Pete Crisalli
Willamette University
2007 Winner

Pete was rewarded with a Portland ACS scholarship in 2007 during his time at Willamette University. After completing his undergraduate studies under the guidance of Sarah Kirk at Willamette, he began his graduate studies in 2008 at Stanford University, ultimately working for the lab of Eric Kool. While at Stanford he worked on a variety of projects related to fluorescence quenchers, bioorthogonal organocatalysis, and *in vivo* RNA modification and structural studies. He received his PhD in 2013 and moved to Santa Barbara to be with his wife (a fellow Willamette University chemistry graduate in her graduate studies) and perform his postdoctoral work for Sumita Pennathur in the Engineering Department. At UCSB he continued work with fluorescent molecules and also started a project related to novel DNA sensor techniques, ultimately leading to a startup company in nucleic acid sensors. After his postdoctoral work, Pete began working in industry with Genia Technologies in 2014 after their purchase by Roche Sequencing Solutions, helping to develop the chemistry for their nanopore sequencing approach.

During his work as a graduate student for Dr. Kool at Stanford, Pete helped on multiple projects and helped to develop multiple new fluorescence quenchers with improved spectral properties as well as novel quencher-nucleic acid conjugation methodologies. This included new utilizations of hydrazone/oxime chemistry to allow for *in vivo* fluorophore/quencher conjugation reactions that could be utilized to quench fluorescence in cells without the need for photobleaching approaches. This branched into further bioorthogonal organocatalytic work and novel catalysts for hydrazone, oxime, and general carbonyl chemistry that would later inform the creation of Cell Data Sciences, a company focusing on extraction of nucleic acids from FFPE tissues. At Stanford he also worked on the generation of novel RNA SHAPE reagents, including the first materials capable of allowing SHAPE analysis in living cells for a greater understanding of *in vivo* RNA structures, with the development of commercial products to allow for expansion of research in this field.

Upon moving to UCSB for his postdoctoral studies in the Pennathur Lab, Pete continued some of his research interest in fluorescent molecules and studies of their behaviors, but also began to work on nanofluidics and properties that govern behavior of systems in sub-micrometer scale devices. His work on nanofluidic surface modifications and background in fluorescence approaches and nucleic acid

studies in the Kool lab helped inform the creation of another San Francisco company (Alveo Technologies) focused on novel nucleic acid detection methodologies.

Upon completion of his postdoctoral studies, Pete began his industrial career at Genia Technologies, a nanopore sequencing company purchased by Roche Sequencing Solutions in 2014. In his 4 years there he has helped to design molecules used for the sequencing approach and is currently working as a Research Leader, overseeing a group of employees in the continued improvement of sequencing molecules and providing general chemistry advice in Roche Sequencing Solutions, working primarily out of Santa Clara.

Pete and his wife Meredith currently live in Sunnyvale with their two-year-old son.