

Panel

Models for Advancing Green Chemistry Innovation: Collaborative Innovation, Open Innovation, Incubators, and Accelerators

Presentation: [Click here to download slides](#)

Moderator:

Monica Becker, Director of Collaborative Innovation, GC3

Presenters:

Han Bevinkatti, Global R&D, Nouryon

Greg Stillman, Venture Investor, Plug and Play - Fashion for Good

Frank Tropper, Senior Director, NineSigma Inc.

Summary:

Three presenters each shared their respective models for advancing green chemistry innovation and commercialization.

Greg Stillman, Venture Investor with Plug and Play – Fashion for Good, presented collaborative innovation models to tackle fashion’s biggest challenges. The organization is focused on circular solutions where the end-of-use garment would be collected and reworked into fiber for use in another garment. He shared their three-step approach:

- **Accelerate** – Brand partners help to define a set of industry needs. Plug and Play then seeks entrepreneurs to identify solutions for those needs by driving one on one interaction to accelerate development.
- **Scale** – The pilot project identified in the accelerate phase is then scaled up from one to multiple partners. In this phase, the value proposition is better defined, and the investment is subsequently de-risked as a result of this demonstration of scalability.
- **Mainstream** – The Good Fashion Fund is a debt-financing fund designed to finance supply chain investments in circular apparel. Deal Flow, a structured approach to introducing financing between startups and brands/partners, is the heart of the Good Fashion Fund. GC3 members including Checkerspot, Nature Coatings, and Colorifix have benefitted from this program.

Frank Tropper, Senior Director, NineSigma Inc., provided an overview of NineSigma, focusing on the company’s leadership in managing complex prize-based challenges. Utilizing their role in the Ellen MacArthur Foundation’s Circular Materials Challenge as an example, Dr. Tropper explained the process as well as keys to success of prize-based competitions to drive sustainable innovations.

- **Process** – After defining the challenge problem statement, there is an open period with outreach efforts to the network of NineSigma scientists as well as open webinars. Following the submission deadline, 63 qualified responses were received from 23 countries. The top 30 were reviewed, thirteen of which were given a more thorough due diligence review with five ultimately selected as winners of the prize money as well as incubation expertise from the Ellen MacArthur Foundation and the sponsors.
- Keys to success for prize-based competitions:

- Think big, be bold, do good.
- Committed partners and stakeholders across the value chain aligned with a common goal.
- Define a problem with a specific target with semi-bounded solution criteria.
- Provide opportunity to an engaged solution-provider community. It is not enough to offer a prize; the solution-providers need to be engaged.
- Look for more than ideas; Look for partners with expertise.

Han Bevinkatti, Global R&D, with Nouryon presented on their Imagine Chemistry Challenge which has generated ~500 ideas to date to solve real-life business challenges with an emphasis on green and sustainable chemistry. Now concluding the third edition of the Imagine Chemistry Challenge, some key learning includes:

- Challenge topics change every year to meet the company's technology needs.
- Submissions can range from proof of principle through to full product.
- Intellectual property stays with the startup.
- Combining startups with the legal, business, R&D, and EHS capabilities of Nouryon is a good combination.
- The unique approach crunches years of work into three days during the final round with 700+ experts evaluating business impact in a collaborative approach.
- Feedback from the experts has proved to be helpful even if the startup is not selected as a winner.

Winners receive a variety of support ranging from joint development agreements, business support, research agreements, sourcing agreements, etc., depending on the opportunity.

Key Takeaways:

- Committed external partners with a shared goal are essential for success of collaborative innovation models.
- Clearly defined problem statements are beneficial for all parties including the solution-providers as well as the partners.
- Access and outreach to solution-providers across the globe from the earliest stage of innovation to advanced product development helps increase likelihood of success.
- Clear intellectual property strategy for the collaboration/competition helps solution-providers understand how their innovation will be protected.
- De-risking through demonstration of value proposition, scalability, expert analysis, etc. helps all players advance green chemistry innovation to market.