Module 1: Microscopy, Echinoderms, Tunicates and Other Basal Deuterostomes (May 30 - June 6)		
5/30/26 (Sat)	Reception & Dinner, 7pm 2nd Floor Loeb (Rm #256)	**Tatjana Piotrowski,** (Stowers Institute); **Athula Wikramanayake**, (Univ. Miami), *Welcome and Course overview.* ***Bring your posters***
5/31/26 (Sun)	Morning lecture (9:00am-11:00am Speck)	**Athula Wikramanayake**, (Univ. Miami) and **Nipam Patel** (MBL). *Intro to Developmental Biology and metazoan body plans*
	Afternoon lab (1PM)	*Marine Resource Center tour and tour of Loeb.* (1-3PM) **Jon Henry**, (MBL), **Margherita Perillo** (MBL), **Athula Wikramanayake** (UMiami), *Tool making & microinjection (use echinoderms to practice microinjections)* (3-6PM)
	Evening lab (7:30PM)	*Continue tool making & microinjection*
6/1/26 (Mon)	Morning lecture (9:00am-11:00am Speck)	**Lisa Cameron**, (Duke U.), **Paula Montero Llopis** (Harvard), **Praju Vikas Anekal (**Harvard). *Light and confocal microscopy*
	Afternoon lab (1pm)	**Lisa Cameron**, (Duke U.), **Paula Montero Llopis** (Harvard), **Praju Vikas Anekal (**Harvard). *Light and confocal microscopy*
	Evening lab (7:30pm)	**Lisa Cameron**, (Duke U.), **Paula Montero Llopis** (Harvard), **Praju Vikas Anekal (**Harvard). *Light and confocal microscopy*
6/2/26 (Tue)	Morning lecture (9:00am-11:00am Speck)	**Athula Wikramanayake,** (Univ. Miami), Introduction to e*chinoderms and early patterning* **Vanessa Barone** (Hopkins Marine Station, Stanford University), **Richard G. Kessel Lecture**. Introduction to sea stars and early patterning
	Afternoon & evening labs	*Echinoderms*
6/3/26 (Wed)	Morning lecture (9:00am-11:00am Speck)	**Mansi Srivastava, (**Harvard), *Acoel development & regeneration*
	Afternoon & evening labs	*Acoels, Echinoderms*
6/4/26 (Thu)	Morning lecture (9:00am-11:00am **Clapp**)	**Alejandro Sanchez Alvarado,** (Stowers Institute), *"Dissecting the biological complexity of animal regeneration"and "Understanding the sources of regenerative capacities in animals"*
	Afternoon & evening labs	*Planaria, acoels, echinoderms*
6/5/26 (Fri)	Morning lecture (9:00am-11:00am **Clapp)**	**Margherita Perillo,** (MBL)*,* **Ethel Browne Harvey Endowed Lectureship.** *Sea stars and sea cucumbers as models for organogenesis* **Greg Wray** (Duke). **Frank R. Lillie lecture**. Life (history) in the fast lane: evolution of rapid premetamorphic development in *Heliocidaris* sea urchins
	Afternoon tours Evening lab	*Planaria, Acoels, Echinoderms*
	1:30 pm- 2:15 pm, Tours	Group A: MRC Group B: Library
	2:15 pm- 3:00 pm, Tours	Group A: Library Group B: MRC
6/6/26 (Sat)	Location Candle House **8:30am- 12pm**	**Student Symposium**
	Afternoon & evening labs	*Planaria, acoels, echinoderms*
6/7/26 (Sun)	7:00pm	*Scavenger hunt and course dinner*
Things to do this week: T-shirt design for class, softball t-shirt, parade committee		
Module 2: Nematodes, Tardigrades, Ascidians (June 8-13)		
6/8/26 (Mon)	Morning lecture (9:00am-11:00am Speck)	**Dave Sherwood,** (Duke), *An introduction to C. elegans, and Basement membranes-a dynamic and adaptive scaffolding*
	Afternoon & evening labs	*C. elegans*
6/9/26 (Tue)	Morning lectures (9:00am-11:00am Speck)	**Geraldine Seydoux, (**Johns Hopkins/ HHMI), *Germ granules: form and function of biomolecular condensates*
	Afternoon lab	*C. elegans*
6/10/26 (Wed)	Morning lecture (9:00am-11:00am Speck)	**Bob Zeller,** (San Diego State Univ.), Introduction to ascidian development - sea squirts made easy*;* **Ed Munro**, (Univ. Chicago), *Dynamics of morphogenesis in ascidians*
	Afternoon & evening labs	*Ascidians, C. elegans*
6/11/26 (Thu)	Morning lecture (9:00am-11:00am Speck)	**Dan Dickinson** (UT Austin), *Establishing and remodeling cell polarity*
	Afternoon & evening lab	*Ascidians, C. elegans*
6/12/26 (Fri)	Morning lecture (9:00am-11:00am Speck)	**Bob Goldstein,** (UNC Chapel Hill), *Tardigrades!* **Ed Munro (**Univ Chicago) *Dynamics of morphogenesis in ascidians*
	Afternoon & evening labs,	*Ascidians, C. elegans, tardigrades*
6/13/26 (Sat)	Morning lecture (9:00am-11:00am Speck)	**Benito-Gutierrez, Elia.** (Genentech), *Amphioxus: The Thrilling Prologue to Vertebrate Development and Evolution; and Modularity and Heterochrony in Amphioxus: Shaping New Neural Territories in Chordate Evolution*
	Afternoon & evening labs	*Ascidians, C. elegans, tardigrades*

	Class presentations (9pm)	*Show 'n Tell 1; lab clean up*
6/14/26 (Sun)	*Free time*	
Module 3: Hans Laufer Arthropod module; Arthropods, Nematostella, Spiralians (June 15-20)		
6/15/26 (Mon)	Morning lecture (9:00am-11:00am Speck)	**Nipam Patel, (**Univ. Chicago/MBL), *Embryonic patterning of Drosophila and other arthropods*
	Afternoon & evening labs	*Arthropods. Drosophila embryogenesis.*
6/16/26 (Tue)	Morning lecture (9:00am-11:00am Speck)	**Melanie Worley**, (UVA) *Development and regeneration of imaginal discs in Drosophila*
	Afternoon & evening labs	*Arthropods.*
6/17/26 (Wed)	Morning lecture (9:00am-11:00am Speck)	**Todd Nystul** (UCSF). **Nancy S. Rafferty Lectureship.** *The Drosophila Ovary as a Model of Stem Cell Biology Within the Native in vivo Context* **David Stern** (Stowers Institute), *How Aphids Remote-Control Plants: Aphid effector proteins in plant gall induction*
	Afternoon & evening labs	*Arthropods*

6/18/26 (Thu)	Morning lecture (9:00am-11:00am Speck)	**Matt Gibson** (Stowers Institute)**,** *Development of the Starlet Sea Anemone, Nematostella vectensis*
	Afternoon & evening labs	*Nematostella, Arthropods*
6/19/26 (Fri)	Morning lecture (9:00am-11:00am Speck)	**Dede Lyons**, (Scripps Institution of Oceanography), Developmental Origins of Novelty in Molluscan Body-Plans.
	Afternoon & evening labs	*Spiralians, Arthropods, Nematostella.*
6/20/26 (Sat)	Morning lecture (9:00am-11:00am Speck)	**John Rubin** (documentary filmmaker, https://www.imdb.com/name/nm0999530/). HHMI Tangled Bank. **Viki Merrick** (Atlantic Public Media), **Ari Daniel Shapiro** (NPR). How to communicate science.
	Afternoon & evening labs	*Spiralians, Arthropods, Nematostella.*
6/21/26 (Sun)		*Free time*
Module 4: Fish and Frogs (June 22 - June 27) (Please note that there will be morning and evening labs, and afternoon lectures this week)		
6/22/26 (Mon)	Morning lab (8:30am)	*Zebrafish orientation and Zebrafish injections*
	Afternoon lecture (1:00-3:00pm, Speck) Lab: 4-6pm	**Tatjana Piotrowski,** (Stowers Institute), *Zebrafish intro; sensory lateral line development and regeneration*
	Evening lab (7:30-8:30pm)	*Zebrafish/ frog lab intro*
6/23/26 (Tue)	Morning lab (9 am)	*Zebrafish, Frogs*
	Afternoon lecture (1:00-3:00pm, Speck) Lab: 4-6pm	**John Wallingford** (Univ. of Texas, Austin), **John Saunders lecture**. Beatings will continue: specification, differentiation, and evolution of ciliated cells.
	Evening lab	*Zebrafish, Frogs*
6/24/26 (Wed)	Morning lab (9 am)	*Zebrafish, Frogs*
	Afternoon Lecture (1:00-3:00pm, Speck) Lab: 4-6pm	**Jamie Gagnon** (University of Utah). A CRISPR wrinkle in time. **Marina Venero-Galanternik** (University of Utah). *Zebrafish meningeal development*
	Evening lab	*Frogs, Zebrafish*
6/25/26 (Thu)	Morning lab (9 am)	*Frogs, Zebrafish*
	Afternoon lecture (1:00-3:00pm, Speck) Lab: 4-6pm	**Andrea Wills,** (Univ. Washington), *Regeneration and metabolism in Xenopus* **Shinuo Weng** (Johns Hopkins University), *May the Force Be with Frogs: From the Bottom Up*
	Evening lab	*Frogs, Zebrafish*
6/26/26 (Fri)	Morning lab (9 am) 10:30am	*Zebrafish, Frogs* *Facility tour* with Jon Henry. Meet in G10 in basement of Loeb.
	Afternoon lecture (1:00-3:00pm, Speck) Lab: 4-6pm	**Jamie Gagnon** (University of Utah). **S. Meryl Rose lectureship.** *A CRISPR wrinkle in time* **Andrew Gillis,** (MBL) *Skate development and evolution of the vertebrate skeleton*
	Evening lab	*Zebrafish, Frogs, Skates*
06/27/26 (Sat)	Morning lab (9 am)	*Zebrafish, Frogs, Skates*
	11am	*Fish room tour*
	Afternoon lecture 1:30pm Lab: 4:30pm -6pm	**Denise Montell** (UCSB)**. Katsuma and Jean Dan lectureship,** *RACing from Drosophila border cell migration to an enhanced cancer immunotherapy*
	Evening lab	*Zebrafish, Skates, Frogs*
	Class presentations 8pm	*Show 'n Tell 2; lab clean up*
06/28/26		*Whale watching trip to Hyannis*

(Sun)		
Module 5: Chicks and Mouse (June 29 – July 3)		
6/29/26 (Mon)	Morning lecture (9-11am, Speck)	**Tatjana Sauka-Spengler,** (Stowers Institute), *Introduction to chick development*
	Afternoon & evening labs	*Chick*
6/30/26 (Tue)	Morning lecture (9-11am, Speck)	**Olivier Pourquie** (Harvard and Brigham and Women's Hospital), *Laying down the body plan: lessons from the embryo*, and *Deconstructing and reconstructing the human musculo-skeletal system in vitro with pluripotent stem cells.*
	Afternoon & evening labs	*Chick, organoids*
7/1/26 (Wed)	Morning lecture (9-11am, Speck)	**Yuchuan Miao** (Johns Hopkins U.), *Deciphering developmental patterning with stem cell-based embryo models*
	Afternoon & evening labs	*Chick, organoids*
7/2/26 (Thu)	Morning lecture (9-11am, Speck)	**Peter Lwigale** (Rice University), *Neural crest cells in corneal development.* **Tatiana Solovieva** (Caltech), **Gauthier Toulouse** (Harvard), **Megan Rothstein** (Princeton).From Axis to Face to Heart: Developmental Patterning in the Chick Embryo.
	Afternoon & evening labs	*Chick, organoids*
7/3/26 (Fri)	Morning lecture (9-11am, Speck)	**Margarete Diaz Cuadros** (Harvard University). *Mechanisms regulating the speed of development across species* **Joel Rothman** (UCSB), *Cryptic plasticity: direct reprogramming of cell fate and lifespan in a deterministic animal*
	Afternoon & evening labs	*Chick, organoids*
7/4/26 (Sat)	July 4th Parade	*Free time, parade. softball game. Course BBQ next to white tent at 6pm and watch fireworks on beach.*
7/5/26 (Sun)	free	
Module 6: Cephalopods, Cnidarians, Ctenophores, Annelids (July 6- 8)		
7/6/26 (Mon)	Morning lecture (9-11am, Speck)	**Carrie Albertin** (MBL) *Introduction to cephalopod development*
	Afternoon	*Cephalopods*
	evening lab	*Cephalopods,* squid injections.
7/7/26 (Tue)	Morning lecture (9-11am, Speck)	**Bill Browne** (Univ. Miami.), *Introduction to ctenophore development* **Brady Weissbourd** (MIT) *A genetically tractable jellyfish for systems and evolutionary neuroscience.*
	Afternoon & evening labs	*Cnidarians (cephalopods)*
7/8/26 (Wed)	Morning lectures (9-11am, Speck)	**Ehab Abouheif** (Zheijian University, China)**.** The journey from MBL to establishing a new field of eco-evo-devo medicine.
	Class presentations, (8pm)	*Show 'n Tell 3*
7/9/26 (Thu)	Morning discussion (11am)	**Athula Wikramanayake,** (Univ. Miami) and **Tatjana Piotrowski** (Stowers Institute)
	Afternoon	*Lab clean-up*
	Evening (7:30pm)	*Course banquet and award ceremony*
7/10/26 (Fri)	Before 10:00am	*Departure*