

<u>Date</u>	<u>Topic</u>	<u>Lecturer</u>
Wed. 8/27	Organizational Meeting	<i>Steve DiNardo & Nancy Speck</i>
Mon. 9/1	NO CLASS LABOR DAY	
Wed. 9/3	Cell lineage and fate maps; Introduction to genetics	<i>Bushra Raj</i>
Fri. 9/5	Single cell analyses and cell fate	<i>Bushra Raj</i>
Mon. 9/8	Induction of primary germ layers	<i>Dan Kessler</i>
Wed. 9/10	Body plan formation: Gastrulation, germ layer formation and morphogenesis	<i>Peter Klein</i>
Mon. 9/15	Embryonic gene activation	<i>Matt Good</i>
Wed. 9/17	Left-right patterning	<i>Dan Kessler</i>
Mon. 9/22	Morphogens in patterning	<i>Mary Mullins</i>
Wed. 9/24	Journal club discussion-1	
Mon. 9/29	Mouse molecular genetic models and approaches	<i>Patrick Seale</i>
Wed. 10/1	X chromosome inactivation in development	<i>Montserrat Anguera</i>
Mon. 10/6	Single Molecule Imaging, Nuclear Organization and Transcription	<i>Mustafa Mir</i>
Wed. 10/8	Journal club discussion-2	
Mon. 10/13	Stem cells in tissue maintenance & regeneration	<i>Chris Lengner</i>
Wed. 10/15	Modeling human development and disease using iPS cells	<i>Wenli Yang</i>
Mon. 10/20	Stem cell niches	<i>Steve DiNardo</i>
Wed. 10/22	NO CLASS IRM SYMPOSIUM	
Fri. 10/24	Skeletal development and mechanical cues	<i>Joel Boerckel</i>
Mon. 10/27	Journal club discussion-3	
Wed. 10/29	Cytoskeleton, cell shape and embryogenesis	<i>Nicolas Plachta</i>

Mon. 11/3	(Tubulogenesis – tentative title)	<i>Meera Sundaram</i>
Wed. 11/5	Journal club discussion-3	
Mon. 11/10	Metabolic regulation of development	<i>Patrick Seale</i>
Wed. 11/12	Biological rhythms and development	<i>Juan Alvarez</i>
Mon. 11/17	Journal club discussion-5	
Wed. 11/19	Take home problem set will be sent out Retrotransposon reactivation in development and disease Hematopoietic stem cell formation and renewal	<i>Andrew Modzelewski</i>
Mon. 11/24		<i>Nancy Speck</i>
Wed. 11/26	NO CLASS	
Mon. 12/1	Journal club discussion-6	
Wed. 12/3	Take home problem set due Regeneration	<i>Faye Mourkioti</i>
Mon. 12/8	Evolutionary - Development	<i>Steve DiNardo</i>
Wed. 12/10	Journal club discussion -7	
Mon. 12/15	Review of problem set	

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Class Schedule:

BRB 1201
 3:30PM – 5PM on Mondays and
 Wednesdays (unless otherwise noted)

Students will have access to the canvas site. Please check on Canvas for changes/updates.

Course Website:

The class site on Canvas (canvas.upenn.edu) includes the course schedule, syllabus, faculty contact information, discussion papers for download (Files > Discussion papers), and a “Discussions” tab to submit your answers to questions (see below).

Journal Club Discussions:

Students should pair up, and choose one of the research papers for discussion. The papers are listed under Files > Discussion papers on the course website, and the syllabus indicates the class date for discussion. We will post a sign-up sheet for these Discussions.

The task you and your partner have is to lead a journal club-style discussion of the paper. You are responsible for providing background/context, presenting the key figures (not every figure, and not every panel), answering questions from your peers, encouraging their participation, and moderating a discussion of the work.

All students must read the paper carefully and submit answers to the following questions before class under the “Discussions” tab on the Canvas course site:

- 1. What conceptual issue lies at the heart of the work?**
- 2. What experiment produces the authors’ most convincing data? Why?**
- 3. What experiment is least convincing to you? Why?**
- 4. What hypothesis derived from this paper would you set out to test next? Can you propose a way you might test that hypothesis?**

Take home problem set:

Will be sent out on 11/19, and due on 12/03. Students should work in pairs to complete the questions.

Grading:

1. Journal club presentation (35%)
2. Class participation (35%)
 - Attendance
 - Engagement in class: asking questions, contributing to discussions,
 - Submitted comments/questions
3. Take home problem set (30%)