



CENTER FOR RESEARCH TOWARD ADVANCING FINANCIAL TECHNOLOGIES

CRAFT LAUNCH MEETING October 28-29, 2021

Thursday Virtual Meeting

[Meeting link](#)

Event number: 2621 661 2661

Event password: CRAFT2021
(27238202 from phones)

Join by phone

+1 646-992-2010 U.S. Toll (NYC)

Access code: 262 166 12661



Scan to join

Friday Virtual Meeting

[Meeting link](#)

Event number: 2622 107 1877

Event password: CRAFT2021
(27238202 from phones)

Join by phone

+1 646-992-2010 U.S. Toll (NYC)

Access code: 262 210 71877



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Introducing CRAFT



Welcome to the CRAFT Launch Meeting, which will showcase the research and partnerships that will be supported through the newly created **Center for Research toward Advancing Financial Technologies**. With funding from the National Science Foundation, the School of Business at Stevens Institute of Technology and Lally School of Management at Rensselaer Polytechnic Institute have been tasked with developing the NSF's first fintech-focused Industry/University Cooperative Research Center. The aim of CRAFT is to further our collective understanding of the implications introduced by rapid advancements in financial technologies.

About Industry/University Cooperative Research Centers

The National Science Foundation created the Industry/University Cooperative Research Center model over 40 years ago to focus research attention and build institutional support related to critical fields of science and technology. The I/UCRC is a unique forum for industry partners, who normally compete with one another, to collaborate on challenges of common interest to their industry. The I/UCRC model was designed around three primary objectives:

1. Conduct high-quality, high-impact research to meet shared needs of key industry constituencies, such as the financial services industry
2. Enhance U.S. global leadership in driving innovative technology development
3. Recruit, mentor and develop a diverse, high-tech, exceptionally skilled workforce

CRAFT's Mission

The rise of fintech exposes a critical gap between the world of traditional finance and the emerging fields of advanced technology that are now coming online, somewhat piecemeal, inside many parts of the financial system.

CRAFT's mission is to assist the industry in achieving a great coherence in fintech research and policy to bridge this gap. The I/UCRC model brings industry and academic representatives together to define a research agenda to support this overarching goal. CRAFT will facilitate richer and less conflicted collaboration to address topics of common industry-wide concern. CRAFT also will have participation from government representatives, including the major financial regulators, and can provide a forum for industry members to interact with and influence public policy and regulation in this field.

CRAFT's value comes from providing multiple solutions at once: access to talent, access to research results, and leveraged research dollars.

CRAFT Leadership



Dr. Steve Yang (Stevens), Center Director of CRAFT

Dr. Yang is an associate professor at the School of Business at Stevens Institute of Technology, where his research and teaching focuses on financial engineering. In 2020, he was a visiting academic scholar with the Securities and Exchange Commission. He first joined the faculty at Stevens in 2012 after earning his Ph.D. in Systems Engineering from the University of Virginia. Prior to that, Dr. Yang served as a research consultant for the U.S. Commodity and Futures Trading Commission.



Dr. George Calhoun (Stevens), Managing Director of CRAFT

Dr. Calhoun is the executive director of the Hanlon Financial Systems Center and the Quantitative Finance program at Stevens, where he joined the faculty in 2003. He previously spent 25 years in the high-tech segment of the wireless technology industry, involved in the early development and commercialization of digital wireless architectures. He is also the author of several books, including his most recent, *Price & Value: A Guide to Equity Market Valuation Metrics*. Dr. Calhoun earned his Ph.D. from The Wharton School.



Dr. Aparna Gupta (RPI), Co-Director of CRAFT

Dr. Gupta is a professor of Quantitative Finance at the Lally School of Management at RPI, where she has served for more than 20 years. Her teaching and research focus is on financial decision support and risk analytics and management. Her federally funded research applies mathematical modeling and financial engineering techniques for risk management in technology-enabled services, such as in communication networks and power grids. She is an author of a book, *Risk Management and Simulation*. Dr. Gupta earned her Ph.D. from Stanford University.

Program for Thursday, October 28

- 09:00 - 10:00** Registration and continental breakfast (Babbio Atrium)
- 10:00 - 10:20** Welcome and opening program
- 10:20 - 11:10** Opening remarks from leadership
- **Sean Hanlon**, Stevens Board of Trustees
 - **Nariman Farvardin**, president of Stevens Institute of Technology
 - **Jianmin Qu**, provost and vice president of academic affairs at Stevens
 - **Gregory Prastacos**, dean of the Stevens School of Business
 - **Robert Hull**, vice president of research at Rensselaer Polytechnic Institute
 - **Chanaka Edirisinghe**, dean of Lally School of Management at RPI
- 11:10 - 11:25** Coffee break
- 11:25 - 12:00** Keynote speaker: **Chris Giancarlo**, former chairman of the U.S. Commodity Futures Trading Commission
- 12:00 - 13:00** Lunch (Babbio Atrium)
- 13:00 - 14:30** Presentation from **Dr. Behrooz Shirazi**, director of the NSF's Industry-University Cooperative Research Centers program
- 14:30 - 14:45** Coffee break
- 14:45 - 15:30** Prospective universities' presentations
- Cambridge University (UK), **Prof. Andrei Kirilenko**
 - Cardiff University (UK), **Prof. Maggie Chen**
- 15:30 - 15:55** Panel discussion: Banking and payments
Moderator: **Amit Mehta**. Panelists from SWIFT, Bank of America, Wells Fargo and Financial Services Information Sharing and Analysis Center (FS-ISAC)
- 15:55 - 16:20** Panel discussion: Asset management
Moderator: **Eric Brubaker**. Panelists from Goldman Sachs, UBS, Charles Schwab and T. Rowe Price
- 16:20 - 17:00** Panel discussion: Trading and markets
Moderator: **Tommy Zovich**. Panelists from Bank of America, IEX Group and Altonomy
- 17:00 - 17:05** Closing remarks
- 17:05 - 18:30** Reception (Babbio Atrium)

Program for Friday, October 29

- 08:30 - 09:00** Registration and continental breakfast (Babbio Atrium)
- 09:00 - 09:50** Closed session: CRAFT chair and co-chair elections, by-law vote
- 09:50 - 09:55** Welcome and opening program
- 09:55 - 10:20** Panel discussion: Technology and consulting
Moderators: **Nitin Gaur** and **Amit Choudhary**. Panelists from IBM, Capgemini, Accenture, Capco and S&P Global
- 10:20 - 10:35** Coffee break
- 10:35 - 11:00** Panel discussion: Startups and regulations
Moderator: **Matt McGraw**. Panelists from the Blockchain Bureau Group, IEX Group and the Government Blockchain Association
- 11:00 - 12:00** Research presentations
- Quantum Secured Financial Data Sharing and Processing, **Yuping Huang** (Stevens)
 - Explainable Machine Learning for Credit Risk Analytics, **Brian Clark** (RPI)
 - Causal Inference for Fairness and Explainability in Financial Decisions, **Jia Xu** (Stevens)
 - Reducing Information Asymmetry in Business Processes through Blockchain and IoT, **Jianjing Lin** (RPI)
 - Data-driven Technologies for Supporting Financial Decision Making in Regions Facing Climate-change-induced Flooding, **Foad Pajouh** (Stevens)
 - Predictive Learning from Long Financial Text Documents, **Mohammed J. Zaki** (RPI)
- 12:00 - 13:00** Lunch (Babbio Atrium)
- 13:00 - 13:50** Research presentations
- Opening the Black-Box of Fraud Detection Models, **Andrea Rozario** (Stevens)
 - Risky Business? Deep Dives into DeFi, **Kristin Bennet** (RPI)
 - Towards Identifying Influence in Financial Crowd Social Behavior via Social Media, **Jose Ramirez-Marquez** (Stevens)
 - AI-Driven Early Estimates of State For Predictive Robust Portfolio Allocation, **Malik Magdon-Ismail** (RPI)
 - Fairness-Aware Explainable Recommender Systems, **Wendy Wang** (Stevens)
- 13:50 - 14:00** Conference closing

*All sessions take place in Corcoran 103 unless otherwise noted.

Additional Information on CRAFT

We hope you find the Launch Meeting a valuable entry point to the work of CRAFT. If you're interested in learning more about the Center and staying up to date on all of our research activities, you'll find a number of ways to connect with us.

CRAFT Contact Information

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Dr. Aparna Gupta	guptaa@rpi.edu
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CRAFT-Related Project Examples

Text & Knowledge Graph Mining for Asset Management

Mohammed Zaki (RPI), Aparna Gupta (RPI), R. Chandramouli (Stevens)

AI-Driven Early State Estimates for Predictive Robust Portfolio Allocation

Magdon-Ismail (RPI), Steve Yang (Stevens)

Explainable Machine Learning and Artificial Intelligence for Credit Risk Analytics

Brian Clark (RPI), Alex Gittens (RPI)

A Model-Free Quantum Simulation Framework for Volatility Derivatives Valuation

Rupak Chatterjee (Stevens), Zhenyu Cui (Stevens)

Dynamic Asset-Liability Management with Immunization and Risk Control

Darinka Dentcheva (Stevens)

Blockchain Technologies for Cooperation and Risk Reduction of Green Energy Suppliers

Koushik Kar (RPI), Aparna Gupta (RPI), Giuseppe Ateniese (Stevens)

Explainable Artificial Intelligence with Attention Networks for Credit/Loan Decisions

Steve Yang (Stevens), K.P. Subbalakshmi (Stevens)

Campus Map



STEVENS
INSTITUTE of TECHNOLOGY
THE INNOVATION UNIVERSITY®

1 Castle Point Terrace
Hoboken, NJ 07030
201-216-5000
stevens.edu



ACADEMIC BUILDINGS

- ABS Engineering Center **17**
- Babbio Center **3**
- Burchard Building **4**
- Carnegie Laboratory **5**
- Davidson Laboratory **19**
- Edwin A. Stevens Hall & DeBaun Auditorium **1**
- Gateway Academic Center
Gianforte Family Hall **7**
South Hall **6**
- Kenneth J. Altorfer Academic Complex **15**
- Kidde Hall **14**
- McLean Hall **2**
- Morton Hall **12**
- Nicoll Environmental Laboratory **18**
- North Building **24**
- Peirce Hall **13**
- Rocco Technology Center **16**
- Samuel C. Williams Library **35**

ADMINISTRATIVE BUILDINGS

- 1 Ninth Street **26**
- 2 Ninth Street **27**
- 807 Castle Point Terrace **21**
- Gatehouse **42**
- Griffith Building **43**
- Hoxie House **30**
- Ruesterholz Admissions Center **32**
- Student Center **31**
- Student Wellness Center **25**
- Wesley J. Howe Center **34**
- University Center Complex **39**

RESIDENCE HALLS

- 600 River Terrace **8**
- 602 River Terrace **9**
- 604 River Terrace (Gibb House) **10**
- 606 River Terrace **11**
- Castle Point Hall **29**
- Davis Hall **41**
- Humphreys Hall **23**
- Jonas Hall **22**
- Lore-El Center **20**
- Palmer Hall **33**
- Residential Towers
Harries Tower **37**
South Tower **38**

FRATERNITIES & SORORITIES

ATHLETIC FACILITIES

- Schaefer Athletic & Recreation Center **36**
- Tennis Office **28**
- Walker Gymnasium **40**

PARKING FACILITIES

- 8th St Lot
- Babbio Center Garage
- Castle Point Hall Lot
- Howe Center Lot
- North Lot
- River Lot
- Ruesterholz Lots

About Stevens Institute of Technology

Stevens Institute of Technology is a premier, private research university situated in Hoboken, New Jersey overlooking the Manhattan skyline. Since our founding in 1870, technological innovation has been the hallmark of Stevens' education and research.

Within the university's three schools and one college, 7,300 undergraduate and graduate students collaborate closely with faculty in an interdisciplinary, student-centric, entrepreneurial environment. Academic and research programs spanning business, computing, engineering, the arts and other disciplines actively advance the frontiers of science and leverage technology to confront our most pressing global challenges.

About Rensselaer Polytechnic Institute

Founded in 1824, Rensselaer Polytechnic Institute is America's first technological research university. Rensselaer encompasses five schools, 32 research centers, more than 145 academic programs, and a dynamic community made up of more than 7,600 students and more than 100,000 living alumni. Rensselaer faculty and alumni include more than 145 National Academy members, six members of the National Inventors Hall of Fame, six National Medal of Technology winners, five National Medal of Science winners, and a Nobel Prize winner in Physics. With nearly 200 years of experience advancing scientific and technological knowledge, Rensselaer remains focused on addressing global challenges with a spirit of ingenuity and collaboration.

