

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 03/2020

CCNY Chemical Engineer Rosemarie Wesson Named 2019 AAAS Fellow

The ChE Department is delighted that their very own Rosemarie Wesson, Professor and Associate Dean for Research, has been selected as a 2019 American Association for the Advancement of Science (AAAS) fellow. Rose says that it was a “really pleasant surprise” to be recognized for her “seminal contributions to the field of numerical analyses of polymer crystallization kinetics, technology, service to society, and support to education, women, and underrepresented minorities.” She joins ChE department Chair, Prof. Ilona Kretzschmar, as an AAAS Fellow.

Rose has had a long and impressive ascent to her current position as Associate Dean for Research. As a high school senior in Illinois, she applied to Northwestern and MIT with plans to attend Northwestern so she could stay close to home. However, she ultimately decided to take the plunge and moved to Cambridge, MA. Looking back, she is glad she went to MIT even though it wasn't easy adjusting to its academic rigor. She says that to this day she “doesn't know the city of Cambridge well” because she was always too busy studying and did not have time to engage in many social activities like her peers.

At MIT, Rose remembers that there were only 50 minorities out of approximately one-thousand entering freshman, and of that 50, only 13 were black female students. This experience shaped her in becoming a leading mentor for women of color in the ChE field (who make up 5% of AIChE membership). Rose credits her work at Dow Chemical with piquing her interest in polymers, so she attended the Univ. of Michigan (PhD) to study “how polymers move and how to predict how they will behave in solid states.”

Rose feels the AAAS award is “good publicity” for heightening the visibility of the Chemical Engineering department at CCNY. She hopes to see more of her fellow faculty members nominated for this award and strongly believes that ChE faculty at CCNY are well-positioned and well-primed to nominate others (and be nominated) for many prestigious awards, furthering the department's reputation as an excellent place to study, learn, and perform research.



**Prof. Rosemarie Wesson,
Associate Dean for
Research**



The City
University
of
New York

Department website: www.ccnycuny.edu/chemeng



www.ccnycuny.edu/engineering

MESSAGE FROM THE CHAIR

Dear Alumni and Friends of the Department,

How have you been? As I am working on this Newsletter, I see the sun peeking through a cloudy sky on a day when the temperatures are hovering near 0°C. The semester is in full swing and our prospective PhD students are visiting as I write. It has been another busy six months. The Department is doing well, and as you will see, we proudly report on the achievements of our students, faculty and staff.

The Fall 2019 semester was interesting! The first Alumni Night of the semester, was given by Sean O’Neill (ChE PhD ‘18), who shared with students the best approaches to finding a job after graduating. Next, we co-organized an event on Columbus Day weekend in honor of Prof. N. Parker from Civil Engineering who ran the NYC Louis Stokes Alliance for Minority Participation for 25 years. Many of our students obtained research experiences through the LSAMP program.

Then, in November, our team competed at the International Chem-E-Car competition. It was



Prof. Ilona Kretzschmar, Chair

my first time being involved in the competition as the team’s faculty advisor. It was amazing to see these young professionals come together with a common goal, help each other out, support each other and egg each other on to reach their full potential. I am proud to report that the team placed 4th with their car, stopping 33 cm from the target distance. Well done, Team Manganese Prime! We also had a great time at the department’s Alumni and Friends AIChE 2019 reception in Orlando, FL. It was good to see many of you and hear about where life has taken you!



Chem-E-Car team places 4th with Manganese Prime at the 2019 International Competition



AIChE Gala, 2019

The AIChE conference was followed by the 8th Shinnar Memorial Lecture & the CUNY Energy Institute Celebration. You can read more about both events in this Newsletter. December started with the AIChE 2019 “Doing a World of Good” Gala, where we were the only New York City Chemical Engineering Department in attendance! Our faculty, alumni and students had a blast at the event and it was good to hear about all the good work that’s being done with funds raised at the event.

The 100th Anniversary Celebration has given us a chance to reflect on our history and plan our future. The Newsletter will take you down memory lane (Can you help us identify faculty and staff from 1958?), report on recent events, and introduce a couple of Spring 2020 events, which we hope you will participate in. We have designed the “Next Century Challenge,” where we want to see how many of our alumni we can mobilize to participate in the challenge. Finally, I would like to highlight Albert Goldman in the Chair’s Alumni Highlight below. Albert graduated from CCNY in 1950, yes, that is seventy years ago. He has many fond memories of the department!

Enjoy the Newsletter and I look forward to hearing from you!

- Ilona Kretzschmar



**Albert Goldman
ChE BE ‘50**

Chair’s Alumni Highlight: Albert Goldman graduated in 1950. He recalls that his CCNY professors set a high bar for excellence. When he and his classmates complained about the demanding coursework, the ChE professors had a common retort, “this is nothing....wait until you get out there and have to earn a living!” When ‘they’ did “get out there,” they were surprised and pleased to find that they were well-prepared to confront and solve the many process, equipment and facility problems facing their industries. Over five decades, Albert worked in foods, cosmetics, adhesives, pharmaceuticals and chemicals, designing and building innovative solutions for leading manufacturers in these industries. Albert’s manufacturing facilities and buildings can be found as close as New Jersey and as far away as Nicaragua and Israel. Some of his most interesting experiences involved his work for Charles Revson, best known for founding cosmetic giant Revlon. Revson who started his career as a ladies-ready-to-wear salesman on 7th Avenue, had an idea (early 30s) – “why shouldn’t ladies’ lips and nail color coordinate with the four major season

clothing changes?” His answer... “Fire and Ice!” and the beginning of a new major industry! He tapped Albert in 1967 to build a new integrated facility to produce the entire Revlon line in the desert of Arizona. Ground was broken in 1968 by the then Governor of Arizona. From 1970 until his retirement in 1996 Albert held engineering leadership positions with consulting firms, Farbwerke Hoechst in Rhode Island and National Starch and Chemical Company (a division of Unilever) in New Jersey. In retirement, Albert travels extensively and consults occasionally on selected projects.

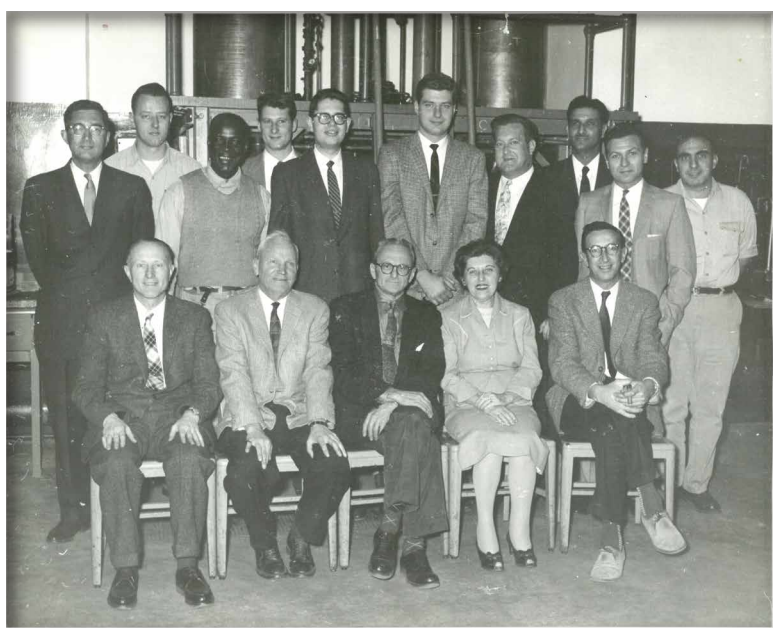
GROVE 100th ANNIVERSARY: Looking Back

A Walk Down Memory Lane

As part of the 100th Anniversary Celebration, we took a look at our photo album and found a number of photographs filled with great memories to share with our alumni.

One photograph stood out to us. The photograph (to the right) shows the faculty and staff of the Department of Chemical Engineering in 1958 (62 years ago!). Unfortunately, the photograph is not captioned and we would like your help in figuring out who is who and where it was taken?

If you were a student here in the 1950s or 60s and still remember the faculty, secretaries, and technicians then, please e-mail (ikretzschmar@ccny.cuny.edu) with your guesses and help us identify people in the photograph!



Chemical Engineering Faculty and Staff in 1958

Past Moments and Mementos



Civil Service		Industry			
1954					
SAMPLE					
number of men		38			
monthly wage		\$299			
		1953		1954	
	CS	I	CS	I	
C	38	15	14	26	
E	\$299	\$334	\$305	\$341	
Ch	2	9	4	12	
E	\$285	\$335	\$285	\$340	
E	12	77	10	71	
E	\$291	\$347	\$294	\$357	
M	4	34	6	54	
E	\$285	\$349	\$287		



1943: Kolodney is sent off to work on the Manhattan Project at Los Alamos. His buddies sure knew how to celebrate! L-R: Ryan, Dixan, Marlies, Kolodney, Schmidt, Schurig, and White. 1954: Table from Tech News (11/04/1954 front page) showing monthly salaries back then for various engineers. 1970: Tech Day - Henry Myers demonstrates the oscillating spring. 1986: Tardos, Mazzone and Firnberg conducting an experiment in the powder science laboratory (Courtesy of Dominick Mazzone). 1990: (L-R) Graff, Watkins, and Weinstein with two visitors from Exxon in the lower bay of the unit operations lab. 1998: Winners of the AIChE Competition with Graff in the upper bay of the unit operations laboratory - does anybody recognize the experiment in the back?

GROVE 100th ANNIVERSARY: Celebrations

Our Fall 2019 semester was busy! We hosted three Alumni Nights featuring alumni from Johnson & Johnson, Cresilon Inc., Merck, and Estée Lauder. We also attended our annual Alumni and Friends reception at the AIChE meeting in Orlando, FL. We celebrated Prof. Neville Parker (CE) and the LSAMP program, and held our annual Reuel Shinnar Memorial Lecture.

2019 Shinnar Memorial Lecture & 2019 CUNY Energy Institute Celebration

As part of our Centennial Celebration, we invited Amos Avidan (ChE PhD '80), a retired Bechtel Executive, for our annual Reuel Shinnar Memorial Lecture. We started the event with a department luncheon attended by the Shinnar family, Dan Shapira (ChE PhD '83), Leonard Akonsky (ChE BE '52), Alvaro Neira (ChE BE '80, MS '86), Dominik Mazzone (ChE PhD '86), Peter Compo (ChE PhD '89), Martin Sherwin (ChE BE '60, PhD '67) and guests from ExxonMobil. Next, we opened the lecture with an exciting announcement: the endowed Shinnar Visiting Professorship reached \$370,000 of our \$500,000 goal! We are thrilled to have our 1st Shinnar Visiting Professor in Fall 2020. Amos Avidan, a former PhD student of the late Prof. Shinnar, gave an insightful and thought-provoking lecture on "Chemical Engineering Challenges in Delivering Energy to 11 Billion People in the 21st Century." The lecture was followed by a reception sponsored by CCNY and ended with dinner with the Shinnar family.

On Day 2 of the event, we celebrated the CUNY Energy Institute (CUNY EI) with a very well-attended panel on "The Future of Chemical Engineering at CCNY: Reuel's Vision and Contributions." The panelists were Martin Sherwin, Prof. Morton Denn, Amos Avidan, and Manfred Morari (U Penn) with CUNY EI Director Sanjoy Banerjee moderating. Attendees asked questions ranging from "How to solve the energy crisis?" to "What do you recommend we specialize in to be ready for the real world?" Afterwards, the panelists and guests toured a number of EI-affiliated laboratories on campus. The day came to a close with a luncheon during which CCNY President, Vincent Boudreau, addressed our alumni and guests and thanked them for their continued support.



November 2019 - The City College of New York - Celebrating the Legacy of the late Reuel Shinnar

Save the Dates! Upcoming Reunion - Friday, May 15th & Saturday, May 16th, 2020

The final event of our 100th Anniversary Celebration will be the upcoming 2020 reunion! The reunion will celebrate the alumni of the Department of Chemical Engineering whose graduation year ends in "0" or "5." Invitations & RSVP info will go out shortly and we hope to see any and all of you for a dinner reception, a day of laboratory tours, meetings with students and faculty, a campus tour, a photo exhibit and much, much more!

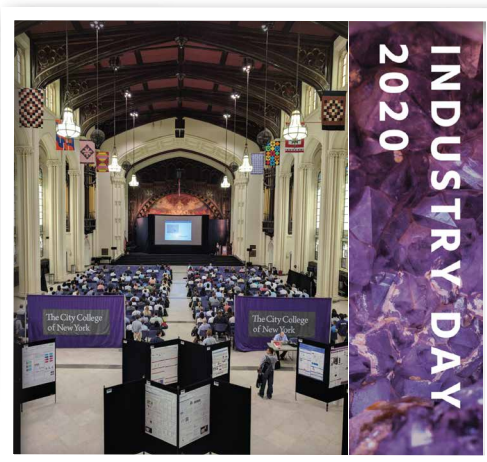
GROVE 100th ANNIVERSARY: Alumni Engagement

In 2019-20, we have celebrated The Grove School of Engineering's 100th Anniversary. Going forward, we strive to continue to engage both current and future alumni as we head towards the Chemical Engineering Department's 100th anniversary in 2036!

Come Visit Us! Industry Day at The Grove School of Engineering - May 15th, 2020

The Inaugural Industry and Expo Day of The Grove School of Engineering (GSOE) takes place on May 15, 2020 on our campus, and is designed to bridge the work of our engineers and the world of industry by highlighting cutting-edge research and emerging engineers from the campus.

GSOE's Industry and Expo Day aims to increase interaction between students, faculty and industry. We are looking forward to welcoming industry partners, sharing work of the next generation STEM workforce, and showcasing GSOE's renowned faculty who are preparing students for the future. The event represents a key component of GSOE's strategic plan to increase our direct engagement with industry, and will include tours of GSOE's state-of-the-art facilities and showcase our Centers and Institutes. Student design projects and research presentations will be featured from areas that include bioengineering, robotics, energy and the environment, materials and structures, cyber-science and cybersecurity, and transportation. We anticipate about 75 companies and more than 300 students and faculty attending.



Great Hall in Shepard Hall

Welcome our Three New External Advisory Board Members!



Anuj Chauhan
ChE PhD '98



Makonnen Payne
ChE PhD '08



Julianne Vernon
ChE BS '04

We are delighted to introduce our three newest External Advisory Board members. Prof. Anuj Chauhan is the Head of the Department of Chemical Engineering at Colorado School of Mines. Dr. Makonnen Payne is a Senior Principal Scientist at Pall Corporation. Dr. Julianne Vernon is the Assistant Dean of Academic Programs at Vanderbilt University. Each one of them brings their own unique experience to the Board. We would like to express a

sincere "Thank You" to our outgoing EAB members, Prof. Kathleen Stebe (U Penn), Dr. Nikhil Kalyankar (Apple Inc.) and Nati Huer-tas-Melancon (BASF) for their insightful advice and time commitment over the past three years!

The Next Century Challenge

We have had a great first 100 years in The Grove School of Engineering! Now it is time to look towards the next century. The impact that chemical engineers will have on the future is bright. We have the tools and skills to be able to address some of the world's most pressing challenges including those at the energy-food-water nexus, personalized and targeted medicine, the preservation of the environment and development of next generation materials. To educate our students at the graduate and undergraduate levels we need to continue to instill in them the rigor of the chemical engineering curriculum while incorporating new advances, applications, and soft skills necessary to be engineers of the future. We are looking to you – our alumni and friends – to help us ready the next generation of students through the "Next Century Challenge." In this challenge we are looking to maximize alumni participation – any donation, even donations of \$5 can make a big difference!

To make a donation, please go to <https://www.cuny.edu/chemeng/make-gift>. You will need to select the designation of "Grove School of Engineering" and in the comments please indicate "Chemical Engineering." After you have made the donation, please, send an email to Prof. Ilona Kretzschmar at ikretzschmar@ccny.cuny.edu to indicate that your donation is for the "Next Century Challenge."



Seniors working on their Senior Design projects.

Checking in With Our Staff

Whenever our alumni come back to visit they want to know how our staff is doing. This is because our staff really make CCNY a great place to be and they help our students succeed. Here, we check in on the recent accomplishments of our Chemical Engineering staff.

Lisa Taylor, Department Administrative Assistant

Many of you know Lisa as the “keeper of the third floor” since September 2001. She makes sure the department’s paperwork, scholarships and other awards are taken care of, while ensuring our students have a place to come ask questions and get advice. What you may not know about Lisa, is that she just completed her BS in Computer Science in Fall 2019 at Lehman College! This was a long-term commitment for Lisa and we are so proud of her. After receiving her Associates in Computer Science from LaGuardia Community College, Lisa started her bachelors studies in Computer Science in 1992 at Lehman. Lisa took classes part-time while working and raising her 3 boys through 2005, and then stopped her studies completely to focus on family and work. Lisa never forgot about her degree being so close to completion, so in Fall 2018 she returned to Lehman to finish her last 6 courses. Congratulations Lisa!



Lisa Taylor

Andrew “Andy” Eng, Department Chief Lab Technician



Andy Eng

Andy is the “Jack-of-all-Trades” for the Chemical Engineering department. He makes sure the department’s facilities, computer systems, and undergraduate and research laboratories run smoothly. If anyone needs help in the department, Andy is the first one contacted. After being exposed to Chemical Engineering as a student at CCNY, Andy joined the department as a Senior College Laboratory Technician in Spring 1995, replacing Mr. R. Smith. As some of you know, Andy does not like to be photographed so we literally had to sneak up on him to take his picture! In Fall 2018, Andy was promoted to Chief College Laboratory Technician as an acknowledgement for his dedication to the department. Congratulations to Andy on his promotion!

Jennifer Harrington, Department Academic Advising Manager

Jennifer started as the new Academic Advising Manager on October 15, 2019. In this role, Jennifer is the main point person for our undergraduate and graduate students’ academic advising needs. She helps our students navigate their course registration plans, provides advice on how to be successful at CCNY, helps students find the resources available to them on campus, and makes sure our programming and assessment materials are accurate and up-to-date. Jennifer is also getting involved in the interactions with alumni and efforts in increasing the visibility of the department. Jennifer previously was the Assistant Director of Academic Advising at Baruch College, and before that, the Assistant Registrar at Stevens Institute of Technology. Jennifer has been doing a great job so far at CCNY and we look forward to continuing to work with her. Welcome Jennifer!



Jennifer Harrington



Zhenrong Xu

Zhenrong Xu, Department Chief Lab Technician (Retired)

And what about “Xu”? Xu retired in September 2017 after 29 years in the department. He enjoys spending time with our students so much that he has come back as an adjunct to assist in our teaching labs every semester since retiring. Thanks Xu, for continuing to be part of our program!

ChE Research Highlights: Papers of the Year

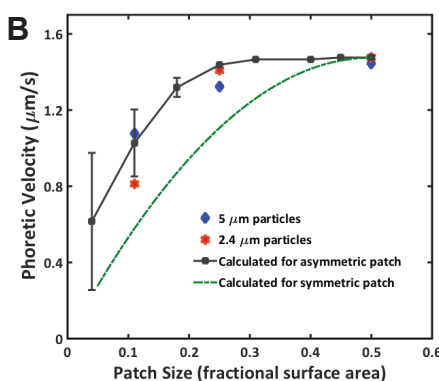
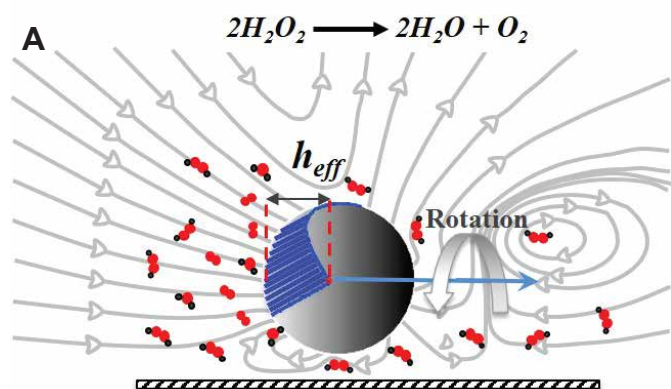
The Department of Chemical Engineering has instituted a “Paper of the Year” award for doctoral students in the program. This award emphasizes the crucial role of publications in establishing the professional credentials of engineering scientists. For 2019, the award goes to Zohreh Jalilvand and Jeffrey Xu as first authors on especially high-quality and impactful papers. Jalilvand is advised by Prof. Ilona Kretzschmar, and her paper was co-authored by Dr. Amar Pawar (ChE PhD ‘09) and Kretzschmar; Xu is advised by Assistant Prof. Robert Messinger and his paper was co-authored by Dr. Damon Turney, Ankur Jadav, and Messinger. A summary of each work is provided below.

Experimental Study of the Motion of Patchy Particle Swimmers Near a Wall

Recent efforts to generate particles that propel themselves by consuming a reactant, or synthetic “swimmers,” have garnered great interest, with potential applications in medical and pharmaceutical industries and environmental remediation. In this study, Jalilvand and co-authors probed the motion of patchy and Janus particles near a wall. The terms “Janus” and “patchy particles” refer to spherical particles that are 50% or less coated with a thin layer of metal, for example, platinum. Platinum catalyzes the decomposition of H_2O_2 leading to a reaction-driven motion of the particles. The work illustrates the CCNY team’s ability to precisely



L-R: Prof. Messinger, Jeffrey Xu, Zohreh Jalilvand, Prof. Kretzschmar



engineer the motion of particles by controlling their surface properties.

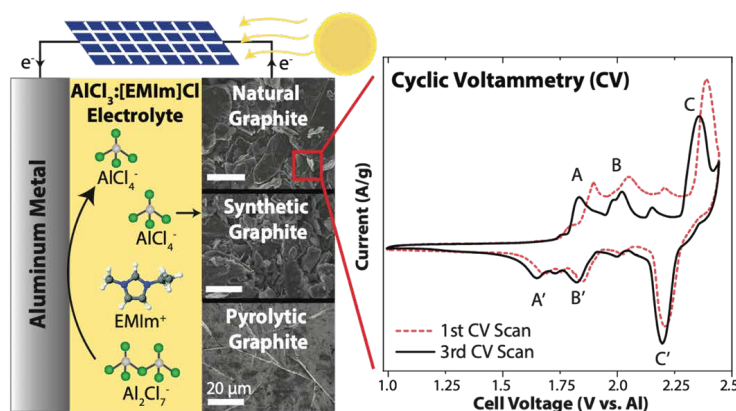
Journal Reference: Zohreh Jalilvand, Amar B. Pawar, Ilona Kretzschmar Langmuir, 2018, 34 15593-15599.

A: Complex flow field created by rotating patchy particle.

B: Measured and Predicted Swimming velocities

Effects of Graphite Structure and Ion Transport on the Electrochemical Properties of Rechargeable Aluminum–Graphite Batteries

The growing concern over climate change is spurring interest in better batteries for electrified transportation and grid-scale energy storage. Lithium-ion batteries are too expensive for large-scale applications on a global scale and pose safety concerns due to flammability. Xu and the team studied the promising next-generation aluminum-graphite battery. The system offers a low-cost, non-toxic, non-flammable battery chemistry. By applying analytical electrochemical, spectroscopic, and imaging techniques on several structurally-distinct graphite electrode systems, Xu, et al., were able to elucidate the origins of the excellent discharge rate capabilities of this novel battery chemistry, establishing results that they hope will facilitate design of graphite electrodes with enhanced electrochemical performance.



Establishing structure-property relationships of graphitic electrodes using cyclic voltammetry. Used with permission from ACS.

Journal Reference: Jeffrey H. Xu, Damon E. Turney, Ankur L. Jadhav, Robert J. Messinger ACS Appl. Energy Mater. 2019, 2, 11, 7799-7810.

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 and 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

Engage



Oneil Reid, ChE BE '08

Oneil has supported our CCNY students and recent alumni by coming back to give great advice during Alumni Nights and recruiting CCNY students for internships and permanent positions with his employer, Merck. After graduating from CCNY in 2008, Oneil began his career at Merck at the West Point, Pennsylvania manufacturing facility working in operations as a bio-technician producing Gardasil® (HPV vaccine) in a Good Manufacturing Practice (GMP) environment. He then moved up within the company as a Chemical Field Engineer where he troubleshooted equipment, performed process monitoring, and supported complex investigations for multiple products. Oneil is now an Associate Director at the Merck campus in Elkton, Virginia where he has leadership responsibility in the digital modernization of process batch instructions and process monitoring. In addition, Oneil has leadership responsibility for development and implementation of process robustness initiatives for Gardasil®. If you are interested in contacting Oneil, he can be reached via LinkedIn (<https://www.linkedin.com/in/oneil-reid-29004219/>) or e-mailed at: reid.oneil@gmail.com.

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) _____

Company _____

Address _____

City _____ State _____ Zip Code _____

Phone _____

Contact email _____

Signature _____ Date _____

\$ _____ towards Fund for Excellence

\$ _____ towards Undergraduate Student Activities

\$ _____ towards Graduate Student Development

_____ A Gift in Kind

My employer makes matching gifts.

Employer name: _____

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