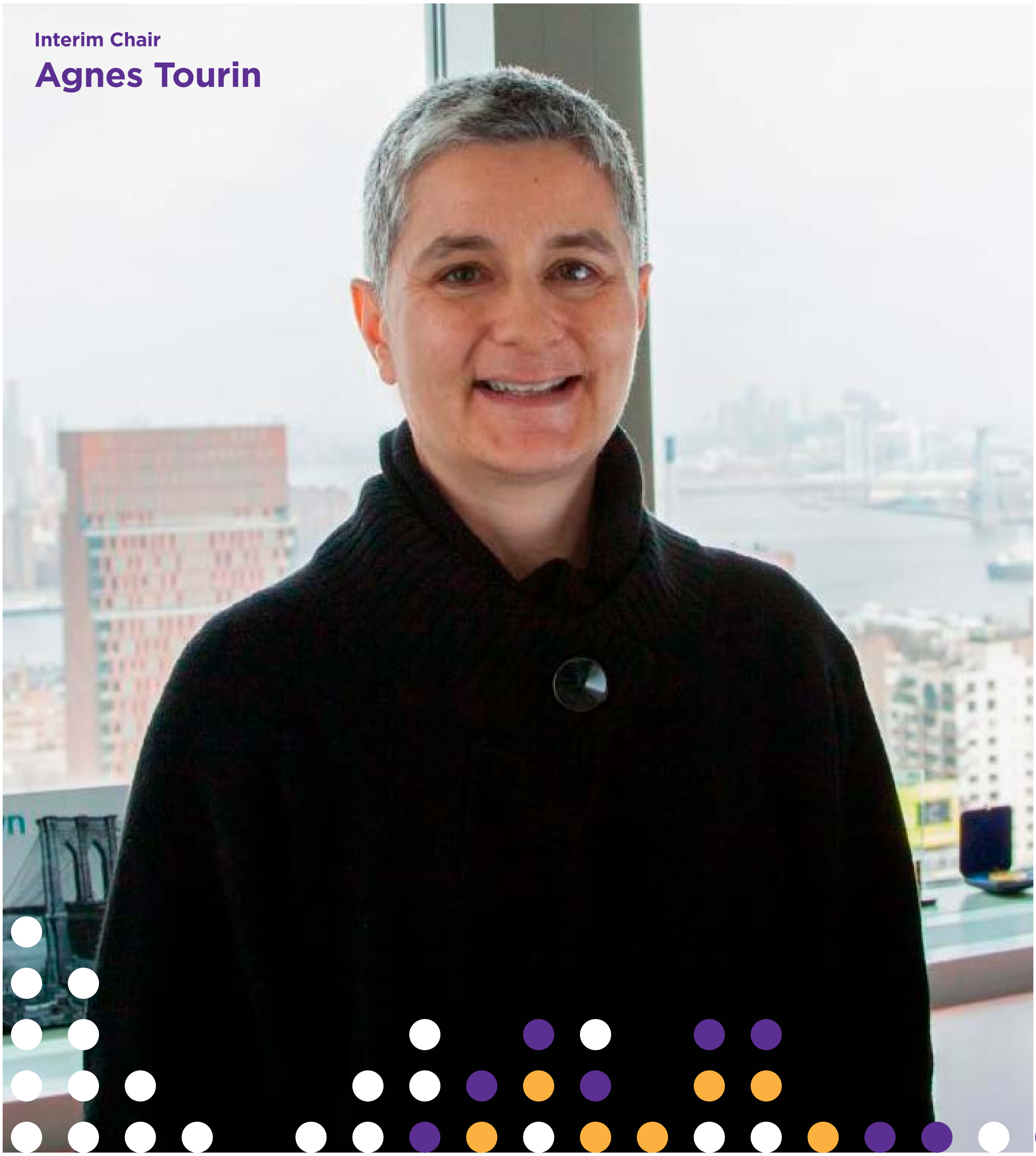
SPRING 2023

CatchingFiRE

THE OFFICIAL NEWSLETTER OF THE NYU TANDON DEPARTMENT OF FINANCE AND RISK ENGINEERING

Interim Chair

Agnes Tourin



Interim Chair

Agnes Tourin

Dear FRE Newsletter Readers,

As we enter Women's History Month, I am celebrating the designation of Linda Mills as the first woman President of NYU, at the conclusion of a months-long search I had the honor to be included in.

I stepped into the role of FRE Interim Chair about a month ago and have been working closely with the full-time Faculty and Staff to ensure the continuity of our operations and uphold standards. I am confident that, together, we will continue to be able to provide students with an exceptional learning experience and wonderful professional opportunities.

I am also very proud to share that the NYU Tandon MSFE program continues to hold the #2 spot in TFE Time's Best Master's of Financial Engineering Programs for 2023. This ranking was just released on February 21 and I take this opportunity to thank all the FRE Faculty and Staff for their commitment and dedication to the success of the MSFE program.

Sincerely,

Agnes Tourin

Reflection from Fall ‘22 as Interim Chair

David Shimko

Happy Spring! As we welcome a new calendar year, I have been asked to reflect on our collective experience in the FRE Department and my role as Interim Chair. Following the memorable Peter Carr Memorial Conference in June, commemorating the loss of our prior chair, we were all concerned about what the future might bring. We have therefore begun an international search for a suitable replacement for Peter, knowing his genius could never be replicated --- but also thinking this might be a chance to get a highly respected outsider to reveal interesting and new future possibilities for our department. We have already had several applicants for the position and hope to select and announce a successor by summer. Above all, we expect to preserve our position as one of the leading financial engineering departments in the world.

This outcome seems to be made even more likely with the announcement that NYU is making a long term investment of $1 billion in the NYU Tandon School of Engineering, including the purchase of 3 Metrotech Center, which is intended to become departmental offices, labs and a premier student center and cafeteria, built to accommodate our large and growing student body.

With a smaller full-time faculty and staffing stretched to its limit, we have kept the ship steady. In Spring 2023, we matriculated a class of 155 new students. We have seen an overwhelming number of new applications so far for admission to the program and look forward to welcoming another strong, talented cohort in the fall.

We have added new adjunct faculty and classes to the curriculum, including Rich Radnay, teaching financial application of blockchain, and Robert Benhenni, teaching a course on commodity markets as well as a valuation course. We are happy to be offering over 50 unique courses this semester.

The placement department has had another successful year, having placed 94% of our job-seeking graduates within three months of graduation. We were proud to see our graduates off as they joined risk and quant roles across Wall Street and beyond, at firms such as Amazon, American Express, BlackRock, Barclays, Citi, Deutsche Bank, Morgan Stanley, Nomura, PNC, Oppenheimer, and UBS, to name just a few.

Finally, it is my pleasure to pass the baton to Agnes Tourin, who officially became the new Interim Chair in January. Please join me in welcoming Agnes to the post, wishing her well, and supporting her efforts to guide us steadily forward.

Sincerely,

David Shimko

#9

QuantNet Ranks Tandon FRE Ninth

The 2023 QuantNet ranking of Financial Engineering, Quantitative Finance master's programs in the nation provides detailed information on placement and admission statistics from top programs in the country, making it uniquely valuable to the quant finance community at large. This year, the Tandon FRE Program ranks #9 amongst the leading graduate programs in the United States.

The 2023 QuantNet ranking is aimed at helping prospective applicants decide where to apply and enroll in these master quantitative programs.

NYU Tandon Administration Adopts Jennifer Novicki's Faculty Handbook

During the summer of 2022, our Communications Manager, Jennifer Novicki, developed an FRE Faculty Handbook, which includes information on developing a course syllabus, using NYU Brightspace, important policies, and links to additional resources.This handbook was later adopted by NYU Tandon Faculty Affairs and repurposed for all Tandon Faculty. This document is easily accessible on the Information for Faculty page on Tandon's website: https://engineering.nyu.edu/information-faculty#chapter-id-27893. Jennifer is currently completing her master's thesis in the Integrated Design & Media program and is expected to graduate next spring

Hitting The Ground Running:

FRE MSFE Career Happenings

The start of the semester is always a busy time for FRE MSFE students as they prepare for the internship and full-time recruitment processes. Before our students even step foot on-campus, they begin a rigorous three-phase career workshop series with Career and Industry Relations Director Sara Tomeo Delusant to prepare them for what's to come. Once they join campus, there are endless events and opportunities in the career space. Below is a look at some of the interesting and insightful career events that have been hosted for the FRE students this fall:

- ***Company Recruiting Presentations:*** There has been no shortage of impressive Wall Street firms on-campus hosting FRE Recruiting Info Sessions this fall! Goldman Sachs, BlackRock, Barclays, Morgan Stanley, Alliance Bernstein, Neuberger Berman and Ergoteles Capital are among the big-name firms who have joined students here on the Brooklyn campus to share the rundown of opportunities offered as they seek out Quant and Risk internship talent!

- ***2nd-Year Recruiting Advice Panel***: Here in the program, we always strive to encourage students to help one another and look to their very accomplished peers for guidance throughout the academic and recruiting processes. That's why we believe that one of the best events we can start the year off with is the 2nd-Year Student Recruiting Advice Panel! On September 13, 2022, 2nd-year students Yiren Yao, Yiwei Li, Carol Yan, and Vinanti Kamath sat on the advice panel to share some of their most useful recruitment tips with their 1st-year counterparts. Topics ranged from how to establish a focus, to networking strategies, helpful courses, and nailing the interview process.

- ***Behavioral Interview Skills Workshop:*** Sara Tomeo DeLusant hosted an October 19, 2022 presentation that covered behavioral and soft-skill interview questions. The session walked through many of the most common behavioral and soft-skill interview questions, addressing what made certain responses acceptable and unacceptable and diving into the psychology behind why these questions are asked. The well-attended session was a great value-add for students who are in the midst of the process themselves.

- ***Technical Interview Skills Session:*** On November 1, 2022, alumni hosted a virtual technical interview skills session for MSFE students. This session, moderated by Sara Tomeo DeLusant, focused on specific resources for technical interview prep. The panel went into granular detail, including which competitions will help you sharpen your Machine Learning skills, types of algorithms to master for interviews, which categories in Leetcode lend themselves best to different interview types, and many other specific tips and tricks for nailing the interview process! We sincerely thank our alumni panelists, Shiva Chandra, Arman Arkilic, Ping Fan, Rohit Gupta, Yusi Yang and Tinghao Li for their contributions!

Highlights from the Peter Carr Gedenkschrift Conference

at the University of Maryland - November 11-12, 2022

COMMENTS FROM FRE ADJUNCT PROFESSOR, BRUNO KAMDEM:

The Peter Carr Gedenkschrift Conference (PCGC), held from Friday, November 11-12, 2022 at the University of Maryland, Robert H. Smith School of Business in College Park was an action-packed colloquium in honor of our late colleague, mentor, and friend, Peter Carr. The conference kicked off on Thursday evening, November 10, at the Cosmos Club. Eminent authors such as Albert Kyle, Helyette Geman, and Russ Wermes, among others, honored Dilip Madan's invitation by their noted presence. The dinner ended with an enlightening tour of the 144-year-old club.

The actual conference started on the rainy morning of Friday, November 11, with an uplifting virtual presentation by Robert Jarrow on Asset Price Bubbles and Wealth Preserving. Helyette Geman followed with a noteworthy lecture on Oil Storage and Shocks. Some other noted presenters for the day were Paul Glasserman (Total Positivity and Relative Convexity of Option Prices), Freddy Delbaen (Approximation with Independent Variables), Mathieu Rosenbaum (How to Design a Derivatives Market?), and Stefan Tappe (Exploiting Arbitrage Requires Short Selling).

The Friday session ended with a reception ceremony at the Marriott Hotel near the University of Maryland. A distinguished guest was Carol Carr, Peter's wife. In his remarks, Madan amazingly summarized the life of Peter Carr, emphasizing his unique intellectual abilities, his many contributions to the fields of Finance Mathematics and Financial Engineering, his humility, and humanism. In a showof rare emotion, Madan reiterated to all in the audience the important role Carr had played in his personal and professional lives.

Presentations continued on Saturday, November 12. Some notable talks were given by Maxim Bichuch (A Deep Learning Scheme for Solving Fully Nonlinear Partial Differential Equation), Umberto Cherubini (Option Pricing Generators), Roger Lee (EMA-type Trading Strategies Maximize Utility under Partial Information), and Madan (Option Returns).

The successful and intellectually engaging conference celebrated the life and accomplishments of a unique genius, one with a deep love for simplicity, a great sense of humanism, and a passion for mathematics applied to finance. The presence of Carol Carr added to the significance of the conference which, according to a recent report, may become an annual event.

ADDITIONAL COMMENTS FROM THE EVENT ORGANIZER, DILIP MADAN:

The Peter Carr Gedenkschrift Conference was sponsored by Mathisys, Jane Street Capital, the Center for Financial Policy of the Robert H. Smith School of Business, and the Scientific Association of Mathematical Finance. Nineteen papers were presented—eight of them virtual. The Conference Dinner on Friday night featured remarks on Peter's life and career written by Philip Protter and presented by myself.

Professor Aboussalah at his University of Toronto doctoral graduation

Profile:

INDUSTRY ASSISTANT PROFESSOR AMINE ABOUSSALAH

Amine Mohamed Aboussalah has lived all over the world, studying and working in Morocco, France, and Canada, among other locales. Somewhat shy, he adapted to new places and cultures by making friends on the soccer field. He became so skilled at the game that he was ultimately signed to a semi-professional team in Montreal. "I still consider a soccer ball to be a great vector of communication," he says.

His love for science rivaled his love for the game, however, and when it came time for university, he entered a joint program at the Institut Supérieur de l'Aéronautique et de l'Espace (ISAE-SUPAERO), in Toulouse, and Polytechnique Montréal, studying Engineering Physics, Aerospace Engineering, Astrophysics, and Applied Mathematics and earning dual bachelor's and master's degrees in 2013. That year he also earned a postgraduate diploma in Innovation Management from HEC Paris, where he specialized in strategies for the aerospace sector.

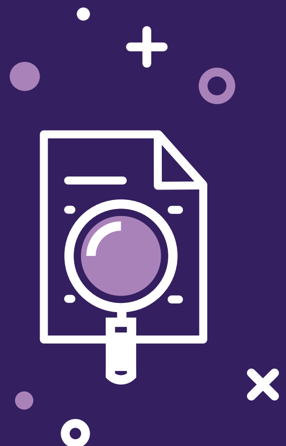
While still a student, he served as a research assistant at the Canadian Space Agency and became deeply interested in cosmology and the study of black holes — a topic that became the subject of his master's thesis. He admits that some people, upon looking at his CV, question his subsequent tenure at Oncopole (the Cancer University Institute of Toulouse), but he explains the natural connection: "Both fields — cosmology and oncology — rely on imaging, and both require an understanding of radiation and its related tools," he says.

An interest in artificial intelligence and reinforcement learning next led him to the University of Toronto, where he completed a thesis on "Exploiting Structure to Mitigate Risk in Real-World Financial Control Problems" and earned a Ph.D. in AI and Operations Research.

While he would rather not define himself as strictly focused on either theory or application, preferring to engage with both, he does feel it's important to address real-world issues. As he quickly discovered, some of the most challenging issues occur in the world of finance. "As I worked on developing new decision-making algorithms for real-world problems, I turned to financial time-series data," he recalls. "That's a great challenge for researchers, because it's chaotic, 'noisy' data, which is a common characteristic for many real-world problems."

Aboussalah — who has also worked with the World Bank Group and the French Alternative Energies and Atomic Energy Commission — later launched DeepAlpha, a quantitative research firm, and Maidan Analytics, a political risk consultancy, but realized that it would be fulfilling to add teaching to the mix. "My first experience in front of a classroom was as a TA, and I discovered I loved it," he says. "There's nothing better than helping students master difficult topics and pushing them to advance in their fields. I think all professors want their students to ultimately surpass them."

At Tandon — a school whose stellar reputation for financial engineering and focus on entrepreneurship he admires — he is helming a class on machine learning for financial engineers. "It's the best of both worlds," he asserts. "I'll be creating knowledge through my research and sharing knowledge in the classroom."



Recent Papers

Aboussalah presented a paper based on his thesis work at the Institute for Operations Research and the Management Sciences (INFORMS) conference, the premier conference in Operations Research, in Indianapolis in October 2022. The paper–"What is the value of the cross-sectional approach to deep reinforcement learning?"—demonstrates how exploiting structure with reinforcement learning can mitigate risk in real-world financial learning problems.

In New Orleans the following month, he presented another paper, "A Deep Reinforcement Learning Framework For Column Generation," at the Thirty-Sixth Annual Conference on Neural Information Processing Systems (NeurIPS 2022), a prestigious and highly competitive machine-learning conference. The research featured in the paper has many engineering applications, including those in the realms of finance, transportation optimization, energy, food and agriculture, and efficient manufacturing. Professor Aboussalah is working with a Tandon student to expand this work for use in portfolio management.

Welcoming Other New Members of the FRE Family

Robert Benhenni has extensive experience in the financial industry with nearly 20 years at New York City investment banks and hedge funds, where he held various roles in portfolio management, quantitative analysis and risk management.

He started his career at Bell Labs working on stochastic queueing models to predict network performance, before moving to the financial industry where he has been involved in various areas such as credit derivatives pricing, capital structure valuation and credit default models with Wall Street firms such as Morgan Stanley and Credit Suisse. Additionally, he was a portfolio manager at various funds where he created systematic investment strategies in the High Yield credit markets and commodities futures that have shown very strong performance. He is currently the executive officer of QFA providing advisory services in systematic investment strategies covering credit, commodities and global indices.

He has maintained strong contact with academics lecturing in both the US and Europe, and presenting at various international conferences. He has published in various financial topics, including derivatives, High Yield and distressed debt, and optimization.

Benhenni received his Ph.D. in Applied Mathematics (Probability/Statistics) from UCLA and his MBA in Analytic Finance with honors from the University of Chicago Booth School of Business.

Richard Radnay is currently the CTO at Custodia Bank, a digital assets focused bank bridging the divide between banking & digital asset custody, this is the bank of the future.

Prior to Custodia, he spent more than 20 years on Wall Street, managing all aspects of trading, asset management, arbitrage, and risk management.

In 2009 he co-founded and built a hedge fund specializing in providing data & analytics to investors with a focus on Exchange Traded Funds (ETFs). The business was acquired by the London Stock Exchange Group in 2016.

His experience includes managing software engineers, data scientists, dev/ops infrastructure and both buy and sell-side research.

He holds an MBA from Zicklin School of Business (CUNY) and began this year to teach about Blockchain and Cryptocurrency.

3, 2, 1 Metrotech Center - Marissa Alonzo's Family Connection

In the summer of 2021, Marissa Alonzo joined the Department of Finance and Risk Engineering as the Program Coordinator. She was excited to share the news with her family. To Marissa's surprise, her mother, Christine, had some news of her own: more than two decades before, both she and Marissa's dad, Mario, had worked in 3 and 2 Metrotech at JP Morgan Chase. Who knew that 23 years later, their daughter would take the same commute to 1 Metrotech Center and walk through the same commons! Things sure have changed, but Metrotech Center will always be a part of Marissa's family history.

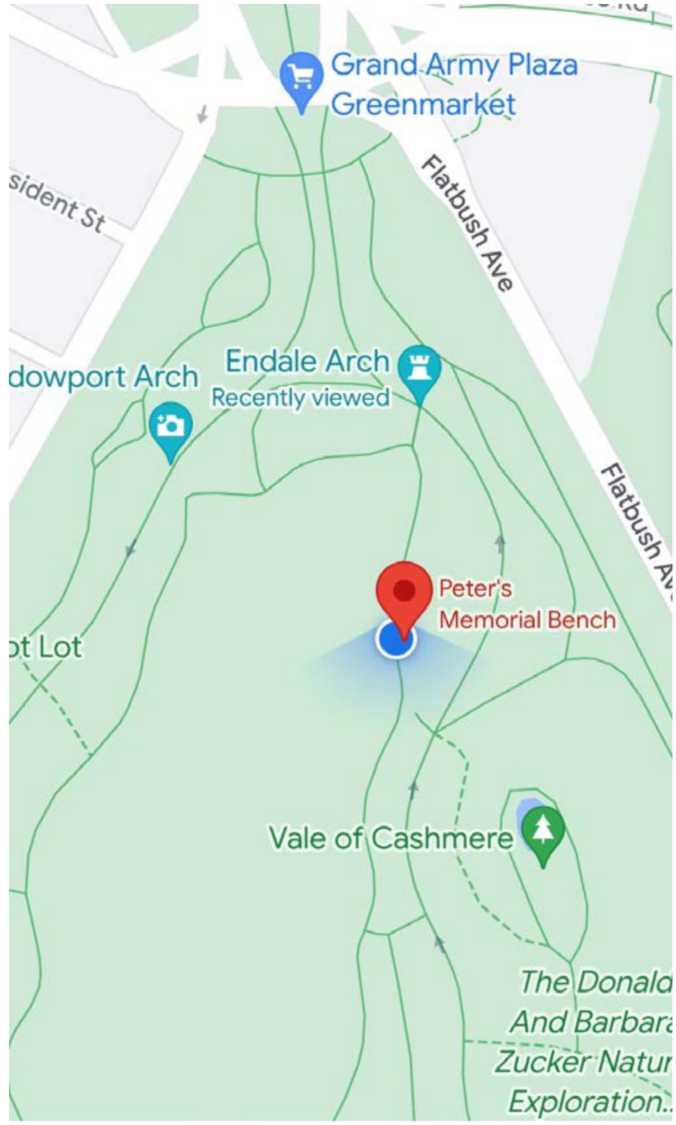
The End-of-Semester Luncheon Got Really Ugly

The FRE Department hosted its annual end-of-semester luncheon on Wednesday, December 7th. After a two-year hiatus due to Covid, the faculty, staff and students celebrated a successful semester. Several attendees wore their festive holiday sweaters, sang karaoke, and reflected on another amazing year in FRE. Interim chair David Shimko sang the full version of “Tong Hua” in Mandarin (“Fairy Tale” in English), while the staff and students sang along to their favorite tunes.

In Loving Memory of Peter Carr - Memorial Bench

Peter's wife, Carol, and daughter, Olivia, at his memroial bench

The late Peter Carr's family has dedicated a memorial bench in Prospect Park, located roughly 100 yards south of Endale Arch, facing the northeastern edge of Long Meadow, between the fourth and fifth lampposts. The plaque is appropriately inscribed for a financial engineer. This location is where Peter and his wife, Carol, would begin their runs through the park. When you visit, please be sure to upload your photos to this link : https://padlet.com/nyufre/in-loving-memory-of-peter-carr-53n4wqhw8rm84bak



Spring 2023 - Peter Carr BQE Seminar Series

THE FOLLOWING GUEST SPEAKERS ARE CONFIRMED FOR THE PETER CARR BQE SEMINAR SERIES THIS SPRING AT 6PM:

THURSDAY, FEBRUARY 2	Neil Pearson, University of Illinois at Urbana-Champaign
WEDNESDAY, FEBRUARY 8	Amine Mohamed Aboussalah, NYU Tandon, FRE Department (this lecture was held on Wednesday to accommodate Amine's teaching schedule)
THURSDAY, FEBRUARY 16	Kris Jacobs, University of Houston
THURSDAY, FEBRUARY 23	Matt Lorig, University of Washington
THURSDAY, MARCH 30	Marcantonio Moustapha, Alpha Innovations
THURSDAY, APRIL 6	Agnes Tourin, NYU Tandon, FRE Interim Chair
THURSDAY, APRIL 20	Cristian Homescu, Bank of America

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Design: NYU Tandon Marketing and Communications Office

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