From Interstellar Ices to PAHs
A symposium to honor Lou Allamandola's Contributions to the Molecular Universe
Annapolis, MD, USA - September 13^{th} to September 17^{th}, 2015

INVITED TALK

Some History, Some Fun, and a Look to the Future

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Space was thought to be chemically barren until about forty years ago. Astrochemistry was in its infancy, the composition of interstellar dust was largely guessed at, the presence of mixed molecular ices in dense molecular clouds was not taken seriously, and the notion of large, abundant, gas phase, carbon-rich molecules (PAHs) widespread throughout the interstellar medium (ISM) was inconceivable. The rapid development of infrared astronomy between 1970 and 1985, especially observations made by the Kuiper Airborne Observatory (KAO) and the Infrared Astronomical Satellite IRAS), which made it possible to measure mid-infrared spectra between 2.5 to 14 μm, changed all that. Since then observations made from ground-based, airborne and orbiting IR telescopes, together with radio and submm observations, have revealed that we live in a Universe that is not a hydrogen-dominated, physicist's paradise, but in a molecular Universe with complex molecules directly interwoven into its fabric. This extraordinary progress has been made possible by the close collaboration of laboratory experimentalists, theoreticians, and astronomers. Today we recognize that molecules are an abundant and important component of astronomical objects at all stages of their evolution and that they play important roles in many processes that contribute to the structure and evolution of galaxies. The talks at this conference reflect the richness and breadth of Astrochemistry today.

This talk will touch on some of the early milestones and slip-ups in each of the session topics of this meeting, reflecting on the importance of IR astrospectroscopy in all areas. I conclude each session topic with a personal view of important, key objectives in that area.