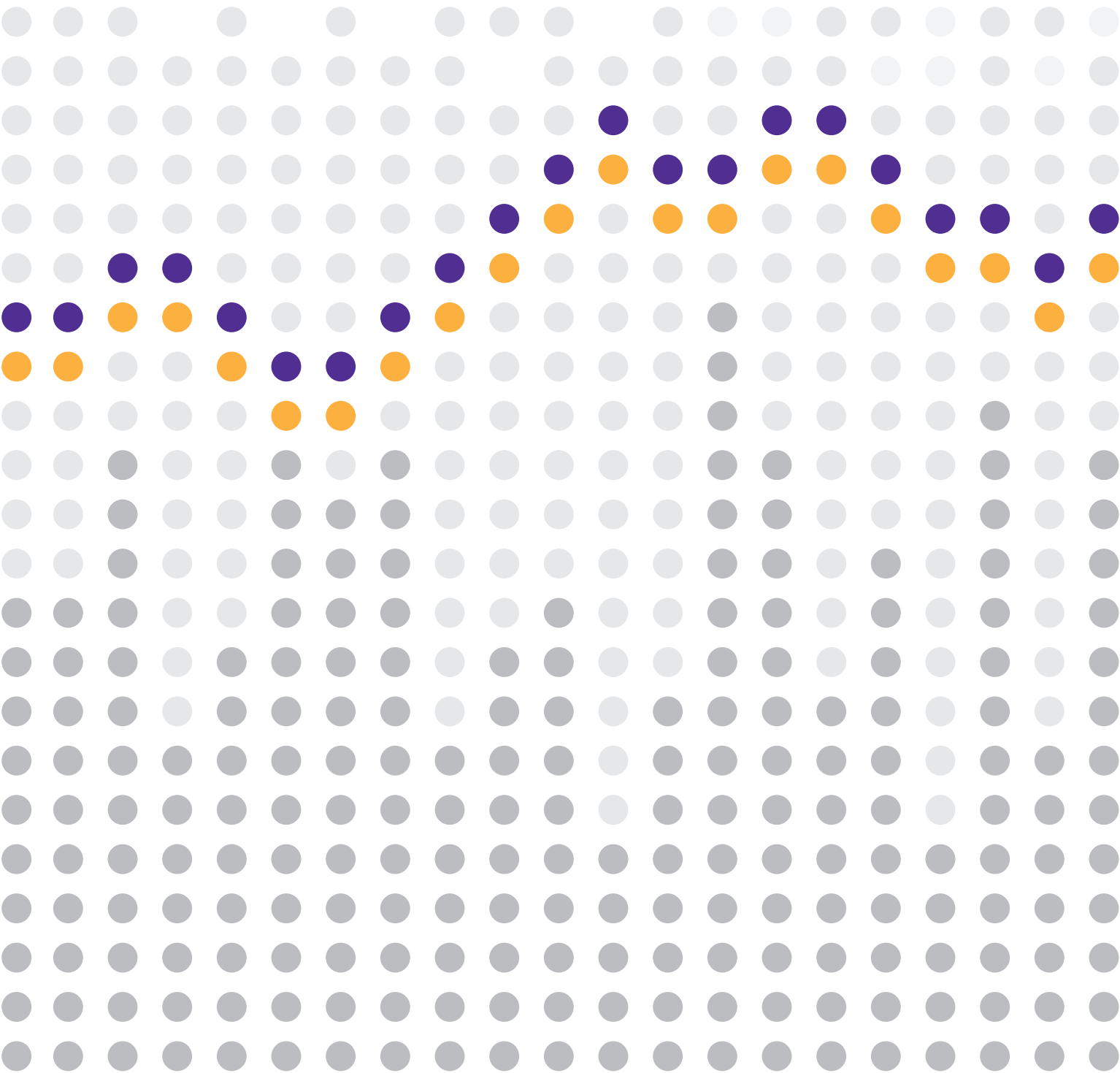


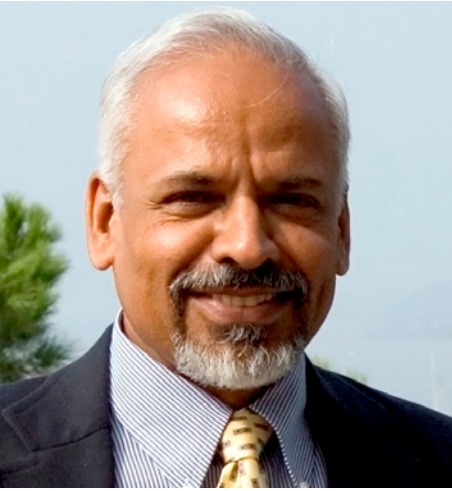
Catching FIRE

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



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FROM THE DEAN'S DESK OF

Dr. Katepalli Raju Sreenivasan

I am delighted that FRE has revived their newsletter. We certainly have had a lot of news from the MS in Financial Engineering program this year. We saw a 25% increase in applicants for fall 2017 admission and are proud to say that we remain at 45% female students in our admitted/deposited fall 2017 incoming cohort. The department is more committed to industry integration than ever. Peter Carr, our Department Chair, brought on board a number of new professors from industry, and we have recently introduced industry-hosted student projects as well as 2 industry-hosted courses as new options for the Capstone requirement. FRTB (Fundamental Review of the Trading Book), machine learning, crypto-currencies, and high-frequency trading are just a few of the recent (or upcoming) course additions that we are excited to offer to our students. We are thrilled to have just launched a pre-program online course for incoming students, which will prepare them to hit the ground running both academically and professionally when they begin the program in September. Finally, we have been putting much more effort in job placement after graduation.



Dr. Peter Carr became the latest in that list of internationally recognized figures when he joined FRE in 2016 as full professor and department chair.

Since his arrival, he has devoted great energy to reinvigorating the financial engineering master's program, in the process recruiting several faculty members with decades of solid industry experience and others on the cutting edge of newer topics like machine learning. They are, he explains, an integral part of his broader vision, which includes a strong emphasis on redefining financial engineering, bridging the gap between theory and practice, conducting innovative research, and preparing graduates for increasingly high-tech careers.

Carr, formerly one of Morgan Stanley's top quants, is frequently called upon as a speaker and panelist. His recent engagements included presentations in Barcelona, Mexico City, and New York, and he is slated to keynote the 2017 Global Derivatives USA event in Chicago this November. It's an ambitious schedule but one that keeps him – and Tandon – at the center of what's happening in the financial world.

Financial engineering at NYU Tandon dates back to the mid-1990s, when the school (then called Polytechnic University) launched one of the first such programs in the country, and from the start, it attracted internationally recognized professionals as faculty members.

With honors that included being named Quant of the Year by *Risk Magazine* and Financial Engineer of the Year by the International Association of Quantitative Finance (IAQF), receiving the Cutting Edge Research Award from *Wilmott Magazine*, and landing on *Institutional Investor's* Tech 50 list multiple times,

In the wake of news that Tandon's dean, Katepalli Sreenivasan, will soon be stepping down to more fully pursue his own research and scholarship, we at FRE would like to thank him for his excellent leadership, his hard work, and his many accomplishments over the past eight years.

Widely and affectionately known as Sreeni, he has been instrumental in restoring engineering as a discipline to NYU and setting Tandon on its current, exciting trajectory, which includes the noteworthy revitalization of our own department. As you will read elsewhere

in this newsletter, FRE is attracting increasing numbers of esteemed faculty members, and we now send more graduates to become technology analysts at America's financial institutions than any other school in the world. Those achievements are a direct result of his determination, insistence on high goals and standards, vision, and forthrightness.

In his role as dean, Sreeni will be deeply missed by all of us from FRE, the School of Engineering, and the entire university, and we wish him many years of fruitful scientific research and discovery.

—Dr. Peter Carr

A ROBUST PIPELINE



NYU Tandon sends more graduates to become technology analysts at America's financial institutions than any school in the world, according to a newly published study by eFinancialCareers, which looked at tens of thousands of resumes from its database of U.S.-based technologists in banks and buy-side firms. Analysis showed that Tandon ranked as the top feeder school for technology at financial services firms in the United States.

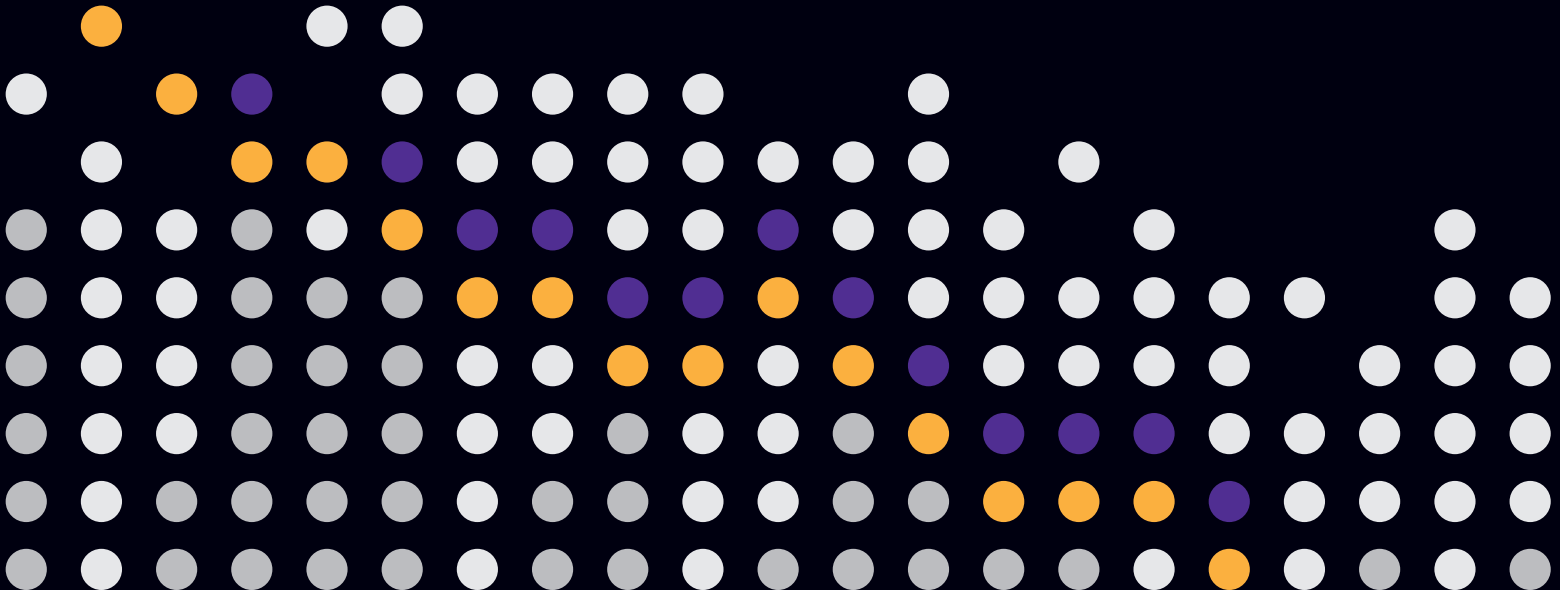
In other good news, earlier this year the firm analyzed more than 60,000 resumes from employees in investment banking to find the top 50 feeder schools in mergers and acquisitions, capital markets, derivatives trading, equities, fixed income sales and trading, quantitative analytics, equity research and other high-paying, client-facing front-office jobs, and NYU landed at number 4 on that list.

"This latest analysis by eFinancialCareers illustrates how important higher education

is to the vitality of a city — and how much students benefit, in turn, by proximity to industry-experienced faculty and internships," said NYU Tandon Dean Katepalli R. Sreenivasan. "For 160 years, our school has been solving the challenges posed by New York City. We were among the first to introduce financial engineering and cybersecurity master's degree programs, and our computer science and engineering students are also heavily recruited by the financial industry. We are proud that our graduates are keeping our economy and financial institutions innovative and secure."

"The Finance and Risk Engineering Department of NYU Tandon has a long history of training students to play a leading role in the use of technology on Wall Street," said Professor Peter Carr, who chairs the department. "With new classes on machine learning, data science, GPU's and cryptocurrencies, we provide students with a front-row seat into exciting new technologies."

In addition to its online publication eFinancialCareers, parent company DHI specializes in financial services recruitment and placement information, operating in 19 markets across North America, Europe, the Middle East and Asia-Pacific. It hosts a job board and a CV database, where financial services and fintech candidates upload their resumes and create profiles. This database provided source material for the two analyses.



FACULTY HIGHLIGHTS

Distinguished Professor of Risk Engineering **Nassim Nicholas Taleb** has traveled widely this year, lecturing at the University of Cambridge's Darwin College on the topic of "Extreme Events and How to Live with Them," presenting the idea of "antifragility" to the president and prime minister of Kazakhstan, and attending the India Risk Management Awards Ceremony in Mumbai.

The author of the multivolume essay the *Incerto* (*The Black Swan, Fooled by Randomness, and Antifragile*), which covers broad facets of uncertainty and which has been translated into 36 languages, Taleb is currently completing his next book, on the topic of tail risk. It is slated for publication in 2018.



Top: Nassim Taleb – center stage in Mumbai

Right: Taleb presenting his lecture in Kazakhstan



In June, **Andrew Papanicolaou** attended the 2017 Conference on Market Microstructure and High-Frequency Data at the University of Chicago. The conference is an annual event providing a forum for the presentation and discussion on how financial data is created, collected and analyzed. Papanicolaou presented a joint work with Peter Cotton (J.P. Morgan) entitled "Trading Illiquid Goods: Market Making as a Sequence of Sealed-Bid Auctions, with Analytic Results," a soon-to-be-published paper giving insight into the decision making

of a market maker who can only obtain and dispose of inventory via a sequence of sealed-bid auctions. The results of this work show how adjustments to a market maker's skew and width are made to accommodate customer arrival imbalance. These results are a perturbation-level justification for the "linear skew, constant width" (CWLS) market making heuristic from trading folklore. Cotton and Papanicolaou have an ongoing collaboration focusing on a variety of topics, including markets for illiquid securities and the applications of machine learning in the finance industry.





When Industry Assistant Professor **Agnes Tourin** is not busy teaching her Quantitative Methods and Pricing and Stochastic Calculus courses at Tandon, she works tirelessly as the academic advisor for the student capstone experiences – multifaceted culminating projects that serve to showcase the depth and breadth of a student's learning.

Tourin, who also serves as faculty advisor of Tandon's Finance Club, recently collaborated with department head Peter Carr, Professor Barry Blecherman, and Career Placement Director Sara Tomeo to help implement projects led by financial

industry practitioners to provide students with solidly practical capstone experiences with real-world utility. Over the summer, the committee introduced four new projects and have plans to announce more in the fall.

In addition to those duties, last spring Tourin was invited to be the plenary guest speaker at a conference on Financial Mathematics at Farmingdale State College, and her credentials as a quant led to her being asked to sit as an external examiner on a recent Department of Statistical Science Ph.D. thesis entitled "Dynamic Trading in a Limit Order Book: Co-Integration, Option Hedging and Queueing Dynamics" at the University of Toronto.

We are proud to announce that *Quantitative Finance*, a leading peer-reviewed journal, recently published her timely paper "Optimal Trading of Cointegrated Portfolios in Arbitrary Dimensions and Application to Arbitrage in Bitcoin Markets," in which she and co-author P. Sopher Lintilhac propose a model for optimal convergence trade strategies and test it by using trades data in the bitcoin markets to illustrate its applicability.

Additionally, he serves as the academic advisor to the department's master's candidates, represents FRE on Tandon's Graduate Curriculum and Standards Committee, chairs Tandon's Undergraduate Curriculum and Standards Committee, and is actively involved in the university-wide Undergraduate Academic Affairs Committee.

Prior to joining what was then known as Polytechnic University, Blecherman served as a Combat Systems Engineer with the United States Navy, worked as the COO at a financial software start-up, and was an in-demand consultant specializing in the areas of pricing and negotiation to Fortune 500 companies and nonprofits.

Although he earned his degrees from the Wharton School of Business at the University of Pennsylvania, he has strong family connections to our institution: he is the proud son of a Poly alum, and two of his four children are currently studying at NYU.



Our history is inextricably linked to **Charles Tapiero**, the Topfer Distinguished Professor of Financial Engineering and Technology Management, who founded the department in 2006 and chaired it until January 1, 2016.

Despite the length of his tenure and scope of his accomplishments, Tapiero is not resting on his laurels. His recent research projects encompass topics such as VIX migration, Mutual FX tracking and multivariate stochastic Riccati processes, financialization risks, fractional ambiguity and behavioral finance, and global quant finance. Based on these projects, he is currently developing new courses for the department in Fractional and Financial Randomness and Computational Finance, as well as in Global Quant Financial Engineering.

In the fall of this year, Wiley will be publishing his book *Globalization, Gating and Risk Finance*, coauthored with postdoc Unra Nyamabuu, and during 2017 he also fed the "academic Journal pipeline" with new research papers that appeared in *Physica A*, as well as in the journals of *Probability, Uncertainty and Quantitative Risk* and *Risk and Decision Analysis*.

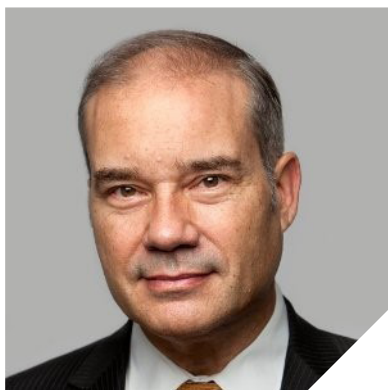
In addition, Tapiero has embarked on a series of lectures and research collaborations that took him to Italy and Israel and that will soon find him in Hong Kong. We applaud his global stature as a researcher and academician and feel lucky that he has set down roots right here in Brooklyn.



Dr. Barry Blecherman has been affiliated with the School of Engineering for nearly a quarter of a century, and he has the string of titles that one might expect to accompany that lengthy tenure.

In his capacity as the Deputy Chair of FRE, he is leading the effort to welcome the MS FE student cohort of 2017 and shepherding in exciting (and soon to be officially announced) curriculum changes.

NEW FRE APPOINTEES



David Shimko was recently hired in the FRE Dept. as an Industry Full-Professor teaching Corporate Finance. His academic history includes posts at HBS, Kellogg (Northwestern), and NYU Courant. He has published extensively in both the academic and trade literature on valuation, derivatives, risk management, commodities and credit. He has worked at JPMorgan in commodity derivatives and credit research, and built Risk Capital, an award-winning independent risk management consulting enterprise. He was Chairman of the Global Association of Risk Professionals and served on private, nonprofit and public boards of directors. Shimko founded CreditCircle, an internet startup company focusing on consumer credit. Please join us in welcoming Professor Shimko to the FRE team.

For more information and additional new faculty profiles, please visit: engineering.nyu.edu/news/2017/07/25/meet-new-faces-fre

FINANCE CLUB PRESIDENT'S CORNER

Meet Vibhati Joshi

Prior to joining the FRE Department, Vibhati Joshi, a second-year senior and sitting President of the NYU Finance Club worked for two years at Morgan Stanley with the Prime Brokerage Business Intelligence team in Mumbai, India. This summer, she interned with American Express at their NY headquarters as a part of the Market Risk Oversight Group with a focus on the FX International Payments business arm. Apart from her academics and work, she is a trained dancer and in her free time likes to read, write, and plan events for the NYU Finance Club. In August, Joshi is planning a student mixer event for the FRE incoming Fall 2017 class.



To support our students in finding job opportunities, the FRE Department hired **Sara Tomeo** in February 2017 as the Career Placement Director. She is a Rutgers University graduate, who recently worked as the Associate Director of Industry Relations with a New York based MFE program. There, she partnered closely with industry firms in order to provide recruitment opportunities to job-seeking students and worked with them on all aspects of career and interview readiness. Tomeo previously spent six years working in Recruiting at Morgan Stanley, managing the firm's Quantitative Finance Campus Recruitment Program. During her time supporting Quant Finance, the program saw tremendous growth in the size and quality of the Quant and full-time campus programs and recruiting efforts. She focused heavily on building out special efforts for the program, such as the Women's PhD Quant Finance Mentorship Program, and the Prize for Excellence in Financial Markets contest. These initiatives became key branding efforts and hiring pipelines for the MS Quant Analyst and Associate programs. Please join us in wishing Ms. Tomeo well in her new role.





In 2017, alumna and FRE Adjunct Professor, **Asha P. Matthei** joined the Federal National Mortgage Association (Fannie Mae) in Washington D.C., as a senior Financial Engineer in the group which models credit risk in the \$253 billion multifamily mortgage portfolio, the world's largest. Fannie Mae's primary focus in the multifamily business is the guarantee of private mortgage loans and the subsequent structuring and sale of mortgage-backed securities, "MBS." Because of the granularity of multifamily mortgages, Fannie Mae employs numerous

credit models based upon geographical regions of origination. As a senior member of the modeling team, Matthei is responsible for implementation and maintenance of the credit models used for pricing new deals, risk management, calculation of economic capital and valuation for reporting income. Prior to joining Fannie Mae, Matthei spent five years at World Bank Group in D.C. as an Associate Financial Officer of the International Finance Corp. Matthei graduated in 2011 from the Finance and Risk Engineering Master's program with a concentration in computational finance.

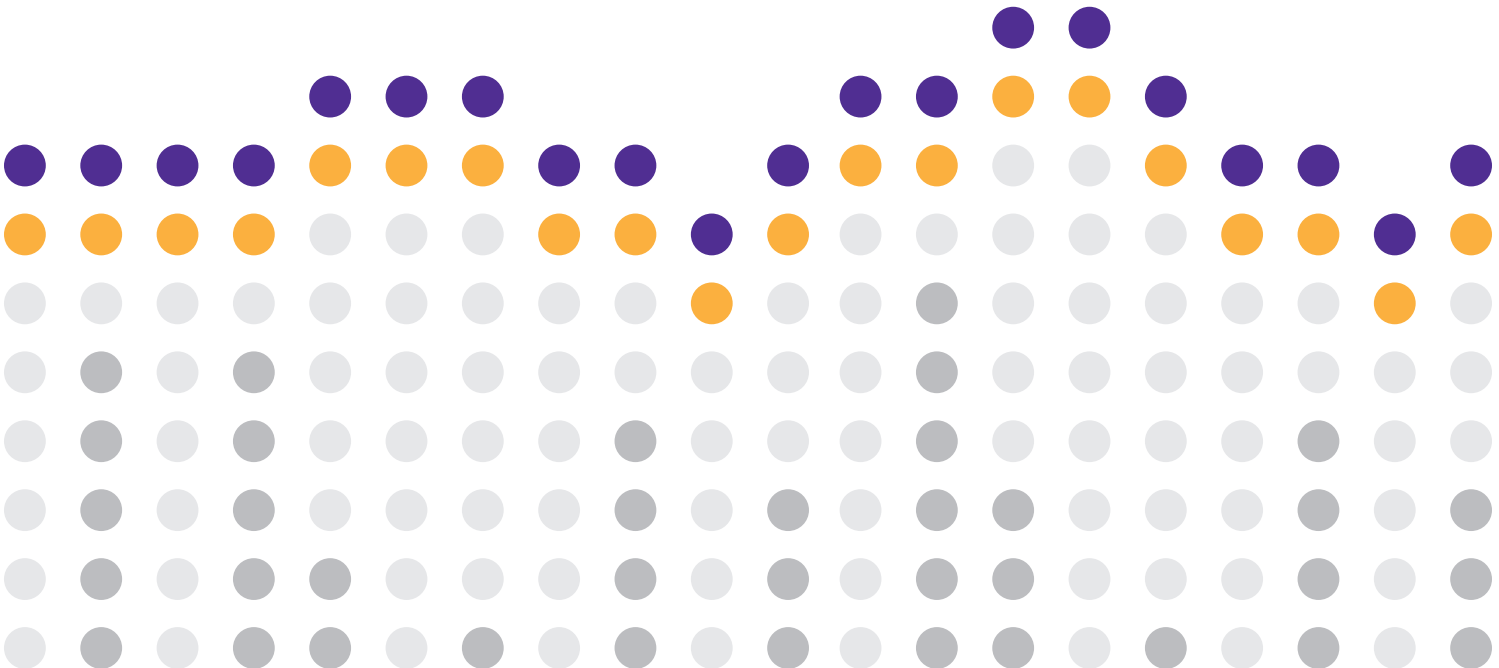
During a trip to Mexico City for the Risk Management and Trading Conference this past summer, Professors Peter Carr and David Shimko met with alumni, **Luis Aldo Rosales Oyarzabal** and **Kristen Loria** for dinner at La Unica. Kristen, who grew up in Long Island, is currently a Manager in the Infrastructure Project Finance team at Ernst and Young's Mexico City Office and has previously worked with NYC's Department of Education as a high school math teacher. Aldo, a Fulbright Scholar and former FRE Finance Club president is an Associate in McKinsey and Company's Mexico office where he has worked in banking, insurance, infrastructure, oil and gas, and private equity engagements. They both graduated in May 2014. The couple met in 2012 while attending the FRE program and wed in Morelos, Mexico last fall.





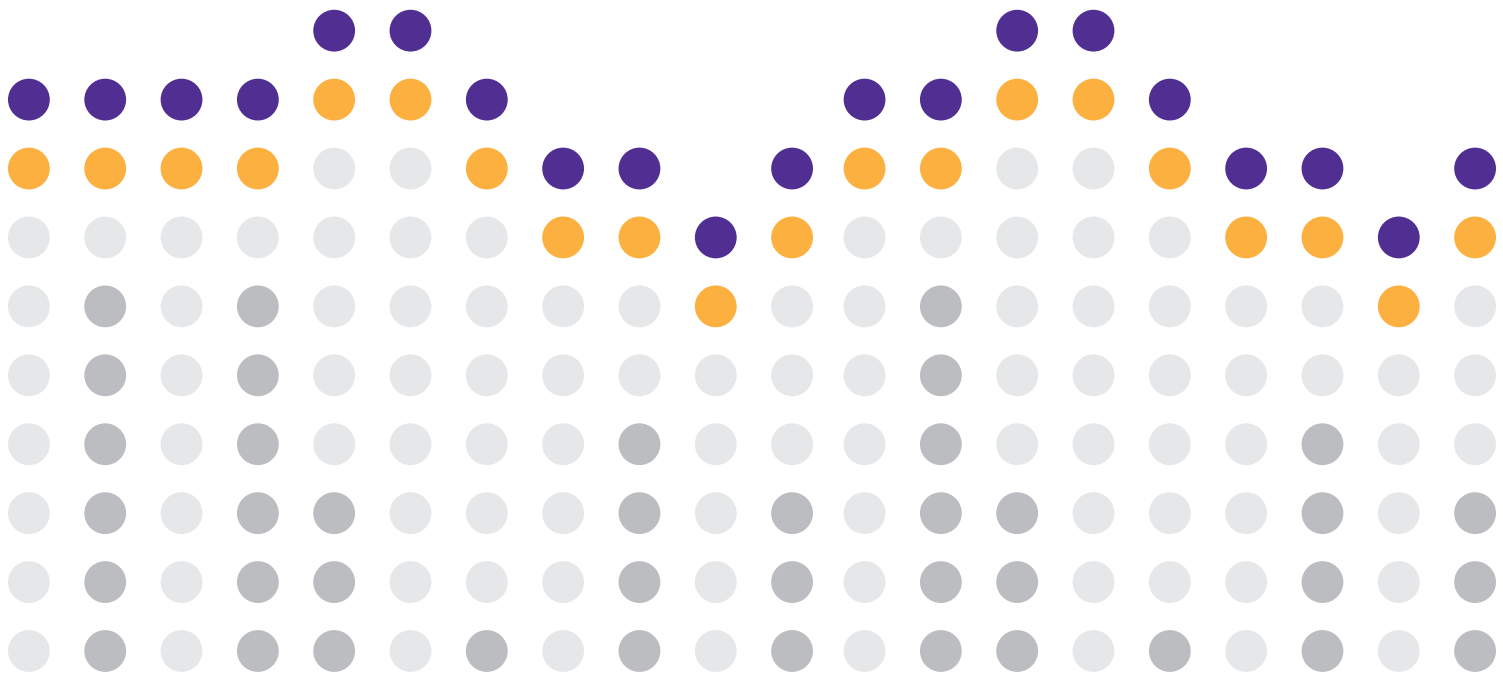
Alumni Panel and Networking Event

On Thursday, July 20th, alumni and current students gathered on campus for an insightful Alumni Panel & Networking Event. The event kicked off with an “Industry Preparation Advice” panel, which was moderated by Career Placement Director, Sara Tomeo, and featured panelists (from left to right); Tom Lee ('13), Weihua Zhu ('14), Peter Petronzio ('15), Haojie Jing ('15), and Wenjian Zhou ('16). Panelists covered a range of topics, from recommended courses and necessary networking groups, in addition to helpful reading materials. Following the panel discussion, attendees began to network over wine and cheese. The FRE Department is planning to host other networking events in the near future.

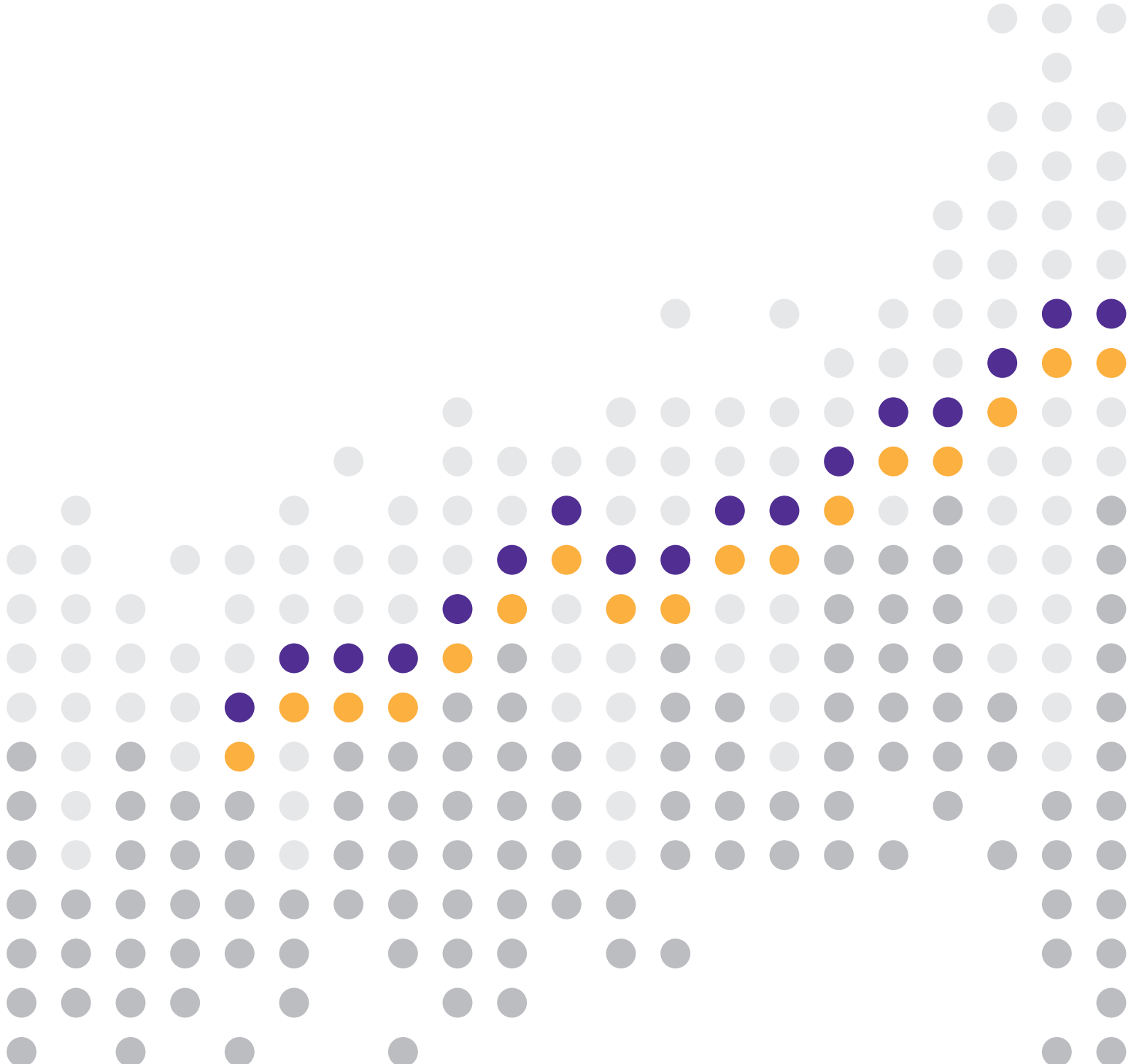


2017 Commencement and Achievement Awards Ceremony

The 2017 Commencement and Achievement Awards Ceremony was held on Friday, May 12th in the Dibner Auditorium. Professor Nassim Taleb (far right) presented awards to students with the highest academic achievement and outstanding leadership skills. This year's honorees are (from left to right): Lucas R. Amaral, Ariola Barci; Jamie Cheng, Sai A. Durvasula, Dhruvil S. Jhaveri, Sahil Kohli, Ya Qu and Wenqi Zhou. Congratulations to our well-deserving recipients.



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ABOUT Catching FIRE

Contributing Writer: Zahra Patterson and Co.
Design: NYU Tandon Marketing and Communications Office
Photo for Andrew Papanicolaou: Jamie Cheng