



Floyd Romesberg
The Scripps
Research Institute

Host: Megan Thielges



*Semi-Synthetic Organism with an
Expanded Genetic Alphabet*

Expansion of the genetic alphabet to include a third base pair not only has immediate utility for a number of applications, such as site-specific oligonucleotide labeling, but also serves as the foundation for an organism with an expanded genetic code. Toward this goal, we have examined a large number of packing and hydrophobic interactions rather than H-bonding. Optimization based on extensive structure-activity relationship studies and two screens resulted in the identification of a class of unnatural base pairs that are well recognized by DNA and RNA polymerases. More recently, we have engineered *E. coli* to import the requisite unnatural triphosphates and shown that DNA containing the unnatural base pair is efficiently replicated within the cell, resulting in the first semi-synthetic organism that stores increased information in its genome.

For further details, contact Ms. Jill Campbell at 5-9749

QCB

Seminar Series

**Co-hosted by the Department
of Chemistry and the Graduate
Program in Biochemistry**

**FRIDAY
MARCH 27**

**CHEMISTRY
C033**

2:30 p.m.