

Our Sixth IMS Microwave Week 3MT Competition: Back on Stage

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Most of us surely entered engineering because of our love for science and our belief that if we mastered its principles and rigorously applied its rules that describe how the world works, we could contribute to building a better future for humankind. Nevertheless, our generally introverted and geeky natures often lead us to overlook a crucial and necessary component to enacting change: we cannot do it alone, nor should we want to.

In 1865, a monk of St. Thomas's Abbey in Brno, now the Czech Republic, presented his paper "*Versuche über Pflanzenhybriden*" ("Experiments on Plant Hybridization")—the product of seven painstaking years of rigorous experimentation involving 28,000 plants—at two local meetings of the Natural History Society [1]. His work was politely received but largely ignored until 1900, 15 years after his death. We now recognize this monk, Gregor Mendel, as the founder of modern genetics.

It isn't that Mendel's work was of poor scientific quality. It was rigorous and thorough. It wasn't that it lacked novelty. It was revolutionary. Neither was it that Mendel himself had failed to realize the importance of his work. He believed he would leave a mark on history. Mendel failed at communicating the significance of his work to his peers and at enticing them to pour their energies into this newly founded branch of science. Deprived of life-giving sap, this branch withered and died.

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The cautionary tale of Mendel's lifelong lack of recognition is but one example of how failure to convince fellow researchers can spell doom for scientific endeavors. Furthermore, lacking the ability to impress the value of one's work upon the broader public and upon potential patrons and funders can be equally ruinous, as Robert Goddard, the father of space-flight, learned at his expense.

In a world of ever-flourishing scientific publishing [2] and increasingly ubiquitous and accessible connectivity, it has never been so vital to develop our mass communication skills as researchers and as a community.

What Is 3MT?

Created at the University of Queensland, Australia, in 2008, the Three Minute Thesis (3MT) competition [3] motivates contestants to develop and hone their presentation skills and trains them in the art of stimulating the imagination, kindling the interest, and enlisting the support of individuals from all walks of life. In 3 min or less, using only one static slide and no other props, contestants deliver their presentations to a panel of nonspecialist judges, who rank them on how engaging, accessible, and compelling they make their presentations [4]. A speaker who goes overtime is disqualified.

Goals of the 2022 Microwave Week 3MT Competition

After two very successful years of virtual 3MT competitions combining the three colocated IEEE Microwave Theory and Techniques Society (MTT-S) International Microwave Symposium (IMS), RF Integrated Circuits Symposium, and Automatic Radio Frequency Techniques Group Conference, 3MT is back in person for its sixth year [5]. Our aims for the event continue to be the creation of a shining beacon—attracting the attention of the broader public to the flagship conferences of our community—through the production and mass broadcasting of high-quality, accessible, and enticing talks display-

ing some of the most impactful results achieved by the MTT community, presented by its brightest and most passionate and articulate young members.

We believe that achieving these goals will make a significant contribution toward popularizing our discipline, attracting a broad and diverse group of new members and advocates [6], and propelling the careers of our rising stars. Previous examples of such products can be found in the MTT-S IMS YouTube playlists [7]–[11].

The 2022 Microwave Week 3MT Competition

The 3MT Competition Committee chooses finalists from among those who identified their desire to enter the competition upon submitting their papers [12], [13]. A contestant must be a current student or within 15 years of his or her first professional degree. Finalists may speak only once, with no substitutions, and only one 3MT presentation per accepted paper is allowed.

In the weeks leading up to Microwave Week, finalists work with the competition organizers, attending online meetings, receiving tips and feedback on their drafts, and practicing. This hard work will culminate in a 3MT presentation to be delivered in

Denver, possibly earning a spot in the top three (and a cash prize that comes with those honors), leaving the presenter with a battery of techniques and strategies for improving the communication of technical work—skills that are useful across disciplines and career paths.

An equally important benefit of the competition is promotional. The accessible, engaging nature of these talks is perfect for making the general public curious about innovations and breakthroughs in microwaves and high-frequency electromagnetics. Showcasing the human element of our Society on MTT-S social media channels using videotaped award-winning 3MT presentations by passionate and articulate younger members [7]–[11] should help attract high school students, undergraduates, and women to our profession.

To this end, this year's Microwave Week in Denver warmly welcomes all symposium attendees and guests to attend the precompetition presentation skills workshop, the briefing and coaching sessions, and the competition itself [5]. Our references [3]–[29] include helpful articles [6], [17], and [18], workshops [19]–[24], and MTT-S webinars [25]–[29]. Check out some of



Figure 1. Photo of Aline Eid on stage during her Microwave Week 2019 3MT presentation [31]. (Credit: John Bandler.)

the 3MT presentations [14]–[16] and the 3MT presentation videos on our Society’s YouTube channel [7]–[11]. As you watch the 2017–2019 videos [7]–[9], be aware that you are watching recordings of the live presentations on which the judges based their rankings, whereas the videos in the 2020 and 2021 playlists [10], [11] are the presentations actually seen by the judges, who were watching online along with the audience. Recognizing that, in the latter case, the video format is the same as the one on which the judges based their rankings can make a difference in your personal assessment.

The Prizes

Winners will be selected by the panel of nonspecialist judges, while the audience will select their own Audience Choice winner. Awards will be presented during the closing session of IMS2022, with cash prizes to be awarded to the top three ranked contestants and to the Audience Choice winner.

A Success Story

Aline Eid submitted her paper [30] on the IMS website in early December

2018. While doing so, she elected to enter the 3MT competition. Why not? It looked like fun! Little did she know about the sequence of events that this would trigger.

During the next few months, coached by John Bandler and Erin Kiley, Aline would painstakingly craft her story and that of her mascot, Lucy [31]. Lifted by her sharply honed communication skills, she went on to win four awards at the symposium, including the 3MT’s second place and Audience Choice. Figures 1 and 2 show a photo of Aline taken during her Microwave Week 2019 3MT presentation along with a photo of her slide featuring Lucy, the tarantula.

Taking advantage of this momentum, Aline published an extension to her IMS work [32] along with a carefully designed press release. These led to an explosion of interest in her work and numerous interviews, with her paper [32] being read more than 110,000 times and featured by more than 40 domestic and international news outlets. Aline is now cochair of the IMS’s 3MT Committee and one of the authors of this column. Hi, everyone!

Conclusion

Our Microwave Week 3MT competition is not a mere rhetorical joust. It forces you, the contestant, to exercise muscles that would otherwise remain dormant and unknown and to open unexplored dimensions into which your research and career can grow. In short, 3MT is career altering and more. Imagine human history if Mendel had mastered this art.

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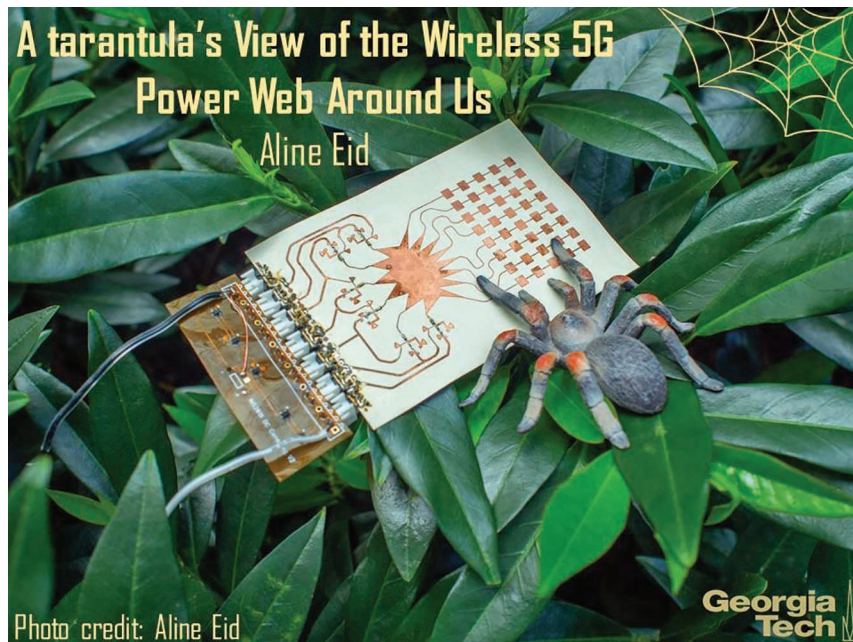


Figure 2. Aline Eid’s slide from her IMS2019 Microwave Week 3MT presentation [31]. Aline introduces Lucy, the tarantula, to describe her system and its impact on the environment.

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