

Brevity, Clarity, Engagement: The IMS2017 Three Minute Thesis Competition

John W. Bandler and Erin M. Kiley

How often at an IEEE Microwave Theory and Techniques Society (MTT-S) International Microwave Symposium (IMS) have you been bothered by a technical presentation lacking detail? Perhaps the speaker used words that were too few or too simple or spread out too little text, too few equations, too few tables of sparse data, all on too few slides. Or perhaps the presentation undershot the time limit?



fill their entire allotted time and space—as well as the slides flashed in front of you—presumably lest their audience feel as though it weren't getting enough content for its effort and attention.

A new initiative at IMS2017 seeks to buck this tradition, instead rewarding presenters for brevity, clarity, and, above all, understandability, engagement, and capturing an audience's imagination.

Welcome to the first-ever IMS2017 Three Minute Thesis (3MT) Competition [1].

3MT History

Developed by the University of Queensland, Australia, in 2008, the 3MT Competition [2] challenges contestants to improve their communication and delivery skills, showcasing the creativity, theatricality, and control of narrative that the most skilled presenters draw upon in giving brief, clear, and understandable research talks.



More to the point, how often have you endured the opposite kind of presentation? The practice among presenters at typical technical meetings is to completely

John W. Bandler and Erin M. Kiley (ims2017.3mt@gmail.com) are members of the IMS2017 3MT Committee. Bandler is with McMaster University and Bandler Corporation, Hamilton, Ontario, Canada. Kiley is with the Massachusetts College of Liberal Arts, North Adams, Massachusetts, United States.

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In three minutes or fewer, using only one static slide and no other props, contestants deliver their prepared presentations to a panel of nonspecialist judges. These judges rank the contestants based on how engaging, accessible, and compelling they made their presentations. A contestant who goes over the allotted time is disqualified.

Now, 3MT competitions are held at more than 350 universities across more than 18 countries.

The New IMS2017 3MT Competition

New for 2017, IMS is offering a 3MT competition [1]. It provides an avenue for students and young professionals (YPs) to improve their communication and presentation skills. An equally important goal is to increase the visibility of research in microwaves and high-frequency electromagnetics, to give to the general public—which we assume has no technical knowledge of our field—the opportunity to be surprised and engaged by our breakthroughs, to become curious about our innovations and developments.

Such engagement should stimulate public interest in microwaves as a transformative technology that is rewarding both to those who study it and those whose daily lives benefit from incorporation of the latest developments in consumer products. Showcasing the human element of our Society on the IMS YouTube channel through a suite of award-winning three-minute presentations by passionate and articulate younger members of the MTT-S should help attract high school students, undergraduates, and women to our profession.

To this end, IMS2017 warmly welcomes all symposium attendees and guests to attend both the briefing session and the competition.

The World of 3MT Presentations

Many outstanding recent presentations covering several disciplines, including engineering, can be found on the 3MT

showcase page of the University of Queensland [3]. Chernick [4] focuses on Alzheimer's disease, Won [5] speaks about vision problems, and Chen [6] discusses his work on robotic surgical assistance. Another fine collection of videos with the finalists in the 2016 Canadian National 3MT Competition is available online [7].

As you watch each of these presentations, you should be aware of a number of points. For example, you are watching a video and not a live presentation. As a viewer (rather than a member of the live audience), you will be influenced by many things, including the creative choices made by the videographer and video editor and whether the speaker's single static slide is at all visible to you and for how long. On the other hand, the live audience, including the judges, would have been influenced by any impressions of the contestant before the start of his or her presentation, how the contestant approached the podium, how he or she was introduced by the host, any audible and visible reactions by the live audience (which you will be unlikely to see or hear) during the presentation, and how the contestant performed relative to the other contestants. In addition, 3MT speeches are typically memorized, which may influence perceived authenticity. All these factors would have played a role in the judges' final rankings.

Factors Affecting Live Presentations

In a previous column [8], we addressed live presentation do's and don'ts in general as well as 3MT issues in particular. One of us (John Bandler) recently covered a wide variety of issues related to presentations [9], including a Q&A session with Ana Kovacevic, a 3MT winner whom he had mentored.

This talk [9], featuring diverse examples and case studies, touches on aspects of story, persuasion, bias, trust, impact, fear, first impressions, citation, subtext, metaphor, theatricality, authenticity, articu-

lation, etiquette, awareness, being remembered, slide composition, theme, respecting your audience, the "elevator" pitch, ethics, admitting setbacks, and more.

For 3MT, delivering an overview and avoiding jargon, conveying enthusiasm and a commitment to the "long haul," and demonstrating empathy through human stories are highly desirable. It can be a challenge to present extremely complex, technical material in fewer than three minutes and in a way that successfully kindles surprise and curiosity in the audience. This challenge is neatly summarized by the quote, "If I am to speak ten minutes, I need a week for preparation; if an hour, I am ready now" (variants of which have been attributed to several different historical figures) [10].

The Career Benefits of the IMS2017 3MT

Developing the skills to distill technical research information into a form accessible to the nonspecialist has become popular worldwide for students within universities that have adopted the 3MT competition. Having mastered such skills (namely, clarity of communication without oversimplifying or resorting to jargon and the ability to engage a diverse audience with authenticity and enthusiasm), any participant should be able to transfer them to virtually any professional career path, where they become lifetime assets for career advancement.

Of course, there are risks in venturing beyond one's comfort zone, daring to swim against the presentation mainstream. See John Bandler's video on creativity and success [11].

The Prizes

The top winners, selected by the panel of nonspecialist judges, together with a People's Choice winner will be announced and awards will be presented during IMS2017. It is planned that cash prizes be awarded to the top three ranked contestants and to the People's Choice winner.



IMS2017 3MT Competition Procedure

The contestants selected for the IMS2017 3MT Competition were chosen from among those who identified their desire to enter the competition when submitting their paper [12]. A contestant must be a student or YP; YPs are defined by the IEEE as post-student Members within 15 years of their first professional degree.

As for all other IMS2017 paper submissions, 3MT submissions were reviewed by the Technical Program Review Committee (TPRC). Only papers selected by the TPRC for either an oral or interactive forum presentation, had been self-identified as 3MT submissions by the author(s), and meet the 3MT criteria were eligible to participate in the 3MT Competition.

Contestants were selected and recommended by the IMS2017 3MT Competition committee from the eligible 3MT submissions. Accepted contestants may speak only once, with no substitutions, and only one 3MT presentation per accepted paper is allowed.

Contestants will make their presentations to symposium attendees, invited guests, and a panel of five nonspecialist judges. The judges will rank the contestants in accordance with the 3MT rules [12]; their decision is final.

The equipment available will be the same as for any technical session, with the addition of a videographer who will record each three-minute presentation for upload to the IMS YouTube channel, accessible as soon as possible to registered attendees of IMS2017.

The competition is scheduled for Monday, 5 June 2017, in one of the technical session venues.

Judging Criteria

Under "Comprehension & Content" [13], judging criteria include the appro-

priate communication of the topic and its significance; the clarity and logic of the presentation; the clarity of the results, including conclusions and outcomes; and the effectiveness of the delivery in language suited to a nonspecialist audience. Under "Engagement & Communication," the judges' assessment considers whether the presentation made the audience want to know more; whether the speaker trivialized or unjustifiably generalized the research; whether the presenter conveyed enthusiasm and captured and maintained audience attention; whether the presentation was rushed and aspects were overly elaborated; and, finally, whether the supporting PowerPoint

slide enhanced the presentation: whether it was clear, legible, and concise.

The Bottom Line

The IMS2017 3MT Competition complements the extensive suite of IMS initiatives designed for students and YPs. It should promote diversity, hopefully attract underrepresented communities as well as Women in Microwaves, and surely provide useful benchmarks for meaningful dialogue between the MTT-S membership and the public.

Bottom line, it will be fun!

Acknowledgments

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Editor's Note

Three Minute Thesis is unhyphenated as a trademarked name by the University of Queensland, Australia. Due

to an editorial oversight, the term was hyphenated ("Three-Minute Thesis") in the March/April 2017 issue of the magazine [8]. We apologize for any confusion.

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