

**VANESSA TOLOSA, PHD** Dr. Tolosa is a consultant for several research groups and startups who are developing neurotechnologies for medical applications. Previously, Dr. Tolosa held positions at Neuralink Corp., a startup developing a high bandwidth Brain Machine Interface for clinical use and beyond. As a founding member and Director of Neural Interfaces, she helped grow the company and led the development of implantable microelectrode technologies. Prior to Neuralink, Dr. Tolosa started as a post doc and eventually led all neurotechnology efforts at Lawrence Livermore National Lab (LLNL). During her time there, the LLNL team received the inaugural Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative grants awarded through DARPA (SUBNETS, RAM, HAPTIX) and the National Institutes of Health. Projects covered technologies to understand neuropsychological illnesses, restore memory, provide haptic feedback through prosthetic limbs, and advance fundamental neuroscience. Dr. Tolosa received her B.S. in Chemical Engineering from the University of Florida and Ph.D. in Chemical Engineering from UCLA.



## DR. VANESSA TOLOSA

Principal  
Mavato Engineering LLC

### MINIATURIZING NEURAL IMPLANTS

**ABSTRACT:** Neural prostheses have been implanted in over 250,000 people since the 1980's, improving the lives of patients by reducing pain and restoring functions like hearing, voluntary movement, and vision. Despite these successes with early designs, there is a need to continue improving devices and expanding their therapeutic reach. While commercial manufacturing remains stuck in the 80's, research and development groups have been experimenting with new materials and methods of manufacturing.

The resulting trend has been toward miniaturization of neural implants while increasing functionality. In this seminar, we discuss how we can achieve miniaturization through microfabrication, the scientific and clinical benefits of miniaturized neural implants, and the challenges of commercializing such devices; a challenge to which the next generation of neural engineers can contribute significantly.

FRIDAY, JANUARY 22 / 9:00 AM / VIA ZOOM

▶ Zoom Registration <https://bme.fiu.edu/seminars>



Through the generous support of the Wallace H. Coulter Foundation the Department of Biomedical Engineering facilitates weekly lectures each year during academic terms. Experts in all areas of Biomedical Engineering are invited to campus to provide a research seminar and to meet with faculty and students and to tour our academic and research facilities.

Friday, January 22, 2021  
9:00AM-10:00AM | <https://bme.fiu.edu/seminars>