

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

Chemical Engineering Newsletter

Grove School of Engineering at The City College of New York

09/2017



At graduation: Maxwell Berkow (ChE BE '17), Klaudia Kapo (Class of '19), Christopher Ushay (Valedictorian), Renee Scarpaci (Class of '19), and Ye Joon Seo (Salutatorian)

Christopher Ushay is the 2017 GSOE Valedictorian. Christopher was born and raised in the town of Eastchester, NY, a suburb in Westchester just outside of the city. Christopher says that the decision of pursuing a ChE major was based on the opportunity "to study rigorous theory in chemistry, physics, and mathematics without a large amount of sacrifice between the three."

Ye Joon Seo is the 2017 GSOE Salutatorian. Ye Joon immigrated from South Korea at the age of 6 to Flushing, Queens. Ye Joon says, "The Grove School of Engineering actually drew me to CCNY because I had always wanted to be a chemical engineer. CCNY provides an environment where all the students are ambitious due to their circumstances, so I knew it was the place to be."



Department website: www.ccnycuny.edu/chemeng



Visit the new CUNY Advanced Science Research Center (ASRC) and the City College Center for Discovery and Innovation (CDI)!



MESSAGE FROM THE CHAIR



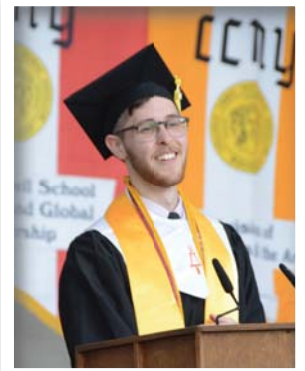
Prof. Ilona Kretzschmar, Chair

Dear Alumni and Friends of the Department,

It has been an interesting and rewarding 1.5 years of chairing the Department of Chemical Engineering in the Grove School of Engineering at The City College of New York. I am delighted to see our newsletter come together thanks to the dedication of our students and faculty. As you will see, we report recent news from our successful undergraduate and graduate students. For example, our AIChE Chapter's Chem-E-Car team has been outstandingly successful in recent regional and national competitions and our graduate students continue to garner fellowships, travel support and other awards as a result of their excellence. The newsletter further highlights three of our award-winning Chemical Engineering faculty. Last but not least, it contains some interesting news we received about our alumni.

I would like to use the rest of this letter to give a quick update on the "State of the Department". The Department currently has over 320 undergraduate students, the largest enrollment in recent history! Our 2017 Graduates made us proud - Valedictorian and Salutatorian, both ChE! Our graduate program has four masters and 36 doctoral students. Four staff members provide support in running the department, one of whom, Zhenrong Xu, just retired. Sixteen faculty members from the Assistant to the Distinguished Professor level teach our curriculum and provide cutting-edge research experiences to our students. The core of our department is housed on the 3rd floor of Steinman Hall located on the northern end of the CCNY campus at 140th and Convent Ave. We also have space in the new ASRC building.

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**Christopher Ushay
ChE BE '17**

In the past year and a half, we have gone through our ABET accreditation, established a new External Advisory Board (EAB), promoted Profs. Gilchrist and Castaldi, and created a student design space with the generous support of Dean Gilda Barabino (also a Chemical Engineer). Our ABET review started in the fall of 2015 with a mock review and culminated in the ABET team visiting the Department last October. At this point a quick thank you to those of you who helped us by responding to our alumni surveys. We just received news of the 6-year accreditation of our BE program. As part of our ABET preparations, we established an external advisory board comprised of Jan J. Lerou (EAB chair, PI³), Stanley Sandler (ChE BE '62), Kathleen J. Stebe (ChE PhD '89), Natividad (Nati) Huertas-Melancon (ChE BE '93), Nikhil Kalyankar (ChE PhD '07), Nitin Kumar (ChE PhD '01), Debbie Thomas (ChE BE '86 & ME '88), Stelios Tsinontides (ChE BE '86), Stu Soled (Chem BS '69), Cheryl Teich (Dow), William I. Olbricht (Cornell), and Levi T. Thompson (U Michigan). Our EAB visited us in May 2017. During the visit, we introduced the EAB to our department and held a poster session in the new Student Design space.

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In closing, I hope this letter finds you well and I look forward to hearing from you.

- Ilona Kretzschmar



**Poster Session
during EAB Visit**

T312 - Refurbished Student Design Space



before



after

ALUMNI HONORED

Professor Stanley I. Sandler is the Henry Belin DuPont Chair in Chemical Engineering at the University of Delaware and has been awarded the 2017 Townsend Harris Medal by the Alumni Association of The City College of New York. Prof. Sandler has for decades been one of the intellectual leaders of Chemical Engineering at Delaware, well-known as a leading and very influential program. Prof. Sandler is widely known in the field, having authored one of the most-used textbooks for chemical engineering thermodynamics (with over 50,000 copies sold worldwide), and his research has led to more than 300 publications. Among many recognitions, he was elected a member of the National Academy of Engineering (NAE) in 1996, and he has received major awards for research and education from three professional societies: the American Chemical Society (ACS), the American Institute of Chemical Engineers (AIChE), and the American Society for Engineering Education (ASEE). Prof. Sandler is also a former editor of the AIChE Journal, the leading journal for the chemical engineering profession. Our congratulations to Prof. Stan Sandler, who has been a great friend to the Department of Chemical Engineering at CCNY for many years.



**Stanley I. Sandler ChE BS '62
2017 Townsend Harris Medalist**

Prof. Sandler will receive the medal at the 137th Annual Alumni Dinner to be held on November 2nd, 2017 at the New York Hilton!

Congratulations, Stan!



**Kathleen Stebe ChE PhD '89
2017 ACS Colloids Plenary Speaker**

The 91st American Chemical Society (ACS) Colloid and Surface Science Symposium was hosted at CCNY from July 9th to 12th, 2017. The conference featured 13 Topical Sessions from Colloidal Forces and Interactions to Rheology with over 550 talks and poster contributions, and attracted more than 600 attendees from the US and abroad. Invited plenary lectures were given by Prof. Kathleen Stebe of the University of Pennsylvania and Prof. Markus Antonietti of the Max Planck Institute - Colloids and Interfaces Potsdam, Germany. The conference was organized by Profs. Raymond Tu and Ilona Kretschmar from the Department of Chemical Engineering and Prof. George John of the Chemistry Department at CCNY.

The two plenary lectures, award talks, and poster session were held in our beautiful Great Hall in Shepard Hall. Most of the technical sessions were held in the classrooms of Shepard Hall. A dinner cruise on the Hudson provided great New York City views.

Attentive audience in the Great Hall of Shepard Hall



**91st ACS Colloid & Surface
Science Symposium**
July 9th - 12th, 2017
The City College of New York

FIVE ALUMNI START FACULTY POSITIONS



Dr. Ehssan Nazockdast, CCNY ChE PhD '13
University of North Carolina at Chapel Hill

Born in London, UK, to Iranian parents and raised in Tehran, Iran, **Ehssan** completed his Bachelor's and Master's degrees in Polymer Engineering at Amirkabir University of Technology (Tehran, Iran). He then moved to the United States for his doctoral studies in Chemical Engineering at CCNY. He completed his doctoral degree in the group of Prof. Jeff Morris. After postdoctoral study in the group of Prof. Michael Shelley at NYU's Courant Institute, he worked for one year as a research fellow in the Computational Biology group at the Flatiron Institute, Simons Foundation. He joined the Department of Applied Physical Sciences at UNC Chapel Hill in July 2017 as a tenure-track Assistant Professor. His research interests include complex and biological fluids, such as mechanics of colloidal suspensions and the cell cytoskeleton. More about his research can be found at: <http://cims.nyu.edu/~ehssan/>.

Born in Santiago, Chile, **Lorraine** attended the University of Florida where she obtained a BS in Chemical Engineering with minors in Mathematics and Chemistry. She obtained a PhD in Chemical Engineering at CCNY, conducting research under the supervision of Prof. Raymond Tu. She conducted postdoctoral research at the University of Chicago and Argonne National Laboratory where she worked with Prof. Matthew Tirrell on polyelectrolyte complexation. Lorraine joined the Materials Science and Engineering Department at the University of Central Florida as an Assistant Professor in January 2017. Her lab is focused on the design, synthesis, characterization, and application of dynamic peptide based materials created by expanding the self-assembly toolbox to include multiple, synergistic molecular interactions. More about her research can be found at: <http://mse.ucf.edu/biomolecules/>.



Dr. Lorraine Leon, CCNY ChE PhD '11
University of Central Florida



Dr. Sepideh Razavi, CCNY ChE PhD '15
University of Oklahoma

Sepideh was born in Tehran, the capital of Iran. She received her BS at Arak University followed by an MS at Sharif University of Technology, both in Chemical Engineering. She received her PhD from CCNY in 2015 where she worked with Prof. Ilona Kretzschmar on the assembly and flow behavior of colloidal particles at fluid interfaces. She is currently a postdoctoral fellow at University of Michigan working in Prof. Michael Solomon's lab and her research focuses on the application of external fields to assemble anisotropic colloidal particles. In January 2018, Sepideh will join the Chemical, Biological, and Materials Engineering Department at the University of Oklahoma as a tenure-track Assistant Professor. Her research focuses on finding new avenues for engineering soft functional materials via bottom-up assembly.

Oluwaseun (Ibrahim) was born in Abeokuta, Ogun State in Nigeria. He came to the United States of America for his Bachelor's degree in Chemical Engineering at CCNY. He continued his education at CCNY and completed his doctoral work under the supervision of Prof. Jae W. Lee. Oluwaseun joined the Department of Chemistry and Environmental Science at Medgar Evers College in the fall of 2015 as a Substitute Assistant Professor. He has now secured a tenure-track Assistant Professor position in the same department starting in September 2017. His research interests are focused on gas hydrate formation, environmental impact of gas hydrate drilling for natural gas, and environmental monitoring and assessment.



Dr. Oluwaseun Salako, CCNY ChE BE '09, PhD '13
Medgar Evers College



Dr. Carlos A. Silvera Batista
CCNY ChE BE '06
Vanderbilt University

Carlos was born in Cartagena (Caribbean coast of Colombia). He started his undergraduate studies in Chemical Engineering at the Universidad de San Buenaventura (Cartagena) and subsequently obtained a Bachelor's degree from CCNY. As an LSAMP scholar, Carlos started his research work at CCNY under Prof. Ilona Kretzschmar. Subsequently, he earned a PhD from the University of Florida, after working with Profs. Kirk Ziegler and Jason Butler. He later worked as a postdoctoral researcher with Dr. Jeff Fagan at the National Institute of Standards and Technology (NIST). After working with Prof. Mike Solomon as a University of Michigan President's Postdoctoral Fellow, he joined the Department of Chemical Engineering at Vanderbilt University in August 2017, as a tenure-track Assistant Professor. His research interests are colloidal systems, their self- and directed assembly and electrokinetics. More about his research can be found at: <https://engineering.vanderbilt.edu/bio/carlos-silverabatista>.

STUDENT ORGNIZATION UPDATE: AIChE



Chem-E-Car Competition



The CCNY Chem-E-Car team continues to excel in their competitions. Their accomplishments include 1st place at the regional conference in 2016 and 2017, qualifying for the national Chem-E-Car competition five consecutive years, a Chem-E-Car national competition 2nd place in 2013, and multiple team spirit awards. Chem-E-Car is an undergraduate student competition of the American Institute of Chemical Engineers (AIChE). The purpose of the competition is to design a “shoe box-sized” car fueled by chemical reactions that can reach a target distance (with no brakes), while carrying a given cargo weight. One hour prior to the start of the competition, the distance to travel and cargo weight are announced. The team, led by Captain Oswald Shakir Julien and co-Captains Nannette Hernandez and Karlas Christopher and advised by Prof. Elizabeth Biddinger, is actively engaged in improving their car “Sulfurous” and fundraising to attend the national competition at the AIChE meeting in Minneapolis in late October. We expect the competition to be stiff this year – at the national competition in San Francisco last year the first 11 teams were within 6 cm of the 20.1 m target! Best of luck!

Q&A with AIChE National Award Winners

Two awards were given by the national AIChE organization to CCNY students. The awards will be recognized at the national meeting in Minneapolis and include a travel award to attend a national AIChE meeting during their undergraduate studies.

Ariella Himelstein: 2016-2017 Freshman Recognition Award

Award given to most engaged freshman AIChE member.

Hometown: West Hempstead, New York

High School: Stella K. Abraham High School for Girls, Hewlett Bay Park, NY

What does being a member of AIChE mean to you?

AIChE allows me to interact with my fellow engineers outside of the classroom. It also presents me with the job opportunities and internship possibilities that are available to me as a chemical engineer. Most importantly, I am able to hear from alumni about their job experiences and how their schooling prepared them.

What do you think of receiving the award? I am grateful to be recognized for my involvement in AIChE, and I look forward to getting more involved as the semester progresses.

Special Notes from Ariella: I am glad to have the opportunity to be involved in research at CCNY with Prof. Tu and I am excited to see where my research will take me.



Yashoma Boodhan: 2016-2017 Donald F. Othmer Sophomore Academic Excellence Award

Award given to top academic achieving sophomore AIChE member.

Hometown: Unity Village, Guyana, South America

High School: John Bowne High School, Flushing, Queens

What does being a member of AIChE mean to you?

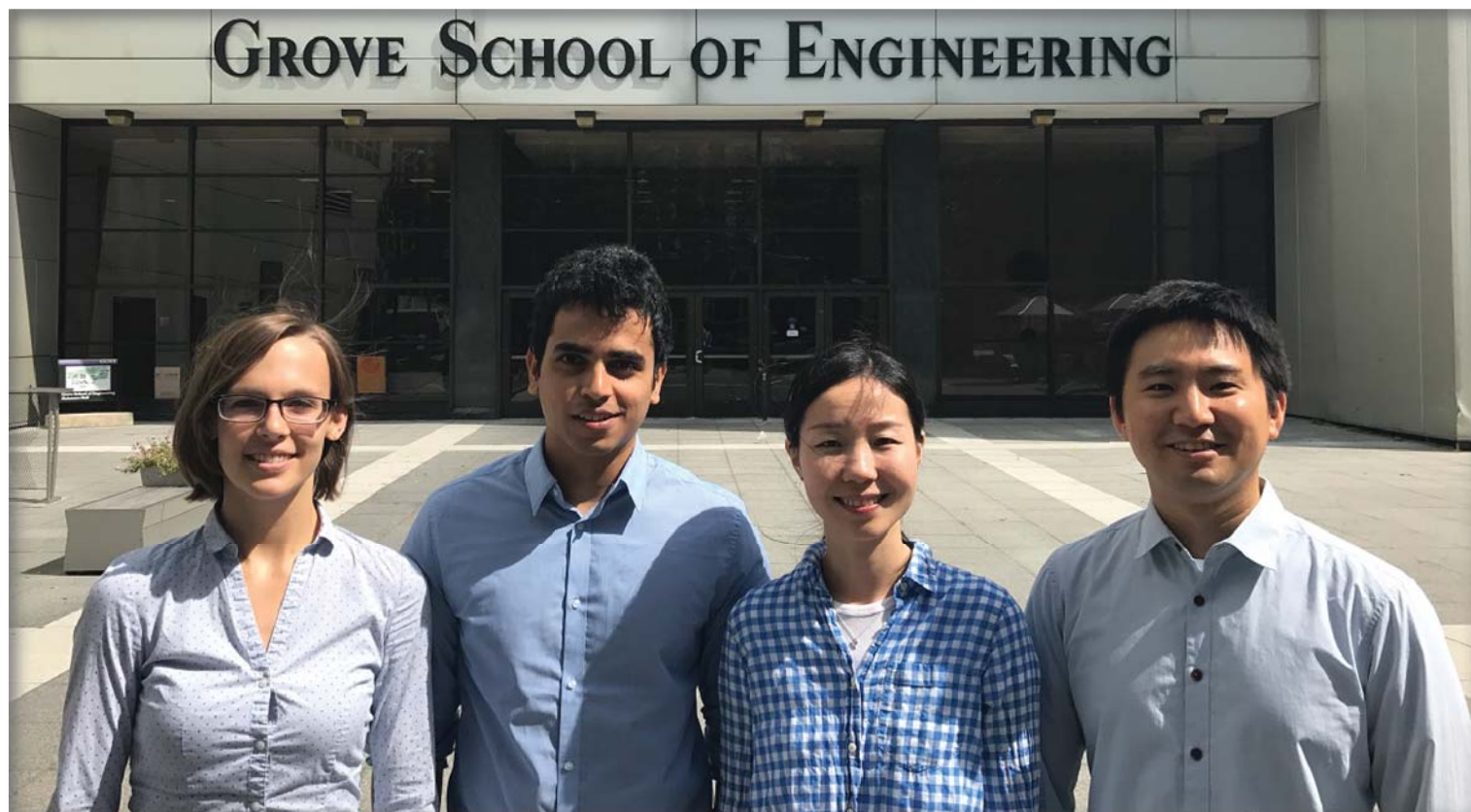
It means being a part of a large network of students and professionals that work toward the same goal -- to develop solutions to problems big and small. I also think being a member of AIChE is about increasing my understanding of chemical engineering and opportunities within chemical engineering outside of the classroom.

What do you think of receiving the award? I feel honored to receive this award. It motivates me to keep working hard.

Special Notes from Yashoma: I'd like to thank all the people who stand behind me. Without them, I would not have the ability to achieve the things I do.



DOCTORAL STUDENT HIGHLIGHTS



From left: Megan Webster, Sidhant Pednekar, Fang Liu, and Sungyup Jung.

Megan Webster was awarded a Nanofabrication Facility Fellowship by the Advanced Science Research Center of CUNY. The NanoFab Fellow Program seeks to guide graduate student researchers to become technical experts in use of real-world nanofabrication processing. Students also transfer knowledge and techniques to their home institutions. Megan is originally from Wisconsin and attended the University of Wisconsin-Whitewater, where she obtained a BS in Chemistry. Currently, she is a 4th year PhD student at CCNY working with Prof. Marco Castaldi and Prof. Ilona Kretzschmar. The focus of her thesis research is on understanding the light-matter interactions of quantum dots, discerning controllable parameters in the system, typically through surface modification, and using those parameters to design solar cells.

Fang Liu won the Best Poster Contribution Award at the Upstream Engineering & Flow Assurance (UE&FA) Forum held in San Francisco during the AIChE Annual Meeting in November 13-18, 2016. The title of her presentation was "A Multicomponent Diffusional Model for Adsorption Dynamics of Asphaltenes at Water/Oil Interfaces". The UE&FA forum serves to advance knowledge in the upstream part of energy industry through the principles of chemical engineering. Fang is a 5th year PhD student now working jointly with Prof. Sanjoy Banerjee and Prof. Vincent Pauchard. Her research studies are on asphaltene adsorption at water-oil interfaces and its adsorption at hydrophilic solid surfaces for enhanced oil recovery. Fang was the recipient of Best Teaching Assistant Award in 2015 and elected as Seminar Chair in the Chemical Engineering Graduate Student Council from 2015-2017.

Sidhant Pednekar was among 20 students from around the US selected for the Active Matter Summer School at Georgetown University in June 2017. He was also chosen to take part in the "PepsiCo Journey Through Science", a daylong event sponsored by PepsiCo and the New York Academy of Science; held at the Freedom Tower in downtown Manhattan. This event focuses on interacting with leaders from PepsiCo as well as fellow researchers attending the event. Sidhant is a 5th year PhD student in the research group of Prof. Jeff Morris at the Levich Institute. His research is supported by the Pacific Northwest National Laboratories, and focuses on complex colloidal dispersions, where he has made advances in examining the role of attractive forces and particle size distribution on the flow properties of such suspensions.

Sungyup Jung was recently selected as a recipient for KSEA-KUSCO scholarship and ECS travel grant awards. The Korean-American Scientists and Engineers Association (KSEA) is a nation-wide society that promotes the application of science and technology and fosters cooperation between the US and Korea. Sungyup is one of twenty recipients among applicants in STEM fields from US graduate schools. The Electrochemical Society (ECS) will support a travel grant for Sungyup to attend the national meeting this fall. Sungyup's research topic is electrochemical modification of biomass-derived chemicals. He is in his 5th year at CCNY as a PhD candidate under the guidance of Prof. Elizabeth Biddinger. After graduation, Sungyup would like to continue scientific research for electrocatalysis and electrochemical materials in either an academic or industrial laboratory.

FACULTY AWARDS



Robert J. Messinger
Assistant Professor

Prof. Robert J. Messinger was awarded the 2017 CUNY Junior Faculty Research Award in Science and Engineering (CUNY J-FRASE) to investigate next-generation electrode materials for rechargeable aluminum metal batteries, an emerging energy storage technology. The CUNY J-FRASE award provides \$50,000 in unrestricted funds to support Prof. Messinger's battery research efforts and is generously funded through the Alfred P. Sloan Foundation. At CCNY, his research group seeks to design and synthesize novel materials and devices for energy and engineering applications, with an emphasis on measuring, understanding, and controlling molecular-scale phenomena that govern their macroscopic functions. Prof. Messinger joined the Department of Chemical Engineering at CCNY in Fall 2015 as an Assistant Professor and as a core faculty member of the CUNY Energy Institute. He earned a PhD in Chemical Engineering from the University of California, Santa Barbara (2012), where he studied multi-scale phenomena in self-assembled and hierarchically-structured materials as well as microfluidic systems involving transport near surfaces. He then studied advanced materials for rechargeable lithium batteries at the CNRS, France, first as a European Union Marie Curie Postdoctoral Fellow in Orléans (2012-2014), and subsequently with the Grenoble Institute of Technology (2014-2015). He is an expert in solid-state nuclear magnetic resonance (NMR) spectroscopy. He recently was honored to attend the 65th Lindau Nobel Laureate Conference (2015), with 65 Nobel Laureates and 650 early career researchers in attendance from around the world. More about his research can be found at www.cuny.cuny.edu/profiles/robert-messinger-0.

A previous CUNY J-FRASE Awardee (2014), **Prof. Elizabeth J. Biddinger** was recently awarded the 2016-2017 Electrochemical Society – Toyota Young Investigator Fellowship to study the structure-property relationships of reversible electrolytes with the aim of utilizing them as thermal battery safety switches. Prof. Biddinger joined the Department of Chemical Engineering at CCNY in Fall 2012 as an Assistant Professor. She received her Bachelor's degree from Ohio University in 2005 and her PhD from The Ohio State University in 2010, both in chemical engineering. Prior to joining CCNY, Professor Biddinger was a post-doctoral fellow at the Georgia Institute of Technology (Georgia Tech). Prof. Biddinger was among three winners of the fellowship in the second year of the award's existence. The fellowship sponsored by Toyota and administered through The Electrochemical Society, provides a minimum of \$50,000 to the awardee to study green energy technology. The research Prof. Biddinger is doing as a result of the award would prevent thermal runaway from occurring in batteries that have been the cause of recent fires in phones, hoverboards and e-cigarettes, while allowing the device to return to operation once the safety event has been mitigated. More about her research can be found at: www.cuny.cuny.edu/profiles/elizabeth-biddinger.



Elizabeth J. Biddinger
Assistant Professor

Prof. Jeff F. Morris has been announced as the winner of the 2017 Thomas Baron Award in Fluid-Particle Systems of the American Institute of Chemical Engineers (AIChE); this award is supported by Shell. The announcement is at <https://www.aiche.org/community/bio/jeffrey-morris>, and points to Prof. Morris' efforts to probe new and unexplained phenomena in suspensions and emulsions, to advance the theoretical and experimental approaches applied to these materials, and to bring the new understanding to applications. Prof. Morris joined CCNY in 2005; before this time he was a Senior Scientist at Halliburton, and served as an Assistant Professor at Georgia Tech. Prof. Morris received his Bachelor's degree at Georgia Tech and his MS and PhD at the California Institute of Technology, all in Chemical Engineering. Prof. Morris previously served as Chair of Chemical Engineering at CCNY from 2013-2015 and since 2015 has been the Director of the Levich Institute, a research institute of the City University of New York with close affiliation to the Department of Chemical Engineering at CCNY—all of the Directors have been members of Chemical Engineering at CCNY (Profs. Benjamin Levich, Andreas Acrivos, Morton Denn before Prof. Morris). More about his research can be found at: <http://www-levich.engr.cuny.cuny.edu/~jmorris/>.



Jeff F. Morris, Professor
Director, Levich Institute

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 seminar on technical and research topics (Monday 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.

Engage



Sheldon Horowitz, CCNY BE '69, ME '76

Sheldon has been involved in the ChE senior design sequence at CCNY for the past two years. Sheldon has been able to bring his 40+ years of experience in industry, particularly in the field of process development of consumer products, to the design experience for the students. In addition to his involvement in senior design, Sheldon will be helping the undergraduates in resume writing and job interview prep, and reaching out to some of the alumni to reestablish connections. Sheldon can be reached through our alumni email address chealumni@ccny.cuny.edu or through his personal email at sheldohms007@gmail.com.

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Contribute

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

Name _____

Graduation Year & Degree from CCNY (if applicable) _____

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\$ _____ towards Fund for Excellence

\$ _____ towards Undergraduate Student Activities

\$ _____ towards Graduate Student Development

_____ A Gift in Kind

- My employer makes matching gifts.

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: Department of Chemical Engineering (CCNY)

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

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

Information only updates may be sent to: chealumni@ccny.cuny.edu