New 2 Quarter Core Course in Integrative Pathobiology:

Flagship Course for Comparative Pathology Graduate Group

Summary: Together this two quarter core course (9 units total) will overview topics in molecular biology, cellular biology and tissue structure and function before integrating these topics in a module on cellular mechanisms of disease and a module integrating organ systems response to disease (this year will feature the respiratory system and animal models of disease). The final module in the Spring quarter will cover population health and disease ecology (one health).

Winter Quarter 2013 Instructor of Record: Dori Borjesson, Core I:

DNA Techniques, 2 weeks, taught by Samantha McDonnell and Jesse Deere:

- E. Coli, plasmids and bacteriophages
- Enzymatic manipulation of DNA/RNA
- Preparation and analysis of RNA
- DISC: PCR Technique
- Mutagenesis of cloned DNA
- Introduction of DNA into cells, gene silencing
- Analysis of proteins and Protein expression
- DISC: DNA-protein interactions (transcription factors/chromatin)

Cell/Tissue Structure/Function, 3 weeks, led by Verena Affolter, many instructors:

- Cell Tissue Structure-Epithelium
- Cell Tissue Structure-Glands
- DISC: Epithelial/Glandular
- Cell Tissue Structure-Connective Tissue
- Cell Tissue Structure-Blood Vessels
- Cell Tissue Structure-Blood
- DISC: Connective Tissue/Vessels/Blood
- Cell Tissue Structure-Nervous Tissue
- Cell Tissue Structure-Muscle
- Cell Tissue Structure-Bone/cartilage
- DISC: Nerve/Muscle/Bone/Cartilage

Cellular Mechanisms of Disease, 5 weeks, led by Xinbin Chen, many instructors

- Cell membrane pathology
- Cell membrane pathology
- DIS Cell membrane pathology
- Etiologies of disease and cellular responses/adaptations
- Cellular stress responses: ER stress and Autophagy
- DIS 1 Etiologies of disease and cellular responses/adaptations
- Cell Death
- Cell Death
- Cellular Stress and Biomechanics
- DIS Cell Death
- Cellular Stress and Biomechanics
- Vascular Disturbances
- Vascular Disturbances
- DIS Vascular Disturbances
- Neoplasia
- Neoplasia
- Neoplasia
DIS Neoplasia
Neoplasia
Integrative Pathobiology Core I Final Exam

UCD SPRING BREAK

Spring Quarter 2013 Instructor of Record: Janet Foley, Core II:

Cellular Mechanisms of Disease (con't), 3 weeks, led by Xinbin Chen, many instructors
Inflammation 1
Inflammation 2
DIS Inflammation
Host-Pathogen interactions 1
Host-Pathogen interactions 2
DIS Host-Pathogen interactions
Biology of Aging/Regenerative Medicine 1
Biology of Aging/Regenerative Medicine 2
DIS Biology of Aging/RegenMed

Integrated Systems Module: Respiratory Disease, 2 weeks, led by Dennis Wilson, Lynelle Johnson, Laura VanWinkle
Integrated System Module 1a
Integrated System Module 1b
DIS Integrated Mod 1
Integrated System Module 1c
Integrated System Module 1d
DIS Integrated Mod 1

Integrated Systems Module: Animal Models of Disease, 2 weeks, led by Stephen Barthold
Integrated System Module 2a
Integrated System Module 2b
DIS Integrated Mod 2
Integrated System Module 2c
Integrated System Module 2d
DIS Integrated Mod 2

Population and Ecosystem Health, One Health, 2 weeks, led by Janet Foley and Woutrina Miller
Individual and Drivers of Disease
Population/Community Ecology and Disease
DIS Population
Regional Disease and Effectors
Ecosystems Health
DIS Ecosystems
Ecosystem Health/Biological Diversity
Global Health
DIS Population