In the spring of 2017, the FTPI sponsored the workshop “Olivefest: Astroparticle Physics Looking Forward” held in Minneapolis from Wednesday, May 17th to Friday, May 19th 2017. The meeting organizers were Tony Gherghetta, Marco Peloso, Misha Shifman, Evan Skillman, Arkady Vainshtein and Misha Voloshin.

The purpose of the workshop was to gather US and international experts to assess the current status and future prospects across a broad area of topics in astro and particle physics. These topics included supersymmetry, grand unification, dark matter, nucleosynthesis, neutrinos, inflation, and baryogenesis. A goal of the meeting was also to celebrate the 60th birthday of Keith Olive and to honor Keith’s outstanding achievements in physics, particularly in the area of astroparticle physics.

The workshop was very well attended with 80 registered participants, including several former students of Keith Olive, and there were 33 talks presented over 3 days. The talks on dark matter included a historical perspective by Mark Srednicki from UC Santa Barbara; astrophysical searches for dark matter by Stefano Profumo from UC Santa Cruz; a minimal model of gravitino dark matter by Yann Mambrini from Universite Paris-Sud; and the formation of dark stars by Katherine Freese from Stockholm. A number of talks on supersymmetry and grand unification included implications for supersymmetry from collider and dark matter experiments by John Ellis from Kings College, London; a no-scale supergravity and flipped SU(5) model by Dmitri Nanopoulos from Texas A&M; ways to discover or falsify weak scale SUSY by Howie Baer from Oklahoma; probing metastable gluinos at the LHC by Natsumi Nagata from the University of Tokyo; and preferred dark matter scenarios in SUSY theories by Sven Heinemeyer from CSIC Madrid. Perspectives on string theory and extra dimensions were given by Alon Faraggi from Liverpool and Emilian Dudas from the Ecole Polytechnique. Talks on inflation and cosmology included recent progress and observational predictions of large field inflation by Andrei Linde from Stanford; alpha attractors and B-mode targets by Renata Kallosh from Stanford; the EFT of monodromy inflation by Nemanja Kaloper from UC Davis; particle creation in the expanding universe by Rocky Kolb from the University of Chicago; and limits of cosmology by Joe Silk from Johns Hopkins. Michael Barnett from LBL gave a presentation on how astrophysics and cosmology were brought to the Particle Data Book. The status of big bang nucleosynthesis, and the lithium problem was reviewed by Brian Fields from Illinois, Urbana-Champaign. Other related talks included light particle solutions to the lithium problem by Maxim Pospelov from the University of Victoria; observational constraints on the primordial Helium abundance by Evan Skillman from the University of Minnesota; and the local and cosmic chemical evolution by Elisabeth Vangioni from the Institut d'Astrophysique de Paris.
The workshop was a resounding success. The gathering of many experts across a broad area of astro and particle physics was not only testament to Keith's pioneering contributions in the field, but also highlighted the continued progress and development of this multidisciplinary approach. The future prospects therefore look bright to help answer some of the most outstanding questions in astro and particle physics.

Summary by Tony Gherghetta