

February Meeting: Digital Twin for AM

NJ SAMPE welcomes members and friends to our first monthly meeting of the New Year, to be held at Rowan University, Glassboro, NJ on Thursday, February 13 at 5:30 pm.

Dr. Paromita Nath, Assistant Professor in the Mechanical Engineering Department at Rowan University, will present on the topic of “Digital Twin for Additive Manufacturing: Needs, Opportunities, and Challenges.”

Digital twin technology for additive manufacturing (AM) offers transformative potential by enabling real-time monitoring, process optimization, and predictive maintenance and control. By integrating high-fidelity simulations, machine learning models, and sensor data, digital twins improve product quality and process efficiency.

This presentation explores the key needs for digital twins, including their role in quality assurance and sustainability. It also highlights opportunities such as accelerated product development and certification for critical applications. However, challenges such as computational demands and cybersecurity risks must be addressed. Dr. Nath will examine digital twin technology in AM, emphasizing its potential to revolutionize the field while addressing the hurdles that need resolution to drive innovation.



Dr. Paromita Nath completed her Ph.D. in Civil Engineering at Vanderbilt University. Her research focuses on uncertainty quantification, Bayesian inference, process design and control under uncertainty, and machine learning, with diverse applications in additive manufacturing, public health, and power systems.

Featured NJ SAMPE Past Chair Russell Caspe

Russell Caspe is the immediate past Chair of NJ SAMPE, serving from 2019 - 2022. Throughout his tenure, Russ played an instrumental role in the development and success of the Chapter's initiatives. Under his leadership, NJ SAMPE launched its first-ever Additive Manufacturing Symposium, an event that evolved into an annual gathering for students, academia, and industry professionals to share knowledge, explore cutting-edge technologies, and discuss trends shaping the future of additive manufacturing.

Additionally, Russ guided the organization through the challenges posed by the COVID-19 pandemic, ensuring that NJ SAMPE adapted and embraced virtual events, and continued to support its membership and the regional materials science community.

A New Jersey native from Bergen County, Russ has always had a strong connection to the region, and his academic journey reflects his deep commitment to materials science and engineering. He earned his BS degree in Ceramic Engineering from Rutgers University in 2003, then pursued a PhD in Materials Science at the University of Washington in Seattle. He completed his doctoral studies in 2010, and his dissertation, “Through Thickness Melding of Advanced CFRP (Carbon Fiber Reinforced Polymer)”, addressed the practical chemistry and kinetics of epoxy curing, significant to applications in industries such as aerospace and automotive.

After completing his PhD, Russ returned to the Seattle area to begin his professional career. He joined B/E Aerospace (which later became part of Collins Aerospace) on their aircraft interiors team.



Russell Caspe, immediate past Chair of NJ SAMPE, hiking in Le Parc National du Mont Orford, Quebec.

Russ worked on a variety of projects, one of the most notable being the design of composite sandwich panels for the Spacewall Lavatory systems. These panels are now featured on the Boeing 737 Max, a widely recognized commercial aircraft. In addition to his work on composites, he developed a materials and processing control system that helped to optimize production and ensure product quality.

In 2013, Russ relocated to the Scranton, PA area to join Gentex Corporation as a Staff Materials Scientist. At Gentex, he's focused on developing new technologies for ballistic, impact, and blast protection in defense, aerospace, and security applications. Russ' expertise also extends to respiratory, hearing, and eye protection, all aimed at improving the safety and performance of personnel in hazardous environments.

Russ is a passionate advocate for advancing the materials and manufacturing industries. Through his involvement with NJ SAMPE, he helped shape the growth and future direction of the Chapter, named a Center of Excellence for Additive Manufacturing in 2018.

The February meeting at Rowan will include networking, dinner, and the presentation. Professionals can register in advance at njsampe.org by clicking [here](#).

As always, students are welcome to attend the meeting at no cost, though an RSVP to megan@njsampe.org is required.

The presentation will also be streamed live via Webex. [Virtual Meeting Link](#)
Meeting: 2862 662 3349
Password: SAMPENJ



SAMPE Opportunities

Awards, scholarships, and volunteer roles.
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Upcoming Events

Preview our calendar of events for the remainder of the 2025 season. Page 2

Sponsor of the Month

Bally Ribbon Mills
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SAMPE Awards Nominations

SAMPE North America strives to celebrate the excellence of its members and the positive impact they make on this industry and within their communities.

The deadline for all awards nominations is February 15.

Global Awards:

- [Akio Shindo Memorial](#)
- [Fellow](#)
- [George Lubin Memorial](#)
- [Mort Kushner Lifetime Achievement](#)

North America Awards:

- [Chapter of the Year](#)
- [Delmonte Award for Innovation Excellence](#)
- [Diversity, Equity, and Inclusion](#)
- [Distinguished Service](#)
- [Organizational Excellence](#)
- [Student Chapter of the Year](#) NEW!
- [Young Professionals Emerging Leadership](#)

If you are interested in nominating yourself, or know of a colleague, company, or institution that would qualify, submit your nomination today.

NJ SAMPE Scholarship Program Now Accepting Applications

NJ SAMPE offers a scholarship to support students pursuing higher education in the fields of science, technology, engineering, or mathematics (STEM).

Applicants must either be members of one of our 3 local student chapters or relatives of NJ SAMPE Chapter members having a minimum of one year of membership with the Chapter as of the application deadline. An eligible Chapter member may also serve as sponsor for a deserving candidate's application (ex: neighbor, intern, etc.).

Submit applications to joe@njsampe.org no later than March 15.

Winners will be notified before our April Student Night meeting, where the scholarship awards will be presented.

Scholarships are offered annually for full-time study at an accredited university or vocational school of the student's choice. The Program is administered by the NJ SAMPE Board of Directors, and all awards are granted without prejudice.

For complete information on eligibility, the application and awarding process, please visit our [website](#).

Call for Committee Volunteers

Interested in developing your leadership skills while also expanding your SAMPE network beyond the local region?

SAMPE North America (NA) is seeking volunteers for their Standing and Ad-hoc Committees. These groups support and execute programs that benefit both professionals and students, including:

- Awards
- Community Engagement
- Student Contests
- Technical Excellence
- Young Professional Activities

A full list of SAMPE NA Committees, including descriptions, leadership contact information, and typical volunteer time commitment, can be found [here](#).

Submit an [application form](#) by January 31.



NJ SAMPE Seeks Media Chair

NJ SAMPE's Board of Directors has an immediate need for a Media Chair.

This role manages all marketing and communications duties for the Chapter.

Are you passionate about building and maintaining websites, developing content for and posting to social media, composing monthly newsletters, or managing e-mail blasts?

If you would like to volunteer your time to support one of [SAMPE's](#) most thriving regional Chapters, then [contact us today](#). Experience with composite materials helpful but not required.

Chapter Officer Nominations Open Soon

Have you made a resolution to become more engaged in the materials & process engineering community in 2025?

SAMPE election season is nearly upon us, and the NJ SAMPE Board of Directors is looking to expand its ranks to better serve our members. If you'd like to learn more about any of the officer roles listed on Page 3, contact melissa@njsampe.org.

Calendar

NJ SAMPE Events

February 13, 5:30 PM

Presentation by Paromita Nath, Ph.D.
Rowan University, Glassboro, NJ
Engineering Hall Room 321
[Register](#) | [Virtual Meeting Link](#)
Meeting number: 2862 662 3349
Password: SAMPENJ

March 6, 5:30 PM

"Lignin: Chemistry and Sustainability"
Presented by Louis Pilato, FSAMPE
Evonik, Piscataway, NJ

April 3

Student Night

SAMPE Webinars

March 19, 10 AM PST (1 PM EST)

"Advanced Automated Fiber Placement Strategies for Thermoplastics"
Presented by Waruna Seneviratne,
Director - ATLAS, NIAR
[Learn More](#)

April 16, 10 AM PST (1 PM EST)

"Life Cycle Analysis of Carbon Fibres"
Presented by Ignaas Verpoest,
Prof. Emeritus, U Leuven, Belgium
[Learn More](#)

SAMPE 2025

May 19 - 22

Indianapolis, IN

Early Bird Registration ends March 31

Free SAMPE Student Memberships Available

NJ SAMPE is pleased to offer free Student Memberships to support university students who desire to get more involved in SAMPE programs.

Students are encouraged to contact joe@njsampe.org for details.

This opportunity was made possible by our generous Chapter Sponsors. The Board is especially grateful to [Kaneka North America](#), who donated additional funds for this purpose.



April Student Night Preparations Underway

Each April, NJ SAMPE features local students during a Student Night meeting. Speakers either present their research or highlight their Student Chapter projects.

Those interested in participating in this long-time tradition are invited to reach out to joe@njsampe.org.

Sponsor of the Month: Bally Ribbon Mills



Since 1923, Bally Ribbon Mills (BRM) has been involved in the design, development, and manufacture of highly specialized engineered woven webbing, tapes, and specialty fabrics. These products are designed for aerospace, defense, medical, safety, automotive, commercial, and industrial applications. Since 1991, Bally’s engineering team has increased their efforts to meet the growing demand in the composites industry with woven preforms and 2-D and 3-D structural fabrics.

BRM’s success can be attributed to three key elements. First, the ingenuity and the technical know-how of the company’s design engineers and master weavers is of paramount importance.

They offer over seventy years of hands-on experience in textile manufacturing, including equipment design and modification, fabric design, and weaving. BRM design engineers helped to pioneer 3-D weaving technology. Second, is BRM’s broad weaving capabilities. Their woven 2-D and 3-D structures, near-net shape performs, tapes, webbing, and other specialty woven products can be woven from virtually any yarn. Yarns used in the weaving process include nylon, polyester, aramid, graphite, glass, quartz, ceramic, and silicon carbide. Third, BRM’s reputation for meeting new advanced design challenges keeps them ahead of the field in developing and improving technology.

Because engineered materials require critical quality assurance, BRM utilizes SPC, SIS, and Lean Manufacturing principles for continuous improvement of our production processes and quality system. Bally Ribbon Mills is registered to ISO 9001:2015, AS 9100D, and ISO 13485:2016. Bally’s quality team is currently working on the ISO 14000 certification program.

A rich history, and constant research and technological advancement, position Bally Ribbon Mills as an industry leader in the manufacture of specialty textiles.

For more information, contact:

Amir Islam, amirislam@ballyribbon.com

Thank You to Our 2024 - 2025 Corporate Sponsors



We are the New Jersey Chapter of SAMPE

Chartered in 1977, NJ SAMPE is one of the oldest Chapters in the SAMPE network. We serve the greater NJ/NY/CT/PA area by focusing on our membership, as well as student and young professional outreach. NJ SAMPE includes ten SAMPE Fellows, thirteen Senior Honorary Members, one SAMPE George Lubin Award Winner, and one SAMPE Young Professionals Emerging Leadership Award Winner. NJ SAMPE was designated as SAMPE's first Center of Excellence for Additive Manufacturing in 2018.

We welcome you to participate and network, either for business opportunities, recruitment, or keeping up with industry trends in the region. As the only technical society encompassing all fields of endeavor in materials and processes, SAMPE provides a valuable forum for scientists, engineers and academics. We especially invite students and young professionals to engage in dialog with industry members, explore career options, make presentations at monthly meetings, and join our local student chapters.

- Benjamin M. Rasmussen Chair
- Vice-Chair
- Treasurer
- Secretary
- Director/Membership Programs
- Student Chapter Liaison
- Media & Communications
- Young Professional Representatives
- Advisors-at-Large

- [Melissa Jaime](#), Aurorium
- [Joe Abrantes](#), Evonik
- [Megan Casey](#), TotalEnergies Cray Valley
- [Raj Sundar](#), AGC Chemicals Americas
- [Amir Islam](#), Bally Ribbon Mills
- [Behrad Koohbor](#), Rowan University
- [Joe Abrantes](#), Evonik
- Open
- [Jaclyn McLaughlin](#), Rowan University & [Joe Geiger](#), Bally Ribbon Mills
- [Howard Kliger](#), Retired & [Borys Schafran](#), Schafran Associates