a wry sense of humor. His classes in transport phenomena were always enlightening. Personally, he was very kind to me, as were other professors in the department at the time [such as] Harvey List, Alois X. Schmidt, Reuel Shinnar, Bob Graff, Stanley Katz, Minocher KN Patel, and Henry Meyers. They were all exceptional people and fine teachers. I was fortunate to have had a first-rate education at "the Harvard of the proletariat - The City College of New York."



**Gary Goetz (ChE BE '72)** had Prof. Pfeffer in ChE 141 (Spring 1970) and ChE 142 (Fall 1971) and retired in 2012 as Senior Marketing Manager from Alstom Power, a major global power generation business acquired by GE Vernova in 2015. He is now focusing on family and enjoying his retirement. Gary shares with us that he has, "pleasant memories of Dr. Pfeffer's transport phenomena class including the Navier Stokes equations during the early 1970s. [Pfeffer was] a kind person and great teacher. May his memory forever be a blessing."

**Dr. Leon Levine (ChE BE '67, ME '68)** had Prof. Pfeffer in ChE 141 (Fall 1966) and remembers, "I was a student of Dr. Pfeffer's way back in the mid-60's. We had kept in contact over the years. Last year he told me his wife had passed and this past April, he told me was going to have some tests. When he didn't reply to my messages in mid-Sept and mid-Oct, I feared the worst. He told me something that I have used my entire career and still quote to others: 'All this theoretical stuff is correct, you just have to figure out how to use/apply it.' He will be missed." After graduating from CCNY, Leon embarked on a career at Proctor & Gamble followed by a research scientist position at Pillsbury Co. Then, he started Leon Levine & Associates, Inc. of which he is the president. A few years in, he decided to go back to school and earned his PhD (2003) from Purdue University in Agriculture and Biological Engineering. Currently, Leon is also a visiting colleague at the University of New Mexico.



**Dr. Martin B. Sherwin (ChE BE '60, PhD '67)** enjoyed Prof. Pfeffer's teaching in ChE 260 Unit Operations Lab I (now part of ChE 345) in Fall 1958 and ChE 261 Factory Trips (no modern equivalent) in Spring 1959. He shares a mischievous story, "I was an undergraduate in ChE when Dr. Pfeffer and Dr. Graff joined the CCNY ChE faculty. They were housed in an open cubicle in the Unit Operations lab next to the Plate and Frame filter press. My team member in the lab was a real rascal (Alvin Blacksborg) and he disengaged the filter feed line, aimed the hose skyward, and doused the office cubicle with calcium carbonate slurry. The two new faculty staff darted from their office while my partner quickly blamed the incident on a faulty fitting. They didn't really believe him but maintained their composure in good humor. Prof. Pfeffer made a name for himself at CCNY by both increasing his intellectual scope and taking on ever more administrative positions. He will be missed by all that knew him." Martin has the distinction of being the first doctoral candidate to be awarded a Doctor of Philosophy (PhD) in Engineering at the City University of New York. He has also been an NAE member since 1989 (see ChE Newsletter 09/2021).

# Alumni Visit The Department

## 2025 Grove ChE Alumni Medal Recipient

**Eden Chan (ChE BE '25)** was recently promoted to Research Analyst at Rhodium Group, an independent research provider that combines policy expertise and data-driven analysis to help decision-makers navigate global challenges. She recently visited CCNY attending **Jonathan Fey's (3rd year PhD student)** second exam. She chatted with faculty and students about her job and reported that, "Being part of the Clean Investment Monitoring is such a delight, and I am excited to continue tracking investments in climate technologies."

Eden who was a Macaulay Honors College student while an undergraduate at CCNY, also used the occasion to pick up her diploma. To her delight, she found out that she was the 2025 Alumni Medal recipient of CCNY's ChE Department. She says: "Choosing to pursue chemical engineering and working for Rhodium Group were spurred by the same motivation: my passion for climate justice. Being rewarded from both of these avenues serves as a reassurance to continually pursue my passion and remain undeterred in this pursuit. With this, I finally feel ready to close my chapter at CCNY, as I continue my path at Rhodium Group with the values and knowledge instilled in me from CCNY."



**Eden Chan (ChE BE '25) and her Alumni Medal given to the highest achieving student of the ChE Class of 2025**



## 3rd Generation of Janus Particle Engineers

**Dr. Francisco Guzman (ChE BE '10)** recently "surprised" the Kretzschmar group when he visited with his two young children. His kids were shown around the lab and allowed to look through the optical microscope. They had tons of questions and we are pretty sure they will become the 3<sup>rd</sup> generation of Janus particle engineers! Francisco was a research assistant in the same lab from 2008 to 2010 working on gold-coated Janus particle assembly. He moved to Virginia Tech for his ME followed by completion of his PhD degree at NJIT in 2018. Since 2016, he has been a research chemical engineer at the NASA Glenn Research Center. We look forward to Francisco's kids joining CCNY!

## Fruitful Alumni & Friends Reception

Research Professor and CCNY alumnus **Dr. John Pellegrino (ChE BE '73)** attended our alumni & friends reception at the Annual AIChE Meeting in Boston in the fall. After a friendly conversation, we agreed to stay in touch. Visiting his family in New York later that fall brought him back to campus for the first time since 1973! We were delighted to show him around and discovered overlap in many areas of research regarding separation engineering and membranes. John will be back in the spring (March 30, 2026) to give a department seminar and to talk to our undergraduate students about research and life in general. After graduating from CCNY, John moved out west to obtain his M.S. (1979) and PhD (1982), both from the University of Colorado, Boulder. Then, he spent 7 years (combined) as a chemical engineer with DuPont and Rohm & Haas and 14 years as a member of the National Institute of Standards and Technology (NIST-Boulder) before returning to UC Boulder in his current position. His research focuses on membrane materials science and separations applications in water, energy, and industrial milieus. Current projects include glucose-based AEM fuel cells; nano and micron-scale-patterning of membrane surfaces; crystallization kinetics of supersaturated desalination concentrate; and fabricating and testing multifunctional graphene-based membrane electrodes.



**John Pellegrino (ChE BE '73)**



**Christiana Oh (ChE BE '17)**

## From Particle Emulsions to Drug-Delivery Device Invention

We were delighted to meet with **Dr. Christiana Oh (ChE BE '17)** this fall to explore internship possibilities between CCNY and Eli Lilly. During her undergraduate studies at CCNY, Christiana performed research on particles at the oil-water interfaces with Prof. Charles Maldarelli at the Levich Institute. After graduating from CCNY, she moved to Indiana for doctoral studies at the University of Notre Dame. Her PhD thesis "Electrochemical Biosensors for Point-of-Care Diagnostics in Whole Human Fluids" presented the perfect research background for her position as advisor on Eli Lilly's Development Engineering team for Drug-Delivery Combination Products, which she began in 2022.

*Thank you to our engaged alumni for visiting! Do you want to visit? Let us know by e-mailing [che@ccny.cuny.edu](mailto:che@ccny.cuny.edu)*

# ChE Undergraduate Club Updates

## The Chemists' Club Student Chapter is Back!

The Club's first semester back after a COVID-induced hiatus was an eventful one. The Club focused on professional development and provided opportunities for college students to see what the chemical industry is like by organizing an exclusive tour of the MERCK development facility in Rahway, NJ, and by hosting representatives from Evonik and Bristol Meyer Squibb on campus.

The first event of the semester was the Evonik Panel. Representatives Jacob Shevrin, Emily Cotter, and Christina Sotelo from the chemical production company Evonik spoke about the unique paths they took to break into the chemical industry. They gave undergraduate students from Chemical Engineering and Chemistry in-depth information about Evonik. This was helpful because students are typically unaware of the role of chemical production companies, as they primarily serve other businesses. The panel provided students with an opportunity to not only learn about Evonik, but also the different aspects of the chemical industry.

At the end of the fall semester, CCNY Chemical Engineering Alumna and Senior Research Associate, **Sujana Shifon (ChE BE '21)**, along with Senior Process Chemist, Dr. Shubhangi Aggarwal, of the pharmaceutical company Bristol Myers Squibb shared their different perspectives and paths to working at BMS and provided amazing insight about the work they do for chemistry and chemical engineering students alike.



**The Chemists' Club hosted events for Chemistry and ChE students by Evonik (top) and Bristol Myers Squibb (bottom)**

## AIChE Student Chapter Update

The AIChE Club had an exciting and active fall 2025 semester fulfilling its goal to support ChE students by creating opportunities for learning, networking, and professional growth. Throughout the semester, the Club organized events that helped students connect with professors and industry professionals.

At the beginning of the semester, the AIChE and OXE chapters hosted the ChE Undergraduate Welcome Event. Next, AIChE students participated in The Grove School of Engineering Expo, an event organized for high school students who are interested in engineering. Another highlight of the semester was a field trip to the Reworld Waste Thermomechanical Treatment Facility in Newark, NJ, where students learned about waste-to-energy conver-



**AIChE Club Leadership. L-R: Zulma Murillo, Blerina Sehitaj, Martina Hove, and Julianne Villar**

sion in the context of recovering valuable resources.

During the second half of the semester, members of the AIChE Student Chapter attended the AIChE Annual Student Conference in Boston. Then they hosted a STEM leadership talk with Dr. Claude Brathwaite, who shared his experiences in academia, industry, and mentorship, and spoke about career development, research opportunities, and leadership in STEM. The semester ended on a high note with a "Lunch with the Dean" event at which Dean Alexander Couzis of The Grove School of Engineering addressed students' questions and concerns.

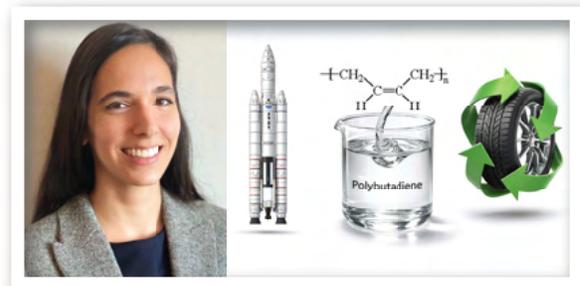
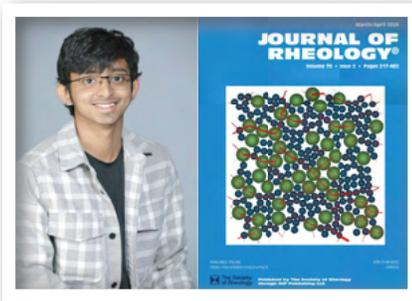


**Clockwise from top left: Fall 2025 GSOE Expo, Plant visit at Reworld Waste Facility, AIChE 2025 National Meeting in Boston, and Leadership Panel with Dr. Claude Brathwaite**

# PhD Research Highlights

## When flowing suspensions turn solid: Understanding how particle crowding causes jamming

Dense suspensions, composed of solid particles dispersed in a fluid, are central to industrial processes such as cement production, ceramic extrusion, chocolate processing, and geophysical flows like mud and lava. Although the suspending fluid may be Newtonian, particle interactions give rise to complex non-Newtonian behavior governed by packing fraction, shear, friction, and hydrodynamics. In this study, **Rahul Pandare's (5<sup>th</sup> year PhD Student)** research examined dense bidisperse suspensions with contact friction, short-range repulsion, and hydrodynamic interactions, focusing on the emergence of contact clusters driven by a reduction in particle degrees of freedom. By tracking rigid cluster formation, he identified a transition from flowing to jammed states that exhibits characteristics of a second-order phase transition. He also presented the first systematic characterization of flow-induced anisotropy in dense suspensions using a fabric tensor framework, providing new insight into the microstructural origins of shear-induced rigidity. Citation: *Contact network structures and rigidity development in two-dimensional bidisperse suspensions* **Rahul Pandare**, M. Orsi, M. D. Shattuck, B. Chakraborty, J. F. Morris *J. Rheol.* **2026** 70, 343.

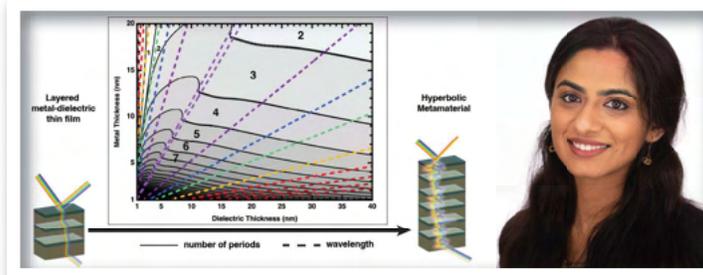


## Everything you were “diene” to know about polymer decomposition

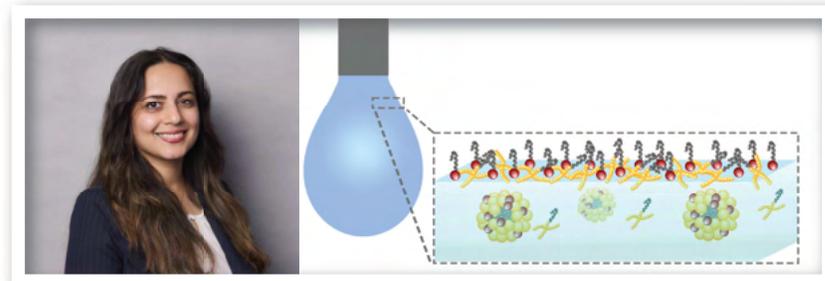
**Lauren Creadore's (4<sup>th</sup> year PhD Student)** work established a predictive chemical kinetic model for polybutadiene pyrolysis, providing quantitative insight into bond scission pathways and gas-phase product formation during thermal decomposition. By linking fundamental decomposition chemistry to measurable products, the study informed not only energetic material performance but also emerging circular strategies for polymers, including chemical recycling and feedstock recovery from these high-demand feedstocks. This work was supported by Innoventing/GE Edison Works and the Chemical Engineering Research Travel Fellowship Fund which enabled the collaboration between CCNY and the Politecnico di Milano. Citation: *A semi-detailed chemical kinetic model of polybutadiene pyrolysis* **Lauren T. Creadore**, A. Locaspi, T. M. Marchese, M. Pelucchi, T. Faravelli, M. J. Castaldi *Fuel* **2026** 405, 136572.

## Designing materials with limitless light dispersion: Hyperbolic metamaterials

Hyperbolic metamaterials (HMMs) exhibit unique dispersion of light and have applications in super-resolution imaging and spontaneous emission control. One realization of HMMs is a layered film made of periods of alternating metal and dielectric. Despite extensive knowledge of fabrication techniques and promises in novel applications, HMMs are underutilized due to lack of accessible characterization techniques and defined design parameters. **Samhita Kattakola's (6<sup>th</sup> year PhD Student)** work used ellipsometry to identify the transition of a layered metal-dielectric structure into a hyperbolic metamaterial. Four design parameters: metal thickness, dielectric thickness, number of periods and transition wavelength were identified and presented as a practical engineering design chart, similar to a state diagram, for fabrication of HMMs. Citation: *Ellipsometric Identification of Transition from a Layered Metal-Dielectric Film to a Hyperbolic Metamaterial* **Samhita Kattakola**, V. M. Menon, A. Couzis, I. Kretzschmar *ACS Appl. Opt. Mater.* **2026** 4, 217.



## Engineering the air–water interface with mixed surfactant micelles



**Nooshin Sadat Ayati's (4<sup>th</sup> year PhD Student)** work investigated a model system where oleic acid (OA), an insoluble amphiphile, was incorporated into PS80 micelles. The formation of OA-PS80 mixed micelles governed the mechanism of OA transport and adsorption to the air–water interface. Our results showed how bulk micelle composition can control surface composition, and we quantified the structure and composition of mixed interfacial layers. Citation: *Adsorption of Mixed*

*Micelles of Polysorbate 80 and Oleic Acid to the Air–Water Interface* **Nooshin Sadat Ayati**, A. D. Kanthe, M. Krause, S. Zheng, H. Zhang, L. E. Ortuno Macias, C. Maldarelli, R.S. Tu *Langmuir* **2026** 42, 2200.

# ChE Faculty Achievements

## Professor Jeffrey F. Morris Inducted to the National Academy of Engineering



**Professor Jeffrey (Jeff) F. Morris** began his academic career at Georgia Tech graduating with a BS in Chemical Engineering. Then he moved to the California Institute of Technology (Caltech) for research with Prof. John Brady, and in 1996 defended his PhD thesis on “Suspensions: microstructure, diffusion, and inhomogeneous flow.” Next, Prof. Morris taught at Georgia Tech from 1996 to 2002 and then worked for two years at Halliburton. During these formative years, he developed his deep understanding of the importance of the processing of particulate systems and the practical issues associated with processing. Prof. Morris joined CCNY’s ChE Department and the Levich Institute in 2005, where he served as Chair of the ChE Department from 2013 to 2016 and in 2015 he became the Director of the Levich Institute at CCNY.

### Professor Jeffrey F. Morris, Director of Levich Institute

Prof. Morris has had active collaborations and visiting positions in France, including continuous appointments in CNRS laboratories from 1999 until 2010. He was a research leader of a major research program funded by the FERMAT Foundation from 2015 to 2020 and a visiting Professor of Applied Mathematics at Brown University in 2010. He has excelled in service to the rheology and

complex fluids community publishing many well-written and well-received reviews, as well as the seminal text, “A Physical Introduction to Suspension Dynamics,” which he co-authored with Élisabeth Guazzelli.

Prof. Morris’ research during the past decade has been transformative in establishing the current paradigm for describing the rheology of concentrated suspensions, research for which he has twice received the Society of Rheology’s Publication Award (2015 & 2020), AIChE’s Shell Thomas Baron Award in Fluid-Particle Systems (2017), and the American Physical Society’s Stanley Corrsin Award (2019). In 2022, Prof. Morris became the first non-European to receive the Weissenberg Award of the European Society of Rheology, an impressive accomplishment followed by the prestigious 2023 Bingham Medal from the Society of Rheology. These tremendous accomplishments led to his induction into the National Academy of Engineering (NAE)—the most prestigious national organization for engineers. Prof. Morris states, “I am deeply honored to have been elected to the NAE *for research on the fundamentals of concentrated suspension and hydrate slurry flows and for implementing applications in many industries.*” As I reflect on joining the membership of this distinguished community, I am humbled - I know that the insights and efforts of all of my students and collaborators are without doubt the reason for this honor.” He added, “I give my thanks to colleagues at the Levich Institute and CCNY’s Grove School of Engineering. I owe a debt of gratitude to all of my colleagues in the ChE Department, led with energy and true devotion to education and research in recent years by current Chair, Professor Marco J. Castaldi, and past Chair, Professor Ilona Kretzschmar.”

## Professor Ilona Kretzschmar Named AIChE Fellow



### Professor Ilona Kretzschmar

**Professor Ilona Kretzschmar** has been named an *AIChE Fellow*, one of the highest honors awarded by the American Institute of Chemical Engineers in recognition of her contributions to the chemical engineering profession through research, teaching, mentoring and leadership. Prof. Kretzschmar joined CCNY in 2004 as an Assistant Professor and moved through the ranks quickly becoming a full professor in 2013. She served as Department Chair from 2016 to 2023. During her tenure, she led the department through two successful ABET visits, the COVID crisis, and significantly increased ChE alumni interaction. Her research explores the fascinating world of nano- and microparticles, especially how they can be modified and assembled to create new materials with unique properties.

## Other Awards & Recognition

**Professor Marco J. Castaldi** received the *2025 CSNY Excellence in Catalysis Award* from the Catalysis Society of Metropolitan New York. The award recognizes Prof. Castaldi’s outstanding contributions to catalysis, reaction engineering combustion, and waste-to-energy systems, and his leadership in advancing research that bridges academia and industry.

**Professor Elizabeth J. Biddinger** was an invited speaker at the *2025 Nelson J. Leonard Symposium* at the University of Illinois Urbana-Champaign — a distinguished event recognizing innovation and collaboration in electrochemistry. Prof. Biddinger presented her talk, “Influence of Ionic Liquids at Electrified Interfaces,” highlighting her research in electrochemical reaction engineering, sustainable electrification and green chemistry.



### Professor Elizabeth J. Biddinger



### Professor Marco J. Castaldi

# Connect, Engage, & Contribute

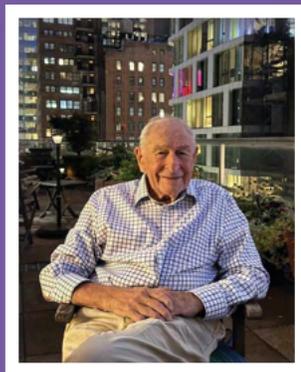
## Connect

*There are many ways to connect with your alma mater. Please check the boxes that interest you.*

- I would like to visit the campus.
- I would like to speak about my experience to students.
- I would like to attend departmental seminars on technical & research topics (Mondays 2-3 PM).
- I would like to connect via LinkedIn group "CCNY ChemEng Alumni."
- I would like to mentor students.

You can always email us with updates or questions at:  
[chealumni@ccny.cuny.edu](mailto:chealumni@ccny.cuny.edu)

## Engage



**Leonard Aconsky**  
(ChE BE '52)

Leonard Aconsky, a true New Yorker, was born in 1930, attended Brooklyn Tech HS, and completed his ChE-BE at CCNY in 1952. Fresh out of CCNY, he entered the US Army and was part of the Hemorrhagic Fever research project in Korea and Japan. He then earned a ChE-MS from Columbia University in 1955 on the GI bill. He has lived and worked overseas in Israel, Belgium, Puerto Rico, and Mexico with jobs ranging from medical research and process development in industries such as mining, sugar, and fertilizers to managing technical information flow within multinational companies. He has worked at Fleishman Labs, Dorr-Oliver, Nichols Eng, Chemicals & Phosphates (Israel), Witco Chemicals and the U.S. Army. In addition, Leonard has served on the boards of Vulcan International and Acotech Services and holds patents in fluid bed technology, industrial filter design, and refrigeration. He has published on proteinbound iodine, calcium analysis, cane sugar processing, and holds PE licenses in NY and CT. Leonard has supported many ChE students with generous stipends tied to the timely completion of their degrees. Leonard says that some of his fondest memories of CCNY "are learning to play lacrosse and summer session team projects." He has been married to his wife Susan for well over 45 years now and is currently enjoying his retirement.

## Contribute

Please fill out this form to provide an information update and/or to make a donation to the Department of Chemical Engineering at CCNY.

Name \_\_\_\_\_

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To leave a gift in your will, simply share this sentence with your attorney or financial planner:

"I bequeath \$ \_\_\_\_\_ or \_\_\_\_\_% of my estate to the Department of Chemical Engineering, CCNY, Steinman Hall, T322, 140th Street & Convent Avenue, New York, NY 10031."

I have included the Department of Chemical Engineering (CCNY) in my will.

Checks may be made out to: **The Foundation for City College - Department of Chemical Engineering (CCNY)**

Gifts to the Department of Chemical Engineering (CCNY) are tax-deductible as permitted by law.

Please donate online or return information/pledge card and checks to: **Department of Chemical Engineering Office, The City College of New York, Steinman Hall Room 322, 140<sup>th</sup> Street & Convent Avenue, New York, NY 10031**

Information-only updates may be sent to: [chealumni@ccny.cuny.edu](mailto:chealumni@ccny.cuny.edu)