

In Memoriam: Remembering Emeritus Professor Andreas ("Andy") Acrivos

Emeritus Professor Andreas ("Andy") Acrivos was a beloved mentor, engaged colleague, and long-time friend who passed away on February 17, 2025. Prof. Acrivos had a profound impact on the Department of Chemical Engineering and beyond. These testimonials below show the breadth of his impact on his students and colleagues at CCNY.

Prof. Acrivos' Time at CCNY's Levich Institute

Prof. Acrivos joined CCNY as the Albert Einstein Professor in 1986 and taught until his retirement in 2001. During his tenure at CCNY, Prof. Acrivos was inducted into the National Academy of Sciences in 1991 and received the National Medal of Science in 2001. He supervised one physics and six chemical engineering PhD students, who have shared their memories below.

Dr. Wolfgang Polifke (PHYS PhD '90), Professor of Thermo-Fluid Dynamics at the Technical University of Munich says, "I owe so much to Andy. I remember his passion for opera [and a funny] episode with the 'Levich Sofa.' Benjamin Levich was a disciple of Lev Landau. Legend has it that Landau never sat at a desk and instead, he lay on a sofa reading papers and discussing physics with his students and colleagues. When the Levich Center was created, Levich insisted on having a large sofa in his office too. After his death, the sofa remained - and rumor has it that tired graduate students after a long night in the lab would sometimes sleep there overnight rather than commuting back home to Brooklyn.

When Andy arrived to replace Levich, he felt strongly that the sofa had to go—it was clearly not compatible with his work ethic. A few graduate students removed the sofa from Andy's office and brought it, unbeknownst to Andy, to the graduate student lab, a former space on the 3rd floor with a few cubicles and a huge table in the center of the room. They placed the infamous sofa on that table since there was no other space in the room. The sofa rested very prominently on this 'pedestal'. A few weeks later, Andy was giving a tour of the facilities to important visitors and when he brought the delegation up to the 3rd floor, he was not amused to see the sofa atop the table. He felt the sofa gave

others the impression that the work ethic in Steinman Hall was lacking. So, this time, the sofa had to go, for real and for good.

When I last visited Andy and his wife, Jennie, in Palo Alto in 2014, Jennie gave me a cutting from one of her plants. She told me, 'Just put it in soil and water regularly, but not too much.' Now the cutting she gave me has grown into a huge plant that's almost too large for my office. It's so big that every time I walk to my desk, I brush against its leaves. I learned that the plant is a relative of the 'Queen of the Night' plant and every few years a single, huge flower blossoms at night and wilts at dawn, a veritable reminder of how ephemeral our own existence is."



Queen of the Night Blossom

Dr. Bir Kapoor (ChE PhD '94), Chief Executive Officer at Gujarat Fluorochemicals Limited, India, writes that, "Prof. Acrivos was a brilliant mind and an extraordinary mentor. I was his first [ChE PhD] student at the Levich Institute at CCNY. As my PhD advisor, he was far more than a teacher—he was a guiding light who



Andreas Acrivos (1928 - 2025)

shaped my approach to both research and life. With his razor-sharp intellect, he had a remarkable ability to find elegance in solutions, cutting through complexity with insight and grace. Apart from being one of the greatest minds in the area of fluid mechanics, his mastery of scientific writing set a standard of clarity and precision that I still strive to emulate. He always believed that doing doctoral research with him was not about specific subjects, but more about learning to approach and solve problems. That philosophy became my foundation, propelling me to success in my professional life. Today, I owe a significant part of my achievement to the lessons I learned under his guidance. His kindness, patience, and brilliance touched countless lives, and though he is no longer with us, his legacy lives on in every problem I tackle and every milestone I reach. Rest in peace."



L-to-R: Dr. Kapoor (ChE PhD '94), Prof. Acrivos with Levich Institute members (1991) and in his lab (1993)

Prof. Anubhav Tripathi (ChE PhD '98), Brown University, remembers that, "Back in 1993, I was blessed to get a spot in [Andy's] research group at CCNY. I owe all my accomplishments to him. There are many never-ending academic and funny stories about Andy. For example, I remember when I installed his first computer in his office and taught him how to use the 'Pine' email platform—this was a big deal because previously all of his emails had to be printed out by his colleague, Mary Wright, so he could read them. Another benefit of teaching him how to use his new computer was that he could furtively check his investments in the stock market without anybody knowing. He browsed the stock market while working on yet another asymptotic solution for a different fluid mechanics puzzle. Andy has left an inspiring part of himself in everyone's heart who got to know him. My sincere condolences to his wife, Jennie, his friends, and his entire academic family. May his soul rest in peace."

In Memoriam: cont'd...

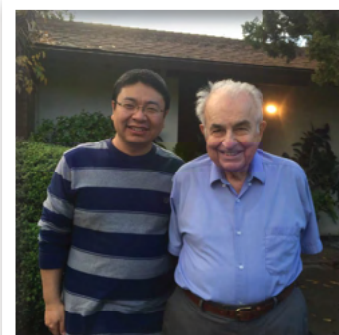
Prof. Mahesh Tirumkudulu (ChE PhD '01), Head of Chemical Engineering, IIT Bombay, says that “I have incredibly fond memories of City College and my time with Andy. I joined his group in 1996 for my PhD, and the first few months were challenging—he wanted to be sure I was truly committed to dedicating the next 4–5 years to research. It soon became clear that what he was really teaching me was the value of passion and the importance of holding oneself to the highest standards. Andy genuinely cared about his students, not just academically but also personally. He stayed in touch, always eager to hear how we—and even our families—were doing. When my parents visited the US, he gave them a tour of the Met Museum. His influence on my intellectual growth and career has been profound. I will always be deeply grateful to him.



L-to-R: Prof. Tirumkudulu, Mary Wright, Prof. Acrivos, and Prof. Demetrios Papageorgiou at the 1998 Mayor's Awards for Excellence in Science and Technology reception held in 1999

One encounter in particular left a lasting impression on me. While working on a thin film problem, Andy and I encountered a pre-print with a dense derivation of a related problem. Andy suggested we go through it together to deepen our understanding. So, one Saturday morning, we met in the Levich classroom. He alternated between reading the paper aloud and deriving equations on the board, while I dutifully took notes. We started at 10 am, broke for a quick lunch at his favorite Greek diner around 1 pm, and then dove right back in. By late afternoon, I was completely exhausted, but Andy was as energetic as ever, charging through the equations well into the evening. He was 70. I was 25, yet, somehow, I was the one struggling to keep up! I also remember a funny episode when we discovered an instability in sheared suspensions—I had taken photos of this phenomenon for our manuscript. This was the era before smartphones and the film needed to be developed first. I trekked to a little camera shop near Lincoln Center where I ran into his wife, Jennie. She was there collecting photos from their recent holiday trip. She chatted with me for a bit, and, just before leaving, casually asked me to remind Andy ‘to bring home Cuban biscuits.’ When I reported this back to Andy, he laughed heartily and told me that without those biscuits, he would not have bothered going home!”

Dr. Bo Jin (ChE PhD '04), Principal R&D Engineer at Honeywell, recalls that, “During my PhD study in the ChE Department and the Levich Institute at The City College of New York from 2000 to 2004, Prof. Acrivos taught me many skills which are still useful in my current industrial R&D role: He taught me how to conduct asymptotic analysis on complicated mathematic model equations in fluid mechanics. The elegant asymptotic method from his lectures and guidance have not only left me with an incredible impression but have also provided a powerful means to enhance my understanding of many equations. When facing difficulties in solving problems, he always emphasized the importance of persistence and communication. I still clearly remember how he helped me to revise and modify numerous drafts of my thesis to achieve clarity in writing.”



Dr. Jin & Prof. Acrivos in California (2014)

Dr. Anil Kumar (ChE, PhD '05), Senior Director at Kovalus Separation Solutions, says that “Andy really shaped my life. I came from India with no clue of what I wanted to do in my life. My first interaction with him was quite simple but powerful. I went to his office, knocked on the door and asked if I could introduce myself. He let me in, we spoke for 15 minutes during which he asked me about India and Delhi, and mentioned a frightening car trip he took from Delhi to Agra in an Ambassador car without a seat belt. In those 15 mins, I felt a different level of energy around him, something that made me declare, ‘I want to do a PhD with you!’ He demurred, saying he was retired. But I persisted even after he told me, ‘Anil, it is not easy to work with me, you will be working 7 days a week, 365 days a year, for the next 5 years.’ The following week, I was officially his last PhD student.



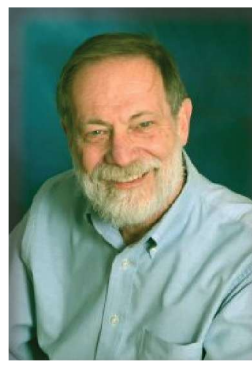
Dr. Zhiyong Qiu, Dr. Kumar, Prof. Acrivos, & Dr. German Drazer in the lab (2002)

The next 7 years were the best time of my life, where I not only did a PhD with him, but also became his last postdoctoral associate. As an immigrant himself, he knew the challenges one faces in a new country. He was there to help in every aspect of my life, from research to obtaining my green card, to getting my first job in industry. He gave me full autonomy to pursue research and was there when I needed help or had any challenges. I kept a picture of him watching our experiments in the lab as a reminder of him. After I graduated, we stayed in touch and even visited him and his wonderful wife, Jennie, in New York in 2012. Andy was a true legend and I am fortunate that I had the opportunity to work with him so closely.”

Past & Present Levich Directors Pay Tribute

Emeritus Prof. Morton M. Denn, Levich Director, 2000-2015:

Prof. Denn remembers that he first met Andy at Stanford, “more than fifty years ago, when I was a young chemical engineering faculty member at the University of Delaware. I will never forget the charm and grace with which he greeted me, asking about my work and even commenting on a paper that I had recently published. Andy had a reputation as a tough critic, and young researchers were terrified if he was in the audience during a presentation, but his questions, as disquieting as they might have been, were just a way for him to understand the essence of an idea that was being presented. Clarity was the simplest way to avoid an Acrivos cross-examination.



**Emeritus Prof.
Morton M. Denn**

Andy and Leon Lapidus were the first two students to complete their PhDs at Minnesota under the direction of Neal Amundson, who was a leader in the introduction of mathematics into chemical engineering education and practice. Andy’s PhD research was on the use of matrix analysis to understand separation processes, a far cry from what we think of as typical Acrivos research. It is important to recall that fluid mechanics was not a core subject in chemical engineering education at that time, and those chemical engineers of Andy’s generation who worked in fluid mechanics were essentially self-taught. He moved into the field on his own and he ultimately owned it; the chemical engineering fluid mechanics community today is dominated by his academic tree.

The institute created at CCNY for Levich was mostly staffed by outstanding émigré physicists and mathematicians who had little interaction with the academic program. When Andy came to CCNY to direct the institute, now named for Levich, he made an effort to bring the institute into closer association with the academic goals of the College, and that association continues to this day. Levich Institute members are active participants in the educational missions of the chemical and mechanical engineering and physics departments. Andy’s publications on suspensions, which continued throughout his tenure at CCNY, had an enormous impact on the profession as a whole, and on those of us at CCNY in particular. The progress made by Levich Institute researchers leading to a new paradigm in suspension rheology would not have been possible without his foundational work.

Andy and I overlapped on the faculty for a year when I came to succeed him as the director of the Levich Institute. He was his usual gracious self in making sure that I settled in easily and met the important people in the CUNY system to ensure a smooth transition. He was a welcome physical and intellectual presence after his formal retirement, and it was a sad day for us when he gave up his New York apartment and settled back fully on the west coast. His heritage remains a guiding presence for us.”

Prof. Jeffrey F. Morris, Levich Director, 2016-present:

I could talk for hours and days about Andy and his positive impact, but will touch on just a few instances that come to mind for me and things I hold dear in my good fortune of knowing Andy.



**Prof. Jeffrey F.
Morris**

My interactions with Andy date to my first major conference presentation at the AIChE National Conference in 1993, while I was a graduate student giving a talk that served as a preliminary job interview for academic positions. As usual in a fluid mechanics session, Andy was seated in the front row, attentively watching and listening, and (as Mort Denn has noted) making young (and some more experienced) speakers rather nervous. When I finished my talk, Andy smiled, and for me that spoke volumes. Not all of my talks received quite such a positive response from Andy.

Throughout Andy’s career, a number of workshops or technical sessions at larger meetings were dedicated to him; two stand out. One was a session at another AIChE meeting, at a dinner following the first day of talks by Andy’s academic friends and academic family (the latter being former PhD students or post-docs of his, and their students, and so on and so forth to further generations). This took place in Miami Beach, famous for its nightlife, but shortly before 9 p.m. following several toasts lauding the importance of an Acrivos educational upbringing, Andy stood up to give his thanks...and to remind us all to go home and get some sleep because, “Tomorrow’s a work day.” So much for doing the merengue! The second instance I fondly recall was an international workshop organized by Andy in Istanbul in the summer of 2006. Just like the stunning city itself, I vividly recall Andy’s recollection as we stood together on the back of a boat going up the Bosphorus toward the Black Sea. Andy spoke fondly of Istanbul, where as a child he had visited his uncle, and the joy he felt in sharing one of his favorite spots with those in his closest scientific community.

Going back to the idea of “academic family,” I should say that I am an Acrivos academic grandchild; my advisor, John Brady, at Caltech studied with Andy at Stanford in the late 1970s. John recalled that in his student days, if Andy came by your desk to discuss research on a Friday afternoon, he’d invariably end with “let’s talk about it tomorrow” which meant having to postpone Friday evening movie plans and prepare for the next day’s discussion with him. When I came to CCNY, I was invited to take part in Saturday discussions of this sort with Andy and his last CCNY PhD student, Anil Kumar, as well as NJIT collaborator, Boris Khusid. These sessions were intellectually intense, and, for students, I am sure challenging. I am sure they were also profoundly valuable. Discussions of data and modeling approaches were broken by lighthearted recollections over coffee or lunch, and created more impact- (continued on page 4)

Prof. Acrivos' Enduring Legacy

(Prof. Morris continued from page 3) ful memories than any movie I have seen.

In closing, I'll recall Andy's words that resonated most deeply. When I was at a turning point in my early academic career, Andy and I spoke on the phone about various options. I recall Andy saying that a location is all about the people – "don't worry about anything else," he said, "if the people care for one another and want to do the best work possible, you will be happy in that place." For me, this sage advice captures the human element of our profession that Andy himself embodied. This human connection should always be emulated even though the void Andy left cannot be filled.

The Acrivos Graduate Fellowship

The Andreas Acrivos Graduate Fellowship commemorates the intellectual curiosity and academic leadership of late Emeritus Professor Acrivos. Each year, the Chemical Engineering Graduate Studies Committee awards a first-year PhD student with the Acrivos Fellowship. The criteria used to select an Acrivos Graduate Fellow is a combination of the performance in classes, qualifying examinations, and departmental leadership. The 2025 Acrivos Fellow is **1st year PhD student Milton Lliguichuzhca (ChE BE '20)**. After graduating from the ChE BE program, Milton worked as a process automation engineer at Automation and Control Specialists (Janssen Pharmaceuticals) for three and a half years before returning to the department as a doctoral student. In Fall 2024, Milton joined Prof. Castaldi's team, where he works on plastic waste pyrolysis to produce solid, liquid and gaseous fuels through catalytic thermal degradation in the absence of oxygen.



We asked our previous Acrivos Fellows to share their thoughts about winning this award.

Dr. Xiaoxiao Chen (ChE PhD '14), Principal scientist at DSM-Firmenich, says: "As a recipient of the Acrivos Fellowship during my PhD studies at CCNY, I am very grateful and proud of the recognition and encouragement it provided to me. Receiving this prestigious award as an international student was one of the greatest honors of my academic journey, especially given the challenges I faced in my first year of my study."



Dr. Archit Dani (ChE PhD '17), Process Engineering Manager at Intel, recalls: "One of my personal motivations about joining the PhD program at CCNY was to be able to learn more about fluid mechanics and the Acrivos Fellow award gave me confidence and validation to further that passion."

Dr. Sidhant Pednekar (ChE PhD '18), Head of Data Science and AI at Millennium remarks: "It was an honor to receive the

Acrivos Fellowship in 2014—a recognition that deepened my admiration for Prof. Acrivos' groundbreaking work in complex fluid flow and suspension rheology. Though I never met him in person, his insistence on starting from fundamentals, being ruthlessly curious, and persevering with rigor has shaped my approach to problem solving. Carrying on his legacy in suspension research at the Levich Institute has been both a privilege and a profound motivator in my career."

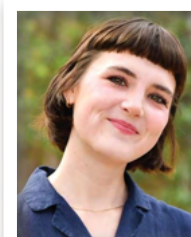
Luis Ortuno Macias (ChE PhD '25), Advisor – Bioproduct Research & Development at Eli Lilly states: "Being named the Acrivos Fellow in my first year of the PhD program had a profound impact on my early academic journey. Coming from Venezuela, where opportunities for research and advanced education were limited, this recognition served as a powerful motivator. It affirmed my decision to pursue a PhD and gave me the confidence to overcome the challenges of transitioning to a new academic environment."



Eric McPherson, 4th Year PhD Student, comments: "I've been truly honored and inspired to be named an Acrivos Fellow after someone whose work continues to shape Chemical Engineering and informs my research on bubble-driven colloidal assembly."

Lauren Creadore, 3rd year PhD student, says: "I am honored to have been selected as an Acrivos Fellow. I made a conscious effort during my PhD to make the most of the once in a lifetime opportunity, meaning to focus deeply on the work at hand and enjoy the long and sometimes arduous journey. Especially in my first year, the time period for which the Fellowship is awarded, I was dedicated to learning as much as possible, considering that I was quite nervous about officially becoming a chemical engineer. Therefore, I was truly appreciative of receiving the fellowship as a form of validation of my efforts."

Colleen J. Jackson, 2nd year PhD student, states: "It is a great honor to be named the Acrivos Fellow. To have my name associated with his in any way gives me confidence in my ability to make a positive contribution to science. I am grateful that my efforts towards department leadership are recognized and appreciated. Acrivos' work in fluid dynamics and transport is taught in our classes today. Getting this award was definitely a big boost in my PhD career and he will always be a big inspiration to me."



List of Acrivos Fellows (2002 - present)

2002 Dr. John Paul Bir Singh	2010 Dr. Genti Zyltyftari	2018 Dr. Yegor Nikitin
2003 Dr. Rajesh Goyal	2011 Dr. Eric Fried	2019 Dr. Leo Gordon
2004 Dr. Rohit Ingale	2012 Dr. Archit Dani	2020 Dr. Seungri (Victor) Kim
2005 Dr. Pandurang Kulkarni	2013 Dr. Stéphanie Marenne	2021 Dr. Luis Ortuno Macias
2006 Dr. Mehrdad Kheiripour	2014 Dr. Sidhant Pednekar	2022 Eric McPherson
2007 Dr. Prasad Karanjkar	2015 Dr. Fanny Thomas	2023 Lauren Creadore
2008 Dr. Ehssan Nazockdast	2016 Dr. Michael D'Ambrose	2024 Colleen J. Jackson
2009 Dr. Xiaoxiao Chen	2017 Josephine Chen	2025 Milton Lliguichuzhca