College of Pharmacy and Pharmaceutical Sciences

We acknowledge that the land on which the College of Pharmacy and Pharmaceutical Sciences is located is the territory of the Spokane Nation (Spokane campus) and Yakama Nation (Yakima and USTUR campuses), whose members stewarded this land for generations. We thank the Spokane and Yakama people for their strength and resilience in protecting and nurturing this land, and we aspire to uphold our responsibilities with humility and in accordance with their long-standing example.

College of
Pharmacy and
Pharmaceutical Sciences
WASHINGTON STATE UNIVERSITY

MISSION

To advance human health through excellence in collaborative research, scholarship, and clinical education and to develop outstanding health care professionals and scientists from all walks of life

VISION

To be a leader in advancing, promoting, and protecting human health

INCLUSIVENESS

We focus on "One Pharmacy" or a "Pharmily" and we celebrate the rich diversity of our region, providing care and services for all communities and underserved groups.

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Washington State University

CPPS RESEARCH FOCI

- Novel targets for drug development
- Pharmacokinetics, drug-drug and natural product interactions
- Drug metabolism and pharmacogenomics
- Drug delivery
- Tobacco/smoking cessation
- Impact of novel teaching strategies

Novel Therapeutic Targets

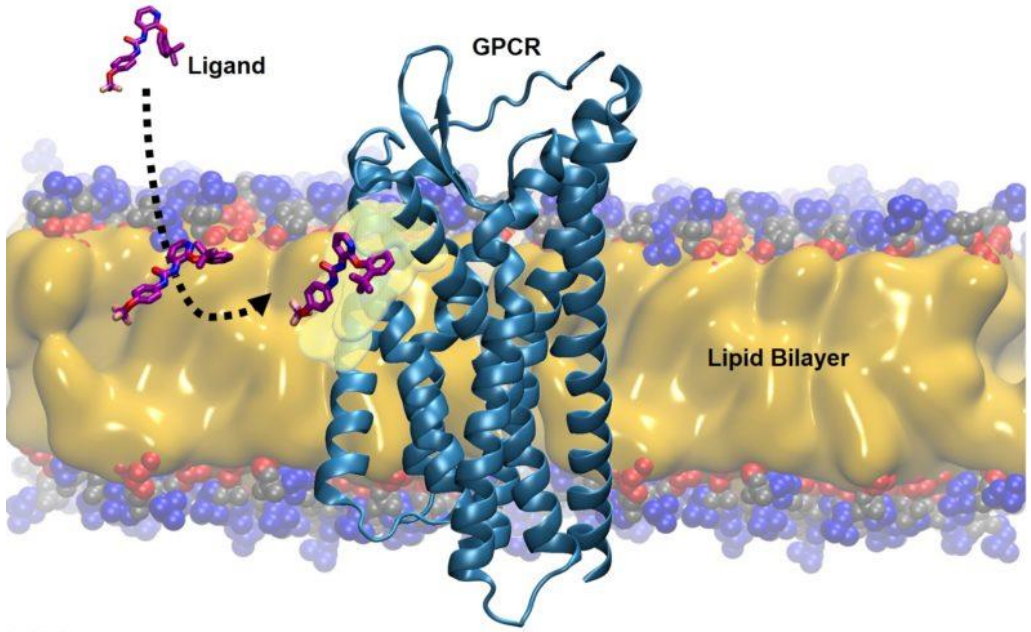
- Inhibition of cyclin-dependent kinase to prevent cardiotoxicity by antibiotics and anti-cancer agents (Cheng)
- Use of lanthionine ketamine, a compound that activates autophagy, as a potential treatment for neurodegenerative diseases (Denton)
- Use of EGCG (epigallocatechin-3-gallate), a molecule found in green tea, as an anti-inflammatory agent in the treatment of rheumatoid arthritis (Ahmed)
- Interruption of tumor-stromal interactions to inhibit tumor metastasis (Wu)

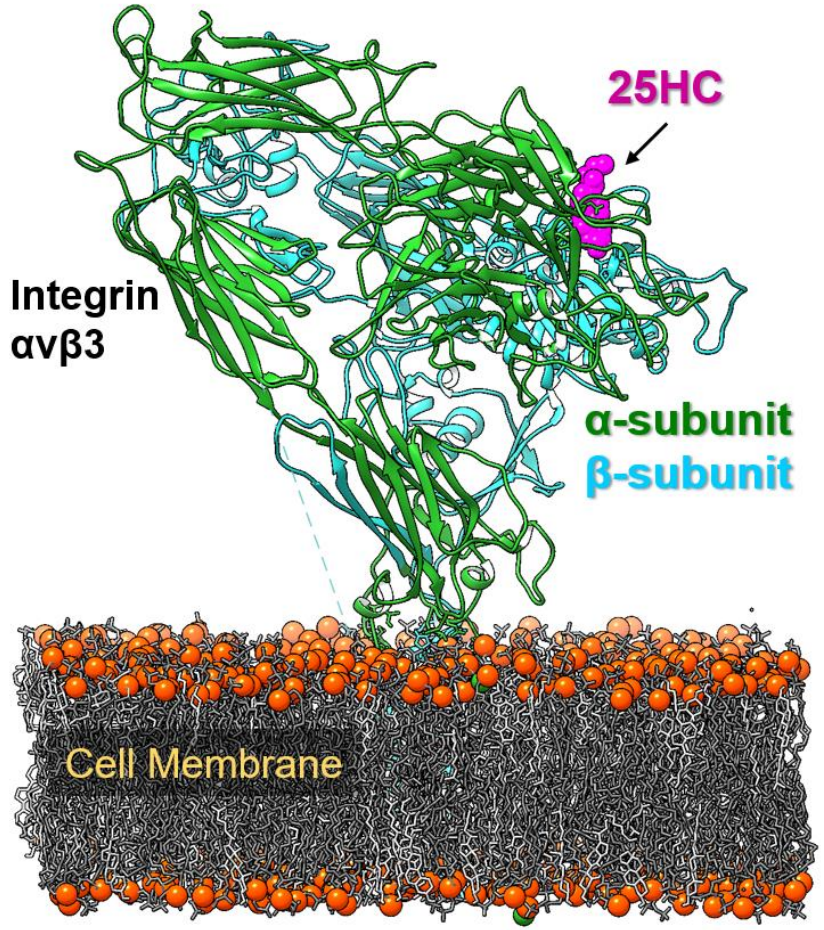
Novel Therapeutic Targets

- Regulation of the endocannabinoid system to reduce pain and inflammation in rheumatoid arthritis (Ahmed)
- Role of PKA signaling in cardiomyocyte necrosis following MI/reperfusion (Cheng)
- Development of an oral nicotine derivative that inhibits nicotine-metabolizing enzymes (Lazarus and Denton)
- G protein-coupled receptors as therapeutic targets in prostate cancer (Wu and Meier)
- Enzyme replacement therapy: succinic semialdehyde dehydrogenase (Gibson and Roulet)

Mathematical Modeling and Simulation

- Effect of lipid bilayer on drug action and disposition (Natesan)
- *In silico* predictive models to examine membrane-drug, enzyme-drug and protein-drug interactions (Natesan)





25-Hydroxycholesterol directly binds to integrin αvβ3 and produces a proinflammatory response through integrin-FAK signaling pathway.

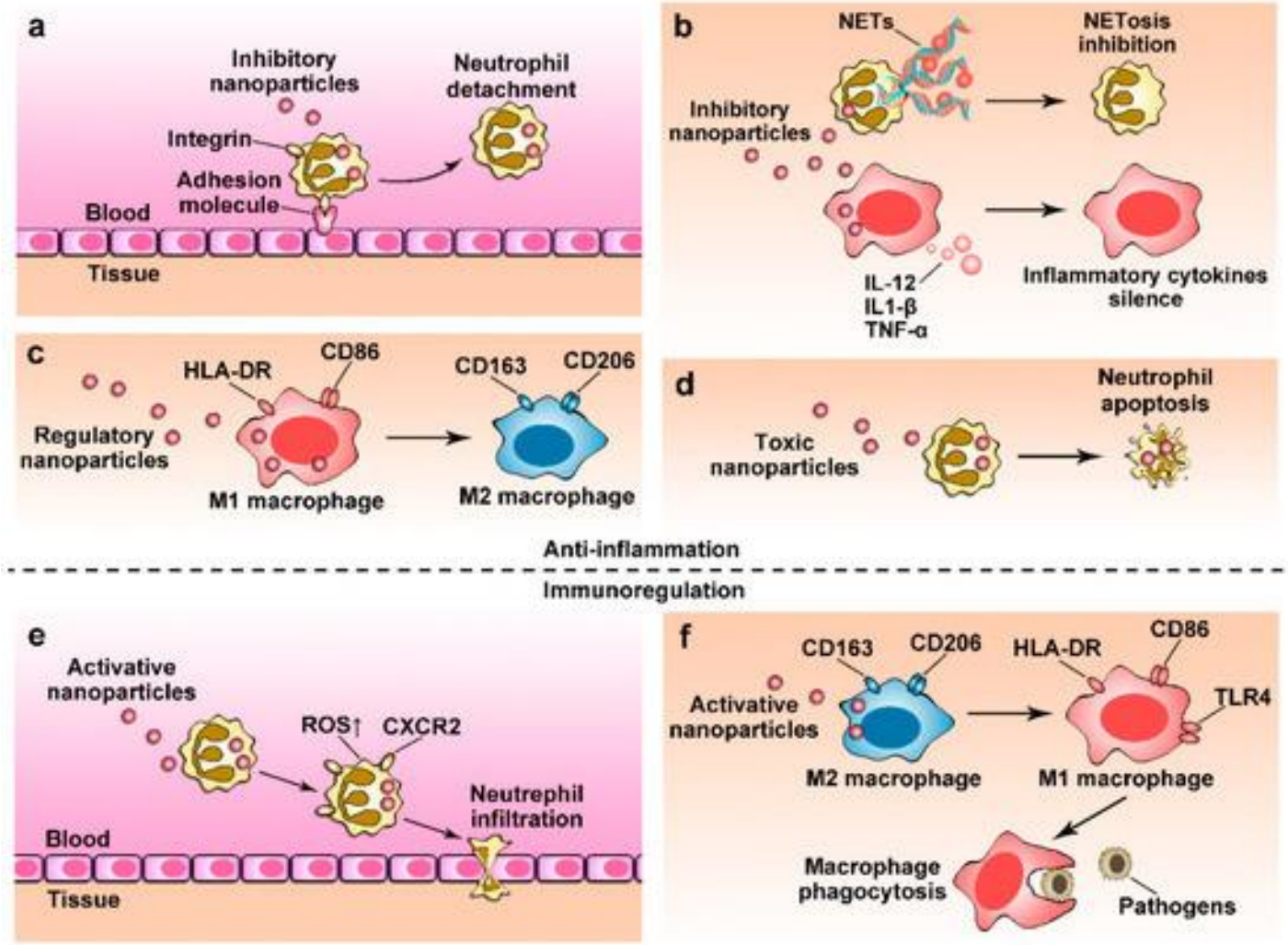
Pharmacokinetics and Drug Interactions

- NIH-funded Center of Excellence to study drug interactions with natural products (Paine)
- Prediction of ontogeny-mediated oral absorption and hepatic and renal disposition of drugs in children using PBPK modeling (Prasad)
- Interaction of marijuana and opioid and NSAID metabolism (Lazarus)
- Understanding how perturbations in PK pathways affect toxicity (Clarke)

- Discovery and validation of biomarkers for non-invasive prediction of drug disposition and response (Prasad)
- Role of drug metabolizing enzymes and transporters in steroid homeostasis (Prasad)

Nanoparticle-based Drug Delivery

- Development of nanoparticle carriers that cross endothelial barriers *in vivo* (Wang)
- Delivery of therapeutic nanoparticles to sites of inflammation (Wang)



Pharmacy Practice Research

- Diagnosis and treatment of minor illnesses (Akers)
- Geriatric home healthcare (Gates and Clark)
- Pharmacogenetic testing to optimize treatment outcomes (Crutchley)
- Patient-centered outcomes in chronic medical conditions (Neumiller)
- Transgender patient care (Newsome)
- Transition of care in rural and underserved populations (Underberg)
- Increasing access to vaccinations—training pharmacists and technicians (McKeirnan et al)

Spokane

Yakima

https://pharmacy.wsu.edu

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