Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

THE FACULTY OF ARTS, HUMANITIES AND SOCIAL SCIENCES INAUGURAL LECTURE

THE NEURAL RIPPLE EFFECT: WHAT PHANTOM SOUNDS TEACH US ABOUT BRAIN FUNCTION, DISORDERS, AND NEW THERAPEUTIC FRONTIERS.

Professor
Sven Vanneste
Professor of Clinical Neuroscience
Head of School of Psychology

2025
MAY 13TH

About Sven Vanneste

Professor Sven Vanneste is a distinguished neuro-scientist renowned for his extensive research in auditory neuroscience, tinnitus, neuro-electrophysiological imaging, and brain stimulation. He currently holds the Chair of Clinical Neuroscience at Trinity College Dublin, where he also serves as the Head of School for Psychology.

Professor Vanneste completed his Master's degrees in Psychology and Criminology at Ghent University and earned his Ph.D. in Medical Sciences from the University of Antwerp. He continued his training at Harvard, the National Scientific and Technical Research Council and the University of Liège, further refining his expertise in neuroscience and neuromodulation. His academic career includes notable positions such as Associate Professor at the School of Behavioral and Brain Sciences at the University of Texas at Dallas and Honorary Professor in the Department of Surgical Sciences at the University of Otago, New Zealand.

In addition to his academic roles, Professor Vanneste co-founded BRAI3N, a research clinic dedicated to advancing treatments for neurological disorders. His research primarily focuses on understanding the neurophysiological mechanisms underlying various brain disorders, including dyslexia, aphasia, agnosia, fibromyalgia, neuropathic pain, cognitive disorders, obsessive-compulsive disorders, depression, and tinnitus. By exploring these mechanisms, he aims to develop innovative neuromodulation treatments to improve brain function and patient outcomes.

Throughout his career, Professor Vanneste has contributed significantly to the scientific community, authoring numerous publications that have advanced the understanding of brain function and neurological disorders. His work continues to influence the fields of neuroscience and psychology, particularly in developing novel therapeutic interventions for complex neurological conditions.

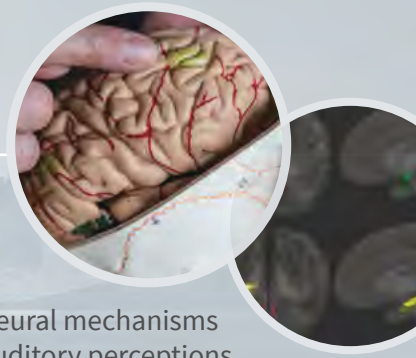
Professor Vanneste hails from Bruges, Belgium.
He is married to Wing Ting To and they have two young daughters, Elise and Helena. When he's not unravelling the mysteries of the brain, you'll likely find him cycling through the countryside, embracing his love for the outdoors. Every Christmas, rumour has it that he is secretly working on a brain stimulation hack to make everyone enjoy Brussels sprouts—though, so far, even neuroscience has its limits!

Professor

Sven Vanneste

MA, MSc. (GHENT), PhD. (ANTWERP), FTCD

Professor of Clinical Neuroscience
Head of School of Psychology



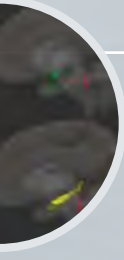
Abstract

“The Neural Ripple Effect: What Phantom Sounds Teach Us About Brain Function, Disorders, and New Therapeutic Frontiers”.

Phantom sounds, such as tinnitus and auditory hallucinations, offer a unique window into the brain’s intricate neural processes. These perceptual phenomena, which arise in the absence of external stimuli, reflect the brain’s capacity for neuroplasticity, maladaptive network activity, and compensatory mechanisms. By studying the neural ripple effect- the cascading influence of phantom sounds on cognition, emotion, and overall brain function- researchers gain critical insights into other neurological and psychiatric disorders, including anxiety, depression, addiction, pain, and neurodegenerative diseases.

By exploring the underlying neural mechanisms that contribute to phantom auditory perceptions and examining their implications for broader brain function and dysfunction, highlights emerging therapeutic strategies. Advances in neuroimaging, brain stimulation, and artificial intelligence are paving the way for novel treatments that target maladaptive neural circuits, offering hope for individuals affected by these conditions. Understanding phantom sounds not only deepens our knowledge of auditory processing but also broadens our perspective on brain dynamics and potential intervention strategies for a range of neurological and psychiatric disorders.

Understanding phantom sounds not only deepens our knowledge of auditory processing but also broadens our perspective on brain dynamics and potential intervention strategies for a range of neurological and psychiatric disorders.



School of Psychology

The School of Psychology is internationally renowned for its excellence in research, education, and innovation. As part of Ireland's oldest and most prestigious university, the School boasts a vibrant academic community with a rich tradition of groundbreaking scholarship. It offers rigorous undergraduate and postgraduate programs, attracting talented students from around the world who benefit from the School's distinguished faculty, modern research facilities, and dedication to interdisciplinary collaboration. Embedded in the DNA of the School is a commitment to curiosity, critical inquiry, and societal engagement, fostering a culture where innovation and impact flourish.

Known for its pioneering work in neuroscience, clinical and counselling psychology, developmental psychology, and applied behavioural sciences, the School actively contributes to addressing contemporary psychological and societal challenges. Students and researchers enjoy access to exceptional resources, including state-of-the-art laboratories and opportunities to collaborate on international research projects.

The School's excellence is underscored by its accreditation with the Athena Swan Silver Award, highlighting its dedication to advancing equality, diversity, and inclusivity within academia. The brilliance of the School of Psychology is further reflected in its consistently high rankings, recognised among the top in Europe and ranked No. 1 in Ireland. Its innovative research outputs, and its profound impact on mental health policy and practice both in Ireland and globally. Graduates of the School emerge as influential leaders and practitioners, equipped with critical skills and deep insights that empower them to contribute meaningfully to society.

Founded in

1962

The School of Psychology is recognised among the top 40 in Europe and is ranked No. 1 in Ireland

Welcome

It is the tradition in Trinity College Dublin that newly appointed Professors are invited to give an inaugural lecture.

The lecture provides an opportunity to showcase their achievements in research, innovation, engagement and teaching activities before members of the University community, invited stakeholders and the general public. An inaugural lecture is a significant event in an academic staff member's career.

The Faculty of Arts, Humanities and Social Sciences is proud to present the inaugural lecture of Professor Sven Vanneste.

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

With thanks to

BRAI3N
Inspired by science

NEUROMOD
Stimulating possibilities®