

PROF. BENJAMIN
(KEITH) KEITZ

UT CHEMICAL ENGINEERING
3-06-15

ABOUT ME

UNDERGRAD

Chemical Engineering

University of Texas at
Austin

Prof. Grant Willson

GRAD

Chemistry

Caltech

Prof. Bob Grubbs

POSTDOC

Chemistry

UC Berkeley / UCSF

Profs. Jeffrey Long and
Stan Prusiner

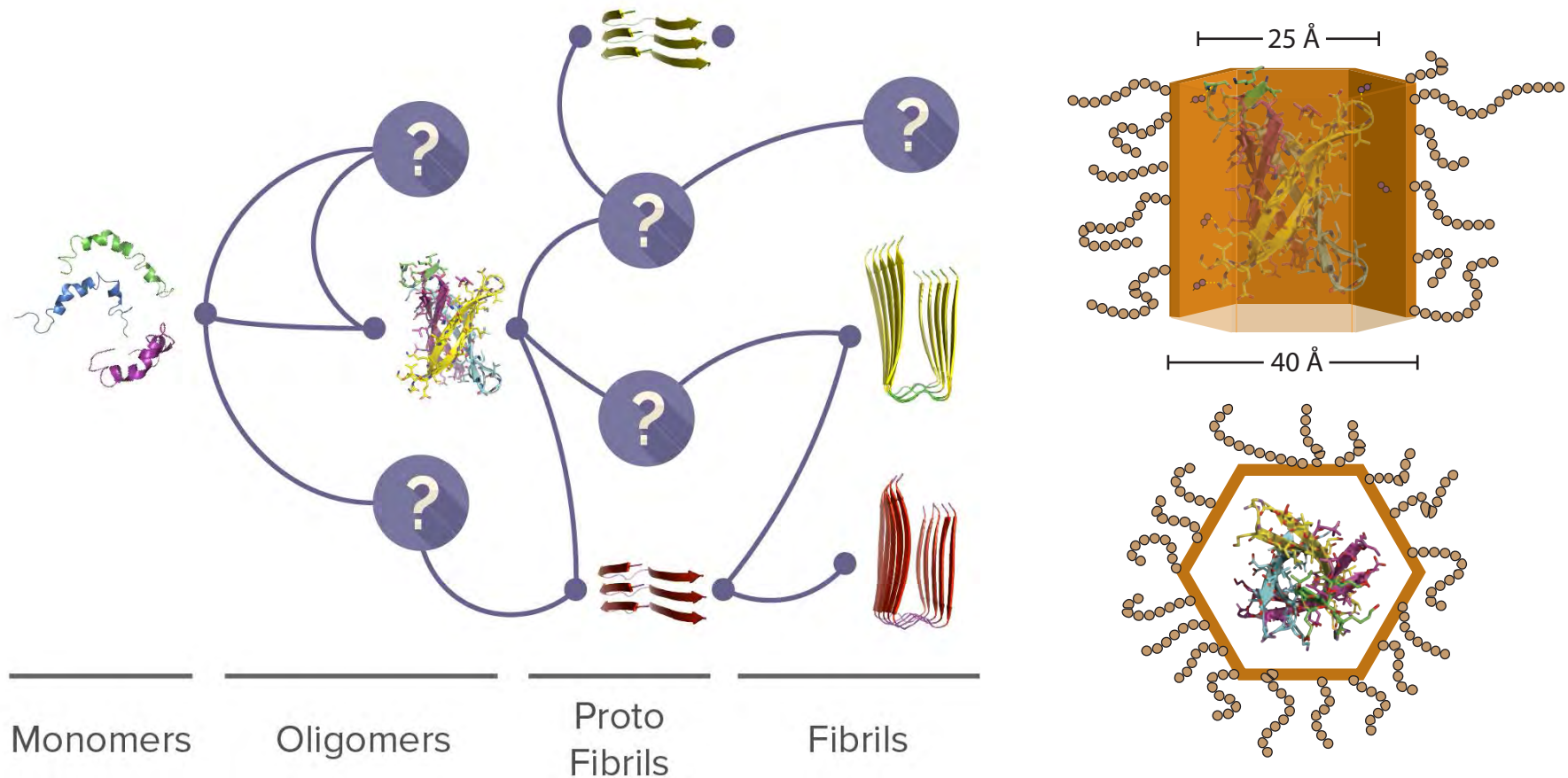
STARTING : JAN 2016

2-4 STUDENTS

NEURODEGENERATION

THE WORLD'S MOST
CHALLENGING **KINETICS**
PROBLEM

THE AMYLOID CASCADE

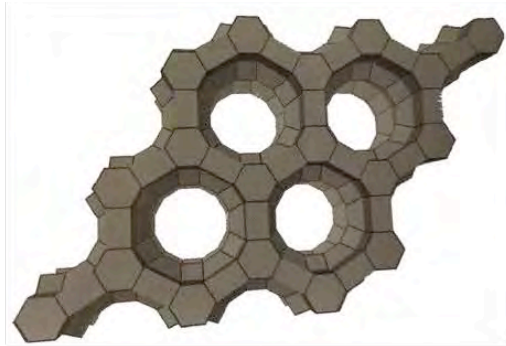


POROUS MATERIALS CAN CONTROL
OLIGOMER SIZE & STRUCTURE

TYPES OF MATERIALS



Zeolite X



Zeolite L



ZSM-5



SBA-15

Increasing Si/Al

DRUG DELIVERY,
PROTEIN FOLDING
APPLICATIONS

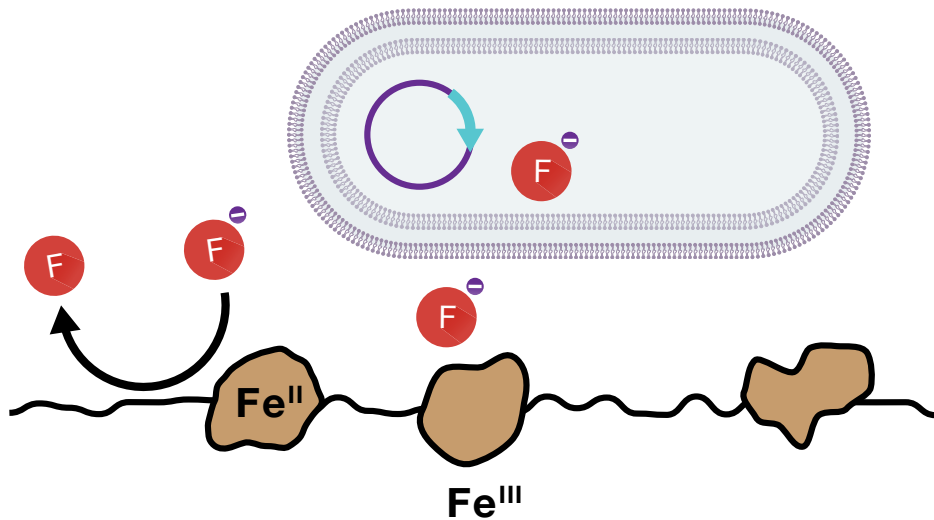
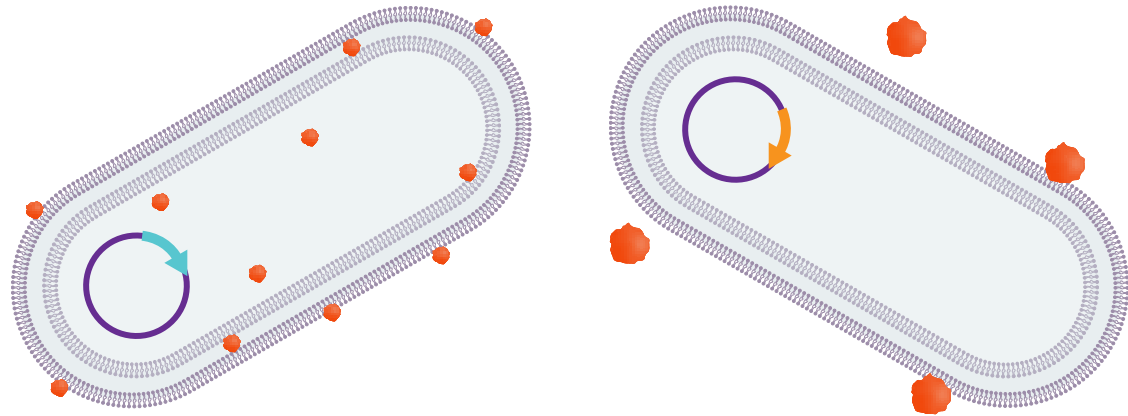
CONTROL OVER PORE
SIZE, CHARGE, AND
SURFACE CHEMISTRY

DIRECTED EVOLUTION OF MATERIALS

COUPLING GENOTYPE TO
INORGANIC PROCESSES

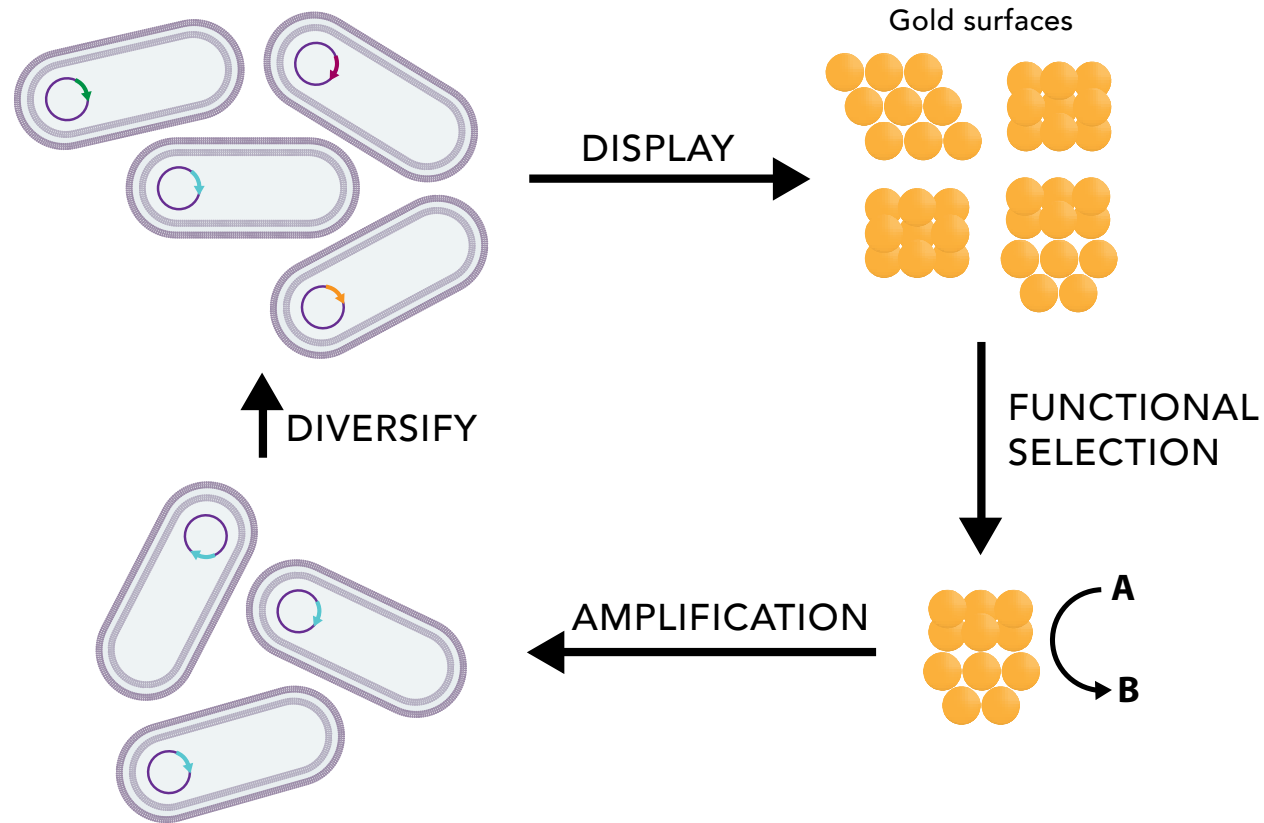
BIOGENIC MATERIALS

PRODUCTION OF METAL NANOPARTICLES



MODIFICATION OF OXIDE SURFACES

SELECTION > SCREENING



SIZE, SHAPE, LOCATION OF NANOPARTICLES ARE
ALL TUNABLE PROPERTIES

SPECIFIC SURFACES CAN ALSO BE FAVORED

THANKS!

CPE 3.448