

# 2021 Embryology Course Lectures, Labs, Faculty, and Activities

(morning lectures are in Speck Auditorium; labs and evening lectures are 2<sup>nd</sup> floor Loeb)

<b>Module 1: Intro, Microscopy, Arthropods &amp; C. elegans (May 30-Jun 6)</b>		
Sunday May 23rd	7:00 pm Reception & Dinner – Location TBD <b>Carole LaBonne</b> , Northwestern; <b>David Sherwood</b> , Duke <i>Welcome and Course overview Bring your posters</i>	
Monday May 24th	Morning lecture (9am)	<b>MBL Staff</b> (HR, IT, security, education, housing, lab safety, animals)  <b>Lisa Cameron</b> , Duke, & <b>Michelle Itano (Zoom) &amp; Abhishek Kumar</b>
	Afternoon (1pm) & evening (7pm) labs	<i>Light and confocal microscopy:</i> <b>Lisa, David Matus, Reiko Tomizawa, John Young, and Sara Barger</b>
Tuesday May 25th	Morning lecture (9am)	<b>Carole and Dave</b> <i>Introduction to developmental biology and the course</i>
	Afternoon lab (1pm)	<i>Light and confocal microscopy:</i> <b>Lisa, David Matus, Reiko Tomizawa, John Young, and</b>
	Evening lab (7pm)	<b>Jon Henry</b> , Univ. Illinois, <i>tool making, light and confocal microscopy</i>  <b>Lisa Cameron and Michelle Itano:</b> <i>Image analysis, exporting movies, image manipulation etc.</i>
Wednesday May 26th	Morning lecture (9am)	<b>Melanie Worley</b> , Berkley, <i>Introduction to arthropods and developmental insights from single-cell analysis</i>
	Afternoon (1pm) & evening (7pm) labs	<i>Arthropods/flies</i>
Thursday May 27th	Morning lecture (9am)	<b>David Sherwood</b> Duke University, <i>Intro to C. elegans and cell matrix interactions</i>
	Afternoon (1pm) & evening (7pm) labs	<i>C. elegans</i>
Friday May 28th	Morning lecture (9am)	<b>Nipam Patel</b> , Univ of Chicago/MBL. <i>Arthropod embryonic body patterning &amp; butterfly wings</i>
	Afternoon (1pm) & evening (7pm) labs	<i>Arthropods/flies &amp; C. elegans</i>
Saturday May 29th	Morning lectures (9am)	<b>David Matus &amp; Shirin Bahmanyar</b> , Stony Brook and Yale University, <i>Cell cycle in development and nuclear envelop dynamics</i>
	Afternoon (1pm) & evening (7pm) labs	<i>Arthropods/flies &amp; C. elegans</i>
Sunday May 30th	Morning	Free time
	<b>Ethics discussion</b> (2:30-4:00pm), Speck	<b>Carole LaBonne &amp; Dave Sherwood</b>
	Afternoon (4 pm)	<i>Scavenger hunt and course dinner</i>
<i>Things to do this week: T-shirt design for class</i>		

<b>Module 1 continued</b>		
Monday May 31st	Morning lecture (9am)	<b>Sally Horne-Badovinac</b> , Univ of Chicago., <i>Planar cell polarity and cell-matrix interaction</i>
	afternoon (1pm) & evening (7pm) labs  7:00-9:00 p.m. <b>Zoom</b> Lecture	<i>Arthropods/flies &amp; C. elegans</i>  <b>Bob Goldstein</b> and <b>Jessica Feldman</b> , UNC and Stanford, <i>C. elegans early development and microtubule organizing centers</i>
Tuesday June 1st	Morning <b>Zoom</b> Lecture 9:00-10:30am	<b>Armin Moczek</b> , Indiana University, <i>How to design, fund, and implement meaningful K12 Science and Minority Outreach while trying to survive at an R1 institution</i>
	afternoon (1pm) lab	<i>Arthropods/flies &amp; C. elegans</i>
	7:00-9:00pm <b>Zoom</b> Lecture	<b>Bob Zeller</b> and <b>Billie Swalla</b> , San Diego State and Univ. of Washington, <i>Ascidian development and Chordate Evolution</i>
Wednesday June 2nd	Morning <b>Zoom</b> Lectures 9:00-11:00am	<b>Cyndi Bradham</b> ( <i>Kessel Lecture</i> ) and <b>Athula Wikramanayake</b> , Boston Univ., Univ. of Miami, <i>echinoderm development</i>
	Afternoon (1pm) & evening (7pm) labs	<i>Arthropods/flies &amp; C. elegans</i>
Thursday June 3rd	Morning <b>Zoom</b> lecture 9:00-11:00am	<b>Alejandro Sanchez Alvarado</b> and <b>Veronica Hinman</b> , Stowers Inst., and Carnegie Mellon <i>planaria &amp; echinoderm regeneration</i>
	Afternoon (1pm) & evening (7pm) labs	<i>Arthropods/flies &amp; C. elegans</i>
Friday June 4th	Morning <b>Zoom</b> lecture 9:00-11:00am	<b>Mansi Srivastava</b> ( <i>S. Meryl Rose Lecture</i> ) and <b>Rachel Smith-Bolton</b> , Harvard and Univ of Illinois, <i>acoelomorph development &amp; regeneration and Drosophila regeneration</i>
	Afternoon (1pm) & evening (7pm) labs	<i>Arthropods/flies &amp; C. elegans</i>
Saturday June 5th	Morning Discussion <b>Module 1 concepts</b> (9-11am Speck)	<i>Arthropods/flies &amp; C. elegans and Zoom lectures</i>
	Morning (9am) and afternoon (1pm) lab	<i>Arthropods/flies &amp; C. elegans</i>
	<b>Class presentations</b> (9pm location TBD)	<i>Show 'n Tell 1 / lab clean up</i>
Sunday June 6th	<i>Free time</i>	

## Module 2: Chicks & Frogs (June 7-June 20)

Monday June 7th	Morning lecture (9am)	<b>Tatjana Sauka-Spengler</b> , Univ. of Oxford, <i>Introduction to chick development</i>
	Afternoon (1pm) & evening (7pm) labs	<i>chick</i>
Tuesday June 8th	Morning lecture (9am)	<b>Carole LaBonne</b> , Northwestern Univ. <i>Introduction to Xenopus Development</i>
	Afternoon (1pm) & evening (7pm) labs	<i>Xenopus</i>
Wednesday June 9th	Morning lecture (9am)	<b>Peter Lwigale (Rafferty Lecture)</b> Rice University. <b>Jennifer Fish</b> , UMASS Lowell (zoom), <i>neural crest cells in corneal and craniofacial development</i>
	Afternoon (1pm) & evening (7pm) labs	<i>Chick, Xenopus</i>
Thursday June 10th	Morning lecture (9am)	<b>Chenbei Chang</b> , Univ Alabama and <b>Andrea Wills</b> , Washington University, <i>Morphogenesis and regeneration in Xenopus</i>
	Afternoon (1pm) & evening (7pm) labs	<i>Chick, Xenopus</i>
Friday June 11th	Morning <b>Zoom</b> lecture 9:00-11:00am	<b>Cliff Tabin</b> , ( <b>Saunders Lecture</b> ) Harvard
	Afternoon and Evening lab	<i>Chick, Xenopus</i>
Saturday June 12th	Morning lecture (9am)	<b>John Young</b> Simmons Univ. ? / <b>Marko Horb</b> MBL <i>CRISPR mutagenesis</i>
	Afternoon (1pm) & evening (7pm) labs	<i>Chick, Xenopus</i>
Sunday June 13th	<i>All day</i>	<i>Whale watching in Hyannis/Course dinner</i>

<b>Module 2 Continued</b>		
Monday June 14th	Morning <b>Zoom</b> lecture 9:00-11:00am	<b>Tatjana Piotrowski</b> , Stowers Inst., lateral line development in zebrafish <b>Elke Ober</b> , Univ. of Copenhagen, endoderm development
	Afternoon (1pm) & evening (7pm) labs	<i>Chick, Xenopus, zebrafish</i>
Tuesday June 15th	Morning (9am) & afternoon (1pm) labs	<i>Chick, Xenopus, zebrafish</i>
	Evening <b>Zoom</b> lecture 7:00-9:00pm	<b>Paul Trainor</b> , Stowers Institute, craniofacial development & disease <b>Jaime Rivera Perez</b> , Univ. Mass Worcester, Introduction to mouse development
Wednesday June 16th	Morning (9am) & afternoon (1pm) labs	<i>Chick, Xenopus, zebrafish</i>
	Evening <b>Zoom</b> lecture 7:00-9:00pm	<b>Crystal Rogers</b> UC Davis Axolotl <b>Otger Campás</b> , UC Santa Barbara <i>The mechanics of tissue morphogenesis</i>
Thursday June 17th	Morning (9am) & afternoon (1pm) labs	<i>Chick, Xenopus, zebrafish</i>
	Evening <b>Zoom</b> lecture 7:00-9:00pm	<b>Richard Harland</b> , UC Berkeley, axis formation & neural induction <b>Scott Fraser</b> , USC, <i>Imaging Development</i>
Friday June 18th	Evening <b>Zoom</b> lecture 7:00-9:00pm	<b>Andrew Gillis</b> , Univ. of Cambridge and <b>Roberto Mayor</b> UCL, <i>Sharks and Skates / Forces and Migration</i>
	Afternoon (1pm) & Evening (7pm) labs	<i>Chick, Xenopus, zebrafish</i>
Saturday June 19th	Morning Discussion <b>Module 1 concepts</b> (9-11am Speck)	<i>Chick, Xenopus, Zebrafish &amp; Zoom Lectures</i>
	Morning (9am) & afternoon (1pm) labs	<i>Chick, Xenopus, zebrafish</i>
	Class presentations (9pm)	<i>Show 'n Tell 2 / lab clean up</i>

## Module 3: Mollusks, Annelids, Cnidaria (June 21- June 30)

Sunday, June 20th	<i>morning off</i>	
	afternoon lab (1pm)	<i>Introduction to Hydra, Nematostella, Annelids, Cephalopods, nudibranchs, crepidula (snail)</i> <b>Celina Juliano, Leslie Babonis, Karen Echeverri, Duygu Ozpolat, Carrie Albertin, Karen Crawford, Dede Lyons, Jon Henry</b>
	<i>evening</i>	<i>course dinner-court yard</i>
Monday June 21st	Morning lecture (9am)	<b>Celina Juliano and Duygu Ozpolat</b> UC Davis and MBL, <i>Mechanisms of Development and Regeneration in Hydra and Germline Regeneration in Annelids</i>
	Afternoon (1pm) & Evening (7pm) labs	<i>Mollusks, Annelids and Cnidaria</i>
Tuesday June 22nd	Morning lecture (9am)	<b>Leslie Babonis and Dylan Faltine-Gonzalez</b> Cornell and Lehigh Univ, <i>Nematostella, neurons, and the origin of novel cell types</i>
	Afternoon (1pm) & Evening (7pm) labs	<i>Mollusks, Annelids and Cnidaria</i>
Wednesday June 23rd	Morning lecture (9am)	<b>Jon Henry and Dede Lyons</b> Univ. of Illinois & UC San Diego, <i>The Developmental Biology of Spiralian and Nudibranchs as models for neurogenesis, regeneration, and sequestration</i>
	Afternoon (1pm) & Evening (7pm) labs	<i>Mollusks, Annelids and Cnidaria</i>
Thursday June 24th	Morning lecture (9am)	<b>Carrie Albertin and Karen Crawford</b> MBL & Univ of Maryland, <i>Cephalopod development, evolution, and genomics &amp; Early development in cephalopods</i>
	Afternoon (1pm) & Evening (7pm) labs	<i>Mollusks, Annelids and Cnidaria</i>
Friday June 25th	Morning <b>Zoom</b> lecture	<b>Bill Browne and Neva Meyer</b> , University of Miami and Clark University, <i>Mnemiopsis as a model for functional assays in ctenophores &amp; Annelid development and nervous system</i>
	Afternoon (1pm) & Evening (7pm) labs	<i>Mollusks, Annelids and Cnidaria</i>
Saturday June 26th	Morning <b>Zoom</b> lecture (9am-12 Speck)	<b>Mike Levine-SDB Lecturer</b>
	Afternoon (1pm) & Evening (7pm) labs	<i>Mollusks, Annelids and Cnidaria</i>
Sunday June 27th	<i>Lab &amp; free time</i>	<i>course dinner-court yard</i>

## Module 3 continued

Monday June 28th	Morning (9am) and Afternoon (1pm) Labs	<i>Mollusks, Annelids and Cnidaria</i>
	<b>Class presentations</b> (9 pm Location TBD)	<i>Show 'n Tell 3</i>
Tuesday June 29th	Morning Discussion <b>Module 3 and Summary concepts</b> (10-noon Speck)	<i>Mollusks, Annelids and Cnidaria, and Zoom lectures</i>
	Afternoon lab (1pm)	<i>lab clean-up</i>
	Evening (time to be determined)	Course Banquet
Weds June 30th	Morning (by 10am)	<i>check-out and departure</i>