

## **2017 Gordon Research Conference - Archaea: Ecology, Metabolism and Molecular Biology**

NAI support, coupled with the support of private industry partners allowed us to recruit and support the participation of many new and emerging members of the archaeal and astrobiology community.

We were able to leverage your support to bring together an excellent group of > 100 researchers, both the best domestic researchers and the leaders in the community from abroad. We had participation from 6 continents (Antartica is always tough to recruit from), and were able to bring together a coherent group of researchers, post-docs, students, early career scientists, industrial partners, and editors from leading journals for eleven scientific sessions and four outstanding poster sessions.

The meeting had a lively and, at times, contentious debate on the tree of life, with support for three-domain and Eocyte trees debated in several sessions. Many ecological and diversity talks highlighted the physiology of archaeal species in extreme environments (deserts, hyper saline environments, thermal vents, etc), and additional metagenomic-based predictions of consortiums and uncultured microbes were highlighted on many posters and in selected oral presentations. New nanoarchaeal symbiotic relationships were established, and the roles of deep-rooted branches of archaea were extensively discussed in early sessions. Several new archaeal viruses were described, and the roles of viral integration on genome evolution were debated at length.

The more molecular sessions of the conference were focused on our understanding of CRISPR systems, their effects on genome evolution and viral resistance, and also in self-targeting and population biology. Sessions of DNA and RNA transactions were led by leaders in the field and continued to define the structural and biochemical properties of the transcription and replication apparatus. The roles of micro-proteins and stable RNAs in physiology of diverse lineages was repeatedly highlighted. Our conference concluded with several excellent talks about the fundamental nature of energy transactions involved in methanogenesis and the utility of archaeal systems in production systems and the marketplace.

The generous support of NAI and our private donors permitted us to invite and support an oral presentation from 7 assistant professors who are new to this venue, as well as support oral presentations by 14 post-docs or graduate students. We supported the participation of several discussion leaders and speakers. Over 60 posters were presented during the conference and the posters provided an ideal platform to bring together the old guard and new faces for stimulating discussions. Many new collaborations were initiated and the feedback from evaluations of the conference were almost universally positive.

Tom Santangelo