Lecture #1
4 p.m. Wednesday, March 23, 331 Smith Hall
(reception follows Kate & Michael Barany Conference Room, 117/119 Smith Hall)

Tailored Virus-Like Particles for Biomedicine and Catalysis

Viruses and virus-like particles are the largest scaffolds conveniently available to the molecular scientist with structures known to atomic resolution. They therefore represent unique tools with which to explore a variety of questions in nanoscience, biology, and materials research. Our work in recent years has focused on the particle derived from the bacteriophage Qβ capsid as a model system. Methods for the chemical and genetic modification of the coat protein, its targeting to particular cell types, and its use in immunology and as a container for functional biological molecules will be described.

Lecture #2:
9:45 a.m. Thursday, March 24, 331 Smith Hall

Click Chemistry Returns Home: Development and Applications to Materials Science

The art and science of both polymer chemistry and bioconjugation rely on highly reliable bond-forming reactions. New and optimized click reactions can have an immediate impact on these fields, often allowing access to new types of materials and functions. Three ligation reactions that meet click chemistry standards will be discussed, along with applications to biomolecule functionalization and degradable materials development.

Lecture #3:
4 p.m. Friday, March 25, 331 Smith Hall

New Ventures: Analytical Methods and Polyvalent Catalysis

The efficient formation of bonds in complex aqueous environments is an important enabling technology of chemical biology. We have focused recently on three ligation reactions that meet click chemistry standard, two of which allow for controlled molecular fragmentation as well. Applications to biomolecule functionalization and degradable materials development will be discussed.

Professor & Chair
M.G. Finn
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Research focuses on developing chemical and biological tools for research in a range of fields, including chemistry, biology, immunology and evolution with viruses; development of reactions for organic synthesis, chemical biology, and materials science; and traditional and combinatorial synthesis of biologically active compounds

Website: www.FinnLabResearch.org

Host: Mark Distefano