

# Keynote Presentations at TSAPS Meeting 2020, Nov. 12-14, UTA

## ***The Genesis of Humanity's Galactic Adventure***

According to *The Hitchhiker's Guide to the Galaxy*, Arthur Dent was humankind's first galactic traveler. We have today moved from fiction to reality, albeit with a pair of 1970's vintage spacefarers, the venerable Voyager 1 and 2 spacecraft, that have now left the confines of our heliosphere, the bubble of magnetized gas created by the wind driven from the Sun, and entered the surrounding interstellar space. Voyager 1 and Voyager 2 crossed the so-called heliopause, the boundary that separates the solar material from galactic material, in late 2012 and 2018 respectively. Despite being launched in 1977, the two spacecraft continue to surprise with new and remarkable discoveries. This includes illuminating the unexpected manner in which the heliosphere and the interstellar medium interact in forming the so-called very local interstellar medium (VLISM). We will describe the discoveries and underlying physics of our new understanding of this complex region, and how these ideas might extend to other stars. We will conclude with some less reverent thoughts on how science is sometimes done and what motivates discoveries.

**Dr. Gary Zank** is a space plasma physicist who works on the physics of the solar wind, especially its interaction with the local interstellar medium, the acceleration and transport of energetic particles, turbulence, and shock waves. He is currently the first University of Alabama Board of Trustees Trustee Professor, and holds the Aerojet/Rocketdyne Chair in Space Science. Zank grew up in South Africa, graduating from the University of Natal with a BSc (Hons.) and a PhD. He was a Max-Planck



### **Dr. G.P. Zank**

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Post-Doctoral Fellow in Germany and Bartol Research Institute Post-Doctoral Fellow, before joining the faculty of the Bartol Research Institute of the University of Delaware. Prior to his joining UAH in 2008, Zank was the Chancellor's Professor of Physics and Astronomy at the University of California, Riverside and Director of the Institute of Geophysics & Planetary Physics at the University of California. Zank is a Fellow of the American Physical Society, the American Association for the Advancement of Science, the American Geophysical Union, and an Honorary Member of the Asia, Oceania Geosciences Society (AOGS). His awards include the Zeldovich Medal (COSPAR) and the Axford Medal (AOGS). He was elected a Member of the National Academy of Sciences in 2016.