

Molecular and Cellular Organogenesis
Topics in Anatomy 675 Class #40729
Spring, 2011

Co-directors: Drs. John Fallon and Youngsook Lee

This class is a 3 credit course and meets at 3:30-4:45PM on Tuesdays and Thursdays. The course is intended for graduate and advanced undergraduate students interested in developmental biology, stem cell biology, and molecular basis of normal organ formation. The Developmental Biology course (Zoology 470) by Jeff Hardin or Mammalian Embryology (Anatomy 675) by Karen Downs is recommended, but not required.

This course will cover the most current knowledge of the basic principles of organogenesis including the molecular and cellular pathways leading to normal organ development. Tissue/organ specification, differentiation, and developmental processes, focusing on molecular signals and associated signal transduction pathways and transcriptional regulation will be covered in depth. Depending on the organ, current understanding of the role of stem cells and the molecular basis for congenital disease will be included.

The instructor for each unit will be a scientist recognized for advancing understanding of the development of the organ being studied. There will be three lectures and one journal discussions per unit.

ANATOMY 675: SPECIAL TOPICS IN MOLECULAR AND CELLULAR ORGANOGENESIS
Class # 40729 COURSE SYLLABUS – SPRING 2011
Location: Medical School #341 Bardeen, 1300 University Avenue
Tuesdays and Thursdays 3:30 PM-4:45 PM

Introduction

Week 1-1 Jan 18 General Intro and Embryogenesis Overview **Dr. Youngsook Lee**

Week 1-2 Jan 20 Basic mouse genetic technology **Dr. Anne Griep**

UNIT 1. Early embryogenesis Dr. Karen Downs

Week 2-1 Jan 25 Lecture by professor

Week 2-2 Jan 27 Lecture by professor

Week 3-1 Feb 1 Lecture by professor

Week 3-2 Feb 3 Journal Discussion by one or two students

UNIT 2. Eye Development Dr. Anne Griep

Week 4-1 Feb 3 Lecture by professor

Week 4-2 Feb 10 Lecture by professor

Week 5-1 Feb 15 Lecture by professor

Week 5-2 Feb 17 Journal Discussion by one or two students

UNIT 3. Neuron Development Dr. Grace Boekhoff-Falk

Week 6-1 Feb 22 Lecture by Professor

Week 6-2 Feb 24 Lecture by professor

Week 7-1 Mar 1 Lecture by Professor

Week 7-2 Mar 3 Journal Discussion by one or two students

UNIT 4. Limb bud Development Dr. John Fallon

Week 8-1 Mar 8 Lecture by Professor

Week 8-2 Mar 10 Lecture by professor

SPRING BREAK: Week 9 March 12-20

Week 10-1 Mar 22 Lecture by Professor

Week 10-2 Mar 24 Journal Discussion by one or two students

UNIT 5. Heart Development Dr. Youngsook Lee

Week 11-1 Mar 29 Lecture by Professor

Week 11-2 Mar 30 Lecture by professor

Week 12-1 Apr 5 Lecture by Professor

Week 12-2 Apr 7 Journal Discussion by one or two students

UNIT 6. Pancreas Development Dr. Jon Odorico

Week 13-1 Apr 12 Lecture by Professor

Week 13-2 Apr 14 Lecture by Professor

Week 14-1 Apr 19 Lecture by Professor

Week 14-2 Apr 21 Journal Discussion by one or two students

UNIT 7. Prostate Development Dr. Chad Vezina

Week 15-1 Apr 26 Lecture by Professor

Week 15-2 Apr 28 Lecture by Professor

Week 16-1 May 3 Lecture by Professor

Week 16-2 May 5 Journal Discussion by one or two students

FINAL EXAM WEEK

Week 17-1 May 10

Week 17-2 May 12