

AVS Recognition for Excellence in Mentorship: Dr. Mark D. Losego

AVS seeks to recognize individuals who have gone above and beyond their regular job duties by leading programs that have a broad impact in training and mentoring, and promoting diversity, belonging, equity, inclusion, and accessibility. In 2022, [Dr. Mark Losego](#) of Georgia Tech received the [AVS Recognition for Excellence in Mentorship](#) for just such work. He has shown great dedication to mentoring and developing budding young scientists and engineers to their fullest potential.



Motto: Do or do not. There is no try. ~Yoda

Mark works as an Associate Professor of Materials

Science and Engineering at Georgia Tech. Like most faculty, Mark teaches courses, directs research, mentors students, and provides service to the campus and the greater scientific community.

Mark is also the Faculty Founder and Director of Georgia Tech's Materials Innovation and Learning Laboratory, [The MILL](#). This is the world's "first open-access make-and-measure space devoted entirely to materials science and engineering." According to Mark it opened in 2017, and the space is now operated by a staff of about 50 undergraduate student volunteers and provides peer-to-peer training and free access to students in over \$1M in analytical equipment common to the discipline, including SEMs, TGA, XRD, FTIR, mechanical testing, and contact angle analysis. Mark also explained that The MILL is just one facility amongst a group of student-run maker-spaces located across campus that together make Georgia Tech a global leader in experiential education. "I continue to be excited by the students' excitement as they get the opportunity to have real responsibility in gaining hands-on technical expertise in the discipline as well as leadership, management, and communication skills while managing and operating the facility." Since joining the faculty at Georgia Tech 8 years ago, Mark has mentored 14 graduate students (6 women, 2 underrepresented minorities), 3 postdoctoral scholars (1 woman), 2 international student visitors, and over 40 undergraduate researchers (completely independent of the student staff at The MILL).

When asked if he had a mentor himself, Mark reminisced that he has always had strong support and encouragement from his parents and family, including his wife who specifically also has experience in the scientific and academic communities. In his career, he has also had a "number of great research mentors that I've had the good fortune to work with, and I have carefully observed and learned from them different best-practices as I established my own research team including being intentionally inclusive, working hard, and having a savviness in choosing where to put your efforts." Along with mentors, Mark has worked hard to establish a strong sense of professional community. When asked

where AVS fit in to his professional community he explained that “AVS’s focus on the processing of materials, interfaces, and surfaces perfectly aligned with the type of research I wanted to do in my lab. AVS is also a very welcoming and collaborative community, and the students that I now mentor in my group find the AVS Annual Meeting extremely valuable because so many of the sessions are so applicable to the science that we do.”

In his research, Mark is best known for his work in vapor phase infiltration (VPI) processing. He described his research as follows:

VPI exposes organic polymers to inorganic-containing vapor molecules that sorb into and become entrapped within the polymer, converting the polymer into an organic-inorganic hybrid material. These hybrid materials are interesting for use as membranes for chemical separations, plasma etch resists for microelectronics processing, and conductive interphases for flexible electronics amongst other applications.

He remains “fascinated by the complexity of the VPI process itself – the complex inter-relationships between precursor sorption, diffusion, and reaction – and the complexity of the resultant organic-inorganic hybrid materials, which is unlike any other material familiar to me.”

The big career step that Mark is working towards is getting promoted to Full Professor. More generally though, he wants to broaden the impact he has on training students in both research and the classroom. “It’s about building more collaborative research teams from more disparate research areas, developing more effective methods for peer-to-peer training, and leveraging technological tools to broaden access and engagement in STEM-based educational content.” For his sustained commitments and contributions to student education and mentoring, Mark was also recently appointed as the Dean’s Education Innovation Professor in the College of Engineering at Georgia Tech.

When Mark is not hard at work, he stays quite busy with his family. He greatly enjoys spending time with his wife and 8-year-old twins and working in their vegetable and flower gardens. He also used to avidly collect and read comic books (mostly Marvel), “but then I had twins and started a tenure-track faculty position (almost simultaneously); so, that collection has unfortunately stayed stagnant for the past 8 years...although the kids have now started reading some comic books, so we will see if that hobby can be revived.” Every morning, he sees the kids off to school and then heads in to work. After some long days, he eventually makes his way home to spend more time with the family (maybe coach their soccer team), probably watch some television with his wife (unless he has more work to do), and then goes to bed. Luckily for AVS, he also stays involved with the Society, working around all he does with his work and his family.

Please join the AVS community in congratulating him on his well-deserved AVS 2022 Recognition for Excellence in Mentorship.