Tinnitus is the perception of a sound when no external sound is present. The severity of tinnitus varies but it can be debilitating for many patients. With more than 100 million people with chronic tinnitus worldwide, tinnitus is a disorder of high prevalence.  
  
The increased knowledge in the neuroscience of tinnitus has led to the emergence of promising treatment approaches, but no uniformly effective treatment for tinnitus has been identified. The large patient heterogeneity is considered to be the major obstacle for the development of effective treatment strategies against tinnitus.  
  
This Frontiers research topic aims to provide an inter- and multi-disciplinary survey of cutting-edge research in tinnitus, in order to better understand tinnitus heterogeneity and improve therapeutic outcomes. This requires the coordinated effort of multiple scientific disciplines including neuroscience, neurology, genetics, audiology, otolaryngology, psychology, psychiatry, pharmacology, epidemiology, medical informatics, data mining and statistics.  
  
We welcome all forms of submissions: Original Research Articles, Review Articles, Method Articles, Clinical Trials, Case Reports, Mini Review Articles, Code, Book Reviews, General Commentaries, Perspectives, Hypotheses & Theories.  
  
The aim of the topic is to address, in humans and animals, key questions about tinnitus heterogeneity, including:  
  
• Neural correlates and large-scale brain connectivity: What is the neurobiological mechanisms of the different forms of tinnitus? What neuroimaging methods should be used for the classification of tinnitus. What neuronal mechanisms are general to all forms of tinnitus or specific to subtypes?  
• Impact of emotional states on tinnitus severity: How do stress and emotional states influence the vulnerability to develop tinnitus or to increase its intensity? What are the neural circuits mediating these effects? What are the mechanisms underlying the emotional influence on tinnitus generation and persistence?  
• Genetic basis to tinnitus: There is a lack of evidence for the contribution of genetics on tinnitus generation, or vulnerability to develop tinnitus. What is the heritability of tinnitus? What are the forms of tinnitus with the greatest genetic influence and how is it affecting the brain? What genes and variants are associated with specific forms of tinnitus? What is the role of epigenetic changes in tinnitus development?  
• Developing new methods: How can we use the most recent technological advances for the research and treatment of tinnitus? How can we take advantage of modern data mining techniques to better understand the heterogeneity of tinnitus?  
• Consensus of methods: In both animal and human studies, there is a wide variety of methods and protocols to assess tinnitus, which - in absence of consensus - led to divergent results. What methodologies or protocols should emerge? These could include standards for neuroimaging as well as clinical assessment, measuring treatment outcomes, audiological assessment and genetics.  
• Clinical studies for specific types of tinnitus: Given the large heterogeneity in tinnitus, there is probably not a one-therapy-fits-all approach possible. What therapy works for which type of patients?  
• State of the field and future challenges: What is the current consensus on tinnitus subtyping? What is the most fruitful avenue for tinnitus research?  
  
This Topic includes an article published in Frontiers for Young Minds: "[What Does Tinnitus Have to Do with Hearing Loss?](http://kids.frontiersin.org/article/10.3389/frym.2017.00002)" Frontiers for Young Minds provides a collection of freely available scientific articles by distinguished scientists that are shaped for younger audiences by the input of their own young peers.

**Keywords**: Tinnitus, phantom perception, hearing loss, pain, hyperacusis, heterogeneity, therapeutic outcome, personalized treatment, burden of disease, interdisciplinary network, neglected disease, ageing, neurodegeneration, prevention, sustainability, risk factor analysis, innovative methods, plasticity, sensory deprivation

**Important Note**: All contributions to this Research Topic must be within the scope of the section and journal to which they are submitted, as defined in their mission statements. Frontiers reserves the right to guide an out-of-scope manuscript to a more suitable section or journal at any stage of peer review.