

Michael Crider, PhD

Professor and Chair

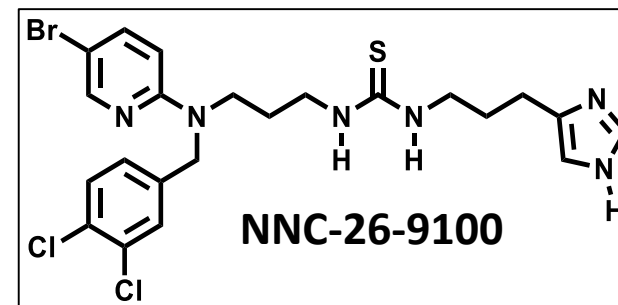
Drug Discovery and Synthetic Medicinal Chemistry



- Discovery of the first non-peptide with high affinity and selectivity at cloned human somatostatin subtype 4 receptors (sst₄)
- NNC-26-9100, Ki (sst₄) = 6 nM

J. Am. Chem. Soc. **1998**, *120*, 1368-1373

J. Med. Chem. **1998**, *41*, 4693-4705



- Michael Crider Laboratory-Continued Research on sst₄ non-peptides

Guim Kwon, PhD

Professor

Pharmacology, Obesity and Diabetes



- The link between obesity and type II Diabetes
- Designing and validating an implantation model for β -cell replacement therapies
- Developing algorithms for a closed-loop artificial pancreas

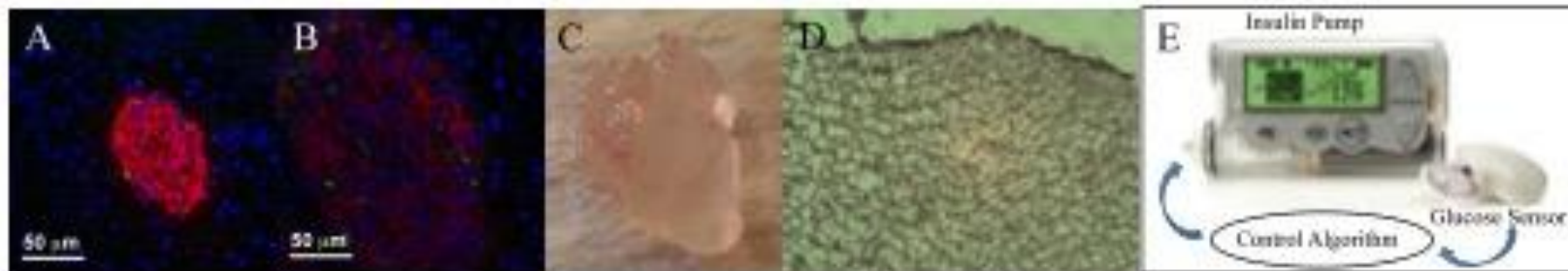


Figure 1. A and B: Islets of Langerhans isolated from lean- and high fat diet (HFD)-fed mice. An Islet isolated from a HFD-fed mouse show decreased insulin content, enlarged islet size, and altered islet morphology compared to that from a lean diet-fed mouse. Red: insulin, Green: glucagon, Blue: nuclei C. PEG hydrogel retrieved from a subcutaneous site of a mouse. D. Image of a frozen section of PEG hydrogel retrieved from a mouse (H&E staining, 20X objective) E. A schematic diagram of an artificial pancreas.

Cathy Santanello, PhD

Professor

Medical Entomology, Pedagogy Research

- Prevalence of a newly discovered bacterium, *Rickettsia amblyommii*, in local tick vectors. *Rickettsia felis* in local cat fleas
- Gulf Coast tick, *Amblyomma maculatum*
- Scholarship of teaching and learning



Redir collecting ticks



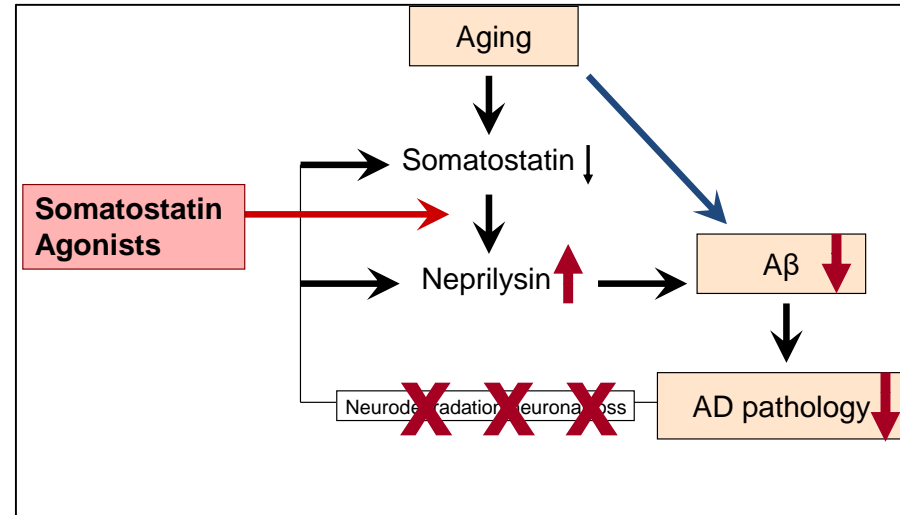
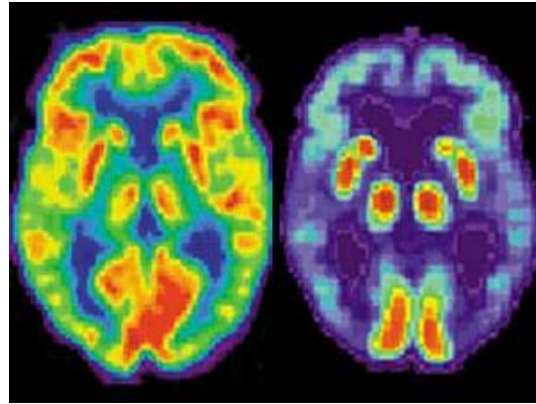
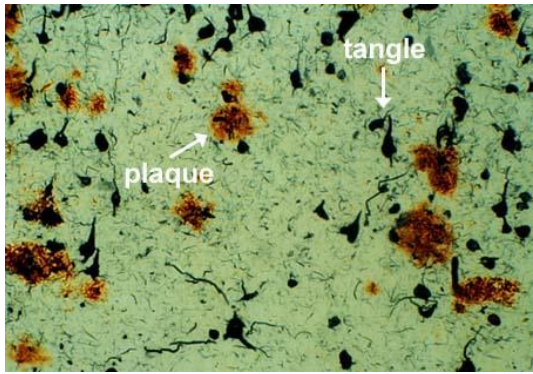
Ken Witt, PhD

Professor

Pharmacology, Neurodegenerative Diseases



- Somatostatin subtype-4 agonists as a disease-modifying treatment for Alzheimer's disease



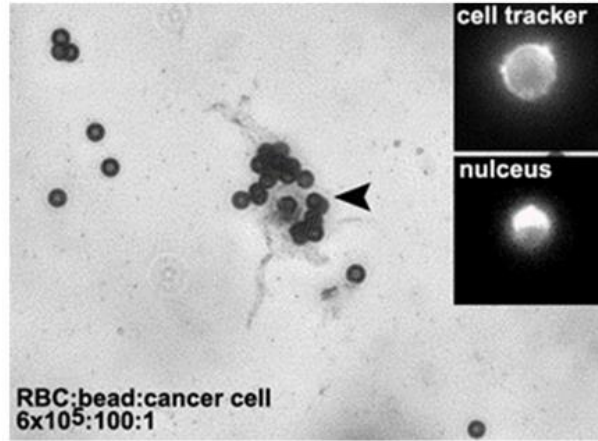
- Blood-brain barrier research. Alterations with pro-inflammatory high fat diets

Joseph Schober, PhD

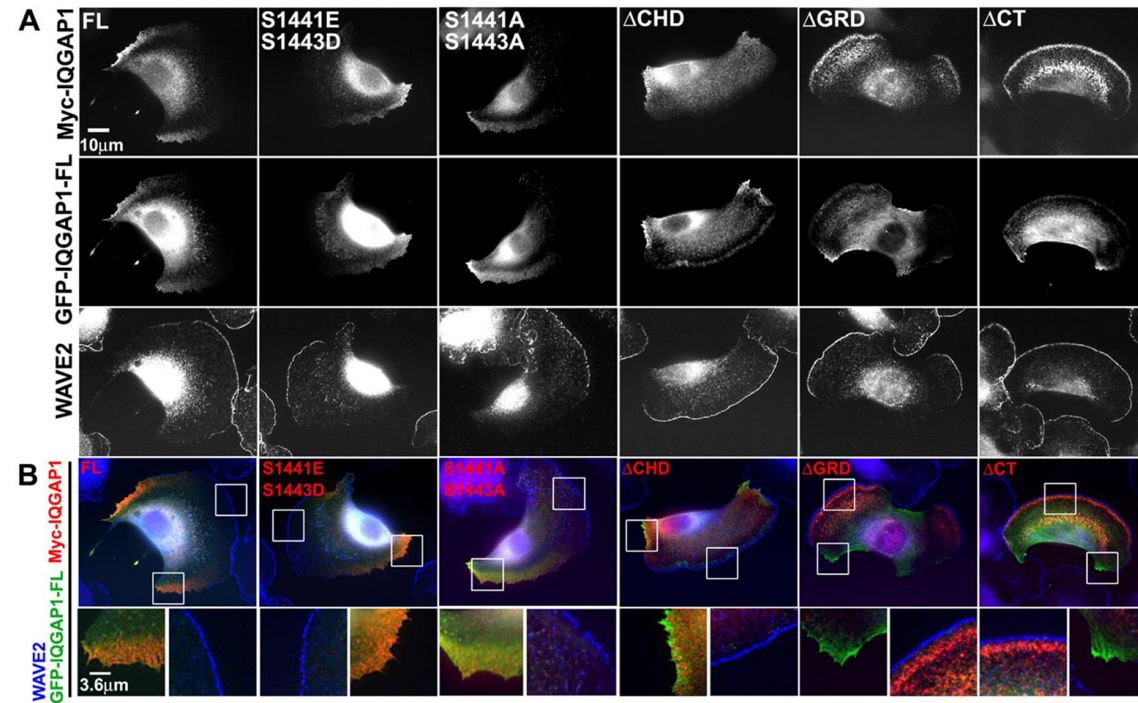
Professor

Pharmacology, Cancer Cell Biology

- Cytoskeleton dynamics and cell motility
- Biomedical engineering approaches to cancer diagnosis and treatment.



“On-chip” phase and epifluorescence microscopy of an isolated MCF-7 breast cancer cell.



Mutational analysis of IQGAP1 localization in melanoma cells

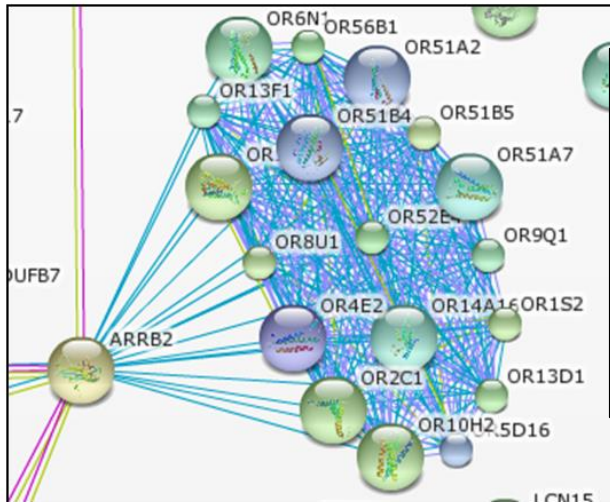
Ronald E. Worthington, PhD

Professor

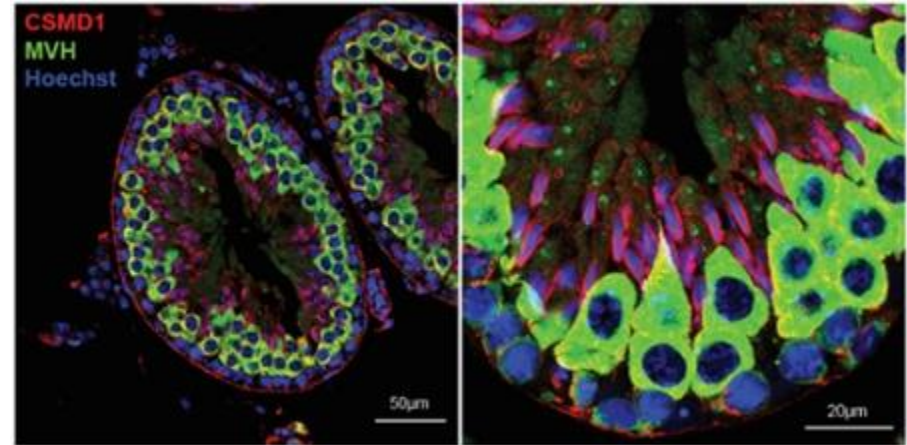
Pharmacogenomics, Molecular Biology



- Human genetic variation related to disease and drug response
- Harvard Personal Genomes Project
- Bioinformatics, computational biology



Network analysis from student capstone project “Detection of possible pathway disruption resulting from silent codon mutations”, by Kasey Raetz, Candidate PharmD. 2016



Expression of CUB and Sushi multiple domains 1 (CSMD1) protein, along with the germinal stem cell marker MVH, during spermatogenesis

Marcelo Nieto, PhD

Professor

Medicinal Chemistry, Natural Products

- Rational combinatorial library design
- Natural products-based drug discovery
- Discovery of novel chemotherapeutic agents with unique mechanism of action.

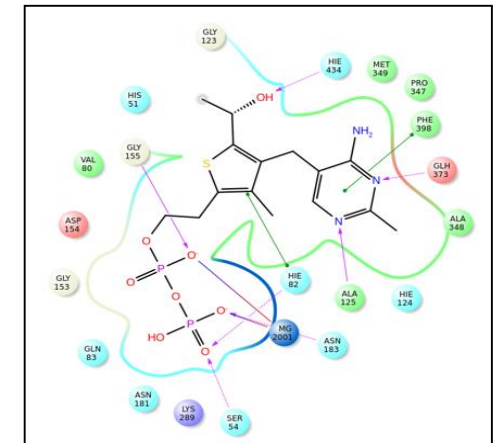
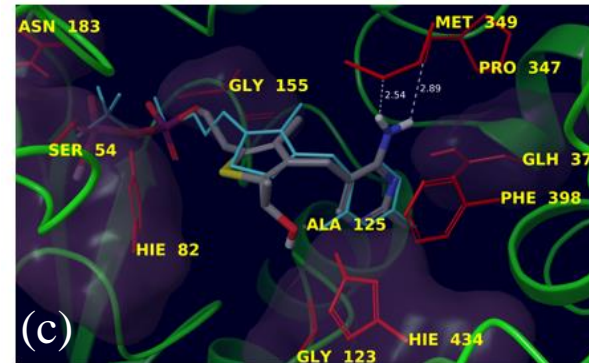
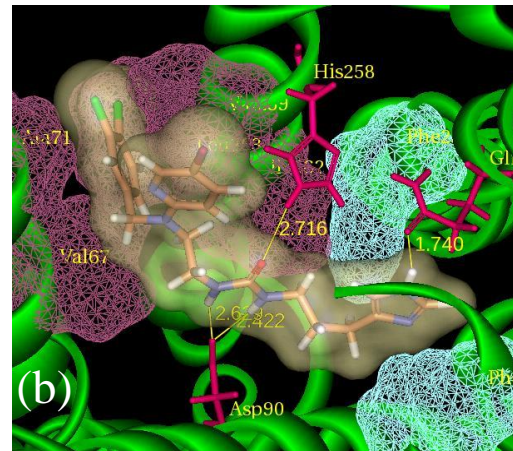
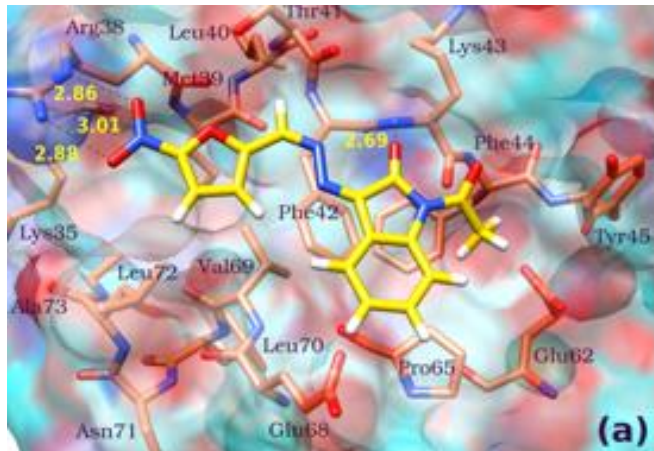


Maria Kontoyianni, PhD

Professor

Medicinal Chemistry, Computational Drug Design

- Develop computational methodologies to understand molecular recognition
- Identification of Novel Interleukin-2 Inhibitors for Autoimmune Disorders (a)
- GPCRs: Somatostatin-4 Agonists for Alzheimer's (b)
- Mycobacterium Tuberculosis DXS (c) Inhibitors for Malaria and Tuberculosis (c)



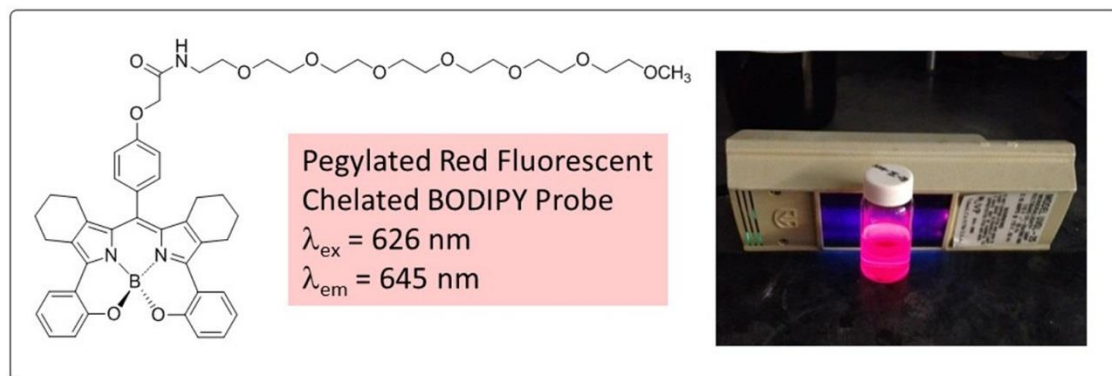
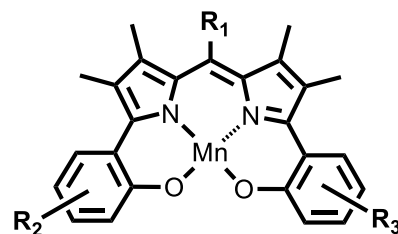
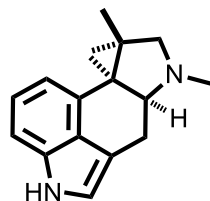
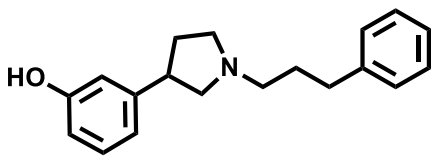
Bill Neumann, PhD

Professor

Medicinal Chemistry, Organic Synthesis



- Synthesis of heterocyclic derivatives for drug discovery
- Parallel-friendly catalysis, total synthesis
- Peroxynitrite decomposition catalysts
- Optical dyes for biophotonic applications



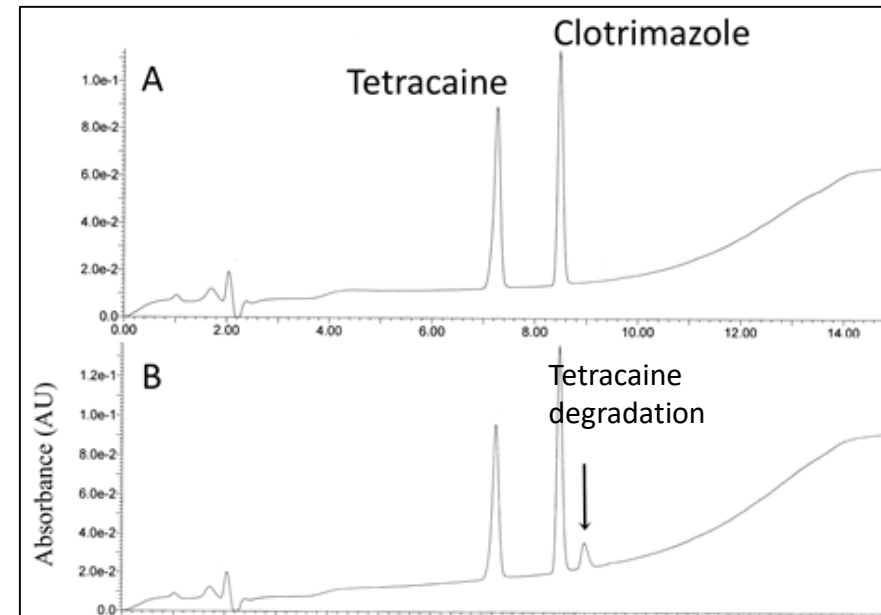
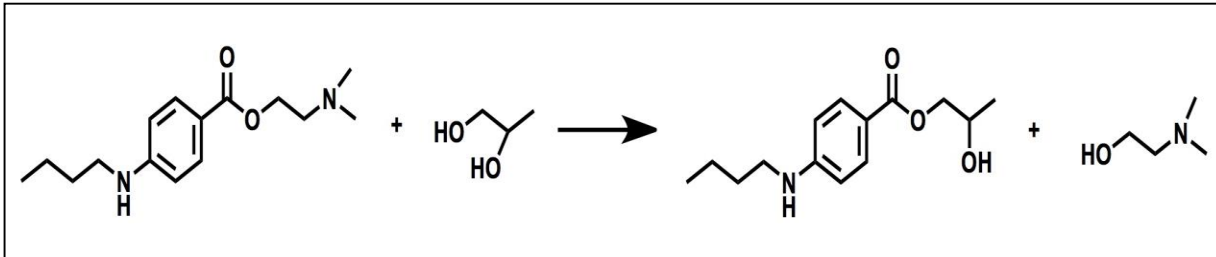
Tim McPherson, PhD

Professor

Pharmaceutics, pharmacy compounding



- Drug product formulation
- Drug product stability and compatibility
- Compounding



Bill Kolling, PhD

Associate Professor

Pharmaceutics

- Microemulsions for nanoparticle synthesis
- Water vapor sorption by drugs and excipients

