

*ENGINEERING SCIENCE AND MECHANICS SEMINAR***Molecular Design of Peptidic Nanoparticles—
From Simple Coiled-Coils to Targeted Drug Delivery
and Synthetic Vaccines****Peter Burkhard**Department of Structural Biology
University of Basel, Switzerland

Artificial particulate systems such as polymeric beads and liposomes are finding multiple applications in drug delivery, drug targeting, antigen display, vaccination, and other technologies. We will describe the structure-based design of a novel type of nanoparticle with regular polyhedral symmetry and a diameter of about 16 nm, which self-assembles from single polypeptide chains. Each peptide chain is composed of two coiled-coil oligomerization domains with different oligomerization states joined by a short linker segment. While peptides have been used as building blocks for the design of nanotubes, this is the first report on rationally designed peptidic nanoparticles. Such peptidic nanoparticles are ideally suited for designing drug targeting and drug delivery systems, or they may be used for repetitive antigen display.

DATE: FRIDAY, MARCH 19, 2004**TIME: 3:35 p.m.****LOCATION: 210 Hallowell Building / University Park Campus*****This seminar will be transmitted via videoconferencing
to CG623 Penn State's College of Medicine / Hershey.***