CEBIMAR-INSTITUTO DE BIOCIENCIAS USP

HOME APPLICATION PROGRAM PROTOCOLS COURSE FILES

PAST COURSES

INSTRUCTORS

Alvaro Migotto CEBIMAR - USP

<u>André Morandini</u> ZOO - IB - USP

Augusto Flores CEBIMAR - USP

<u>Billie Swalla</u> <u>Friday Harbor Labs</u> <u>University of Washington</u>

Federico Brown ZOO - IB - USP

<u>Gisele Kawauchi</u> CEBIMAR - USP

Marcio Custodio FISIO - IB - USP

<u>Maria Byrne</u> <u>University of Sydney</u>

Renato Ventura UFRJ

LINKS

2015 LASDB MEETINGS (SANTOS)

CEBIMAR

INSTITUTO DE BIOCIENCIAS - USP

CIFONAUTA

PLANKTON CHRONICLES

CEBIMAR USDA









Course description:

Taking advantage of the great marine diversity found in São Sebastião, SP, Brazil; this annual course aims to attract graduate students and researchers interested in the study of embryos and larvae of distinct animal phyla. The participants will be immersed at CEBIMAR for two weeks exploring local diversity, and learning about tools or methods to carry experimental research with the available marine embryos and larvae. All observations and findings will be discussed in the context of life history theory, and up-to-date phylogenetical hypotheses. Participants will induce animals to spawn, fertilize their gametes, culture their embryos larvae, and will document stages of development in detail. In addition, plankton will be surveyed regularly to observe larval forms and further stages of development in other animals. This year, the CEMI course is organized in parallel and as a satellite event to the 2015 LASDB Meetings in Santos (http://lasdb2015.com).



APPLICATION INFO:

Total # of students: 12

Language: Official language is English, with occasional Portuguese

Registration Costs: R\$0 for USP students (alunos regulares) R\$50 for all other students (alunos especiais), but only after they have been accepted.

Application deadline: July 31st

more info...

CEBIMAR INFO:

The Center for Marine Biology (CEBIMar) is a specialized institute of the University of São Paulo (USP) devoted to research teaching and outreach in this field.

With ocean-front facilities, CEBIMar offers adequate infrastructure to meet such a demand. Among other facilities, our staff and visitors have access to laboratories with running sea water, tank rooms where living organisms can be maintained and manipulated, classrooms of different size, including a large auditorium, and a specalized library. There is also housing and a restaurant which can be used by visitors.

The Center was incorporated to the University of São Paulo (USP) in 1962, and, although managed by its own advisory board, is mostly maintained by the central university administration. This support ultimately assits research projects, outreach initiatives and a variety of courses, not only those under responsability of USP academics but also attending the demand of other higher education institutions.

CEMI Program 2015

Course activity:	L: Lecture			For instructors, schedule your activities and fix colors (either green or yellow):		Movable/exchangeable activitive would like to do but do not nec These can be accomodated after the contraction of the contracti	Movable/exchangeable activities (in green) are activities that you would like to do but do not necessarily have a fixed schedule. These can be accomodated after all other activities are fixed.
	LA: Lab Activity					Fixed activities (in yellow) are a the specified time.	Fixed activities (in yellow) are activities that need to be done at the specified time.
	C: Collecting trip						
	P: Personal time for students	P: Personal time for students to work on their species drawings/presentations/report	gs/presentations/report				
WEEK 1:							
	Fri (ALL INSTRUCTORS)	Sat (ALL INSTRUCTORS - MORNING, M. BYRNE & R. VENTURA)	Sun (M. BYRNE & R. VENTURA) (André arrives in the evening)	Mon (M. BYRNE & RENATO)	Tue (B. SWALLA) (María and Renato leave)	Wed (B. SWALLA)	Thurs (B. SWALLA & F. BROWN)
	23/10/2015	24/10/2015	25/10/2015	26/10/2015	27/10/2015	28/10/2015	29/10/2015
7:00		Breakfast (lan & Laura)	Breakfast (Vivian & Montserrat)	Breakfast (Vinicius & Ana)	Breakfast (Andressa & Licia)	Breakfast (Felipe & Rafael)	Breakfast (Carlos & Ian)
8:00							
00:6		L: Briefing and general information to the course, etc.: safety, location of all materials and reagents, general course organization, etc. (A. MIGOTTO, F. BROWN)	LA: Sea urchin fertilization (M. BYRNE, R. VENTURA)	C: Hemichordate collection (B. Swalla/A. Migotto) - low tide (0.0): 08:54	L: Hemichordate development and techniques (B. SWALLA)	L: Colonial ascidian development (F. Brown)	LA: Asexual development in cnidarians (A. MORANDINI)
10:00		L: Instructor presentations (5 minute short informal presentations to research areas of ALL INSTRUCTORS)	LA: Echinoderm practical session (M. BYRNE, R. VENTURA)	C: Hemichordate collection (B. Swalla/A. Migotto) - Iow tide (0.0): 08:54	LA: Echinoderm and/or L: Colonial ascidian Hemichordate practical session development (F. Brown) (B. SWALLA)	L: Colonial ascidian development (F. Brown)	LA: Asexual development in cnidarians (A. MORANDINI)
11:00		L: Overview Metazoan Diversity LA: Echinoderm practical and Phylogenetic Relationships session (M. BYRNE, R. (B. SWALLA)	LA: Echinoderm practical session (M. BYRNE, R. VENTURA)	LA: Echinoderm practical session (M. BYRNE, R. VENTURA)	L: Tunicate development and Evolution (B. SWALLA)	L: Colonial ascidian development (F. Brown)	LA: Asexual development in cnidarians (A. MORANDINI)
12:00		Lunch CARMELA	Lunch CARMELA	Lunch CEBIMAR	Lunch CEBIMar	Lunch CARMELA	Lunch CEBIMar
13:00	13:00 Bus leaves USP (São Paulo) at 13h sharp!!!!						
14:00		L: Echinoderm development (M. L: Echinoderm developm BYRNE, R. VENTURA) (M. BYRNE, R. VENTUR	L: Echinoderm development (M. BYRNE, R. VENTURA)	L: OPEN TALK for CEBIMAR: Impact of climate change stressors on development of makine inverts - Research Lecture (M. BYRNE)	LA: Techniques to study ascidian development (B. SWALLA)	LA: Ascidian fertilization demo (B. SWALLA) (Suggestions ascidian metamorphic competence or in situ hybridization)	L: OPEN TALK for CEBIMAR community: Tail/Tailess ascidians? Chordate Origins?(B. Swalla)
15:00	Santos PICK-UP - Bus leaves from Meeting venue (Parque Balneario Hotel)!	LA: Sea urchin fertilization (M. BYRNE, R. VENTURA)	L: Research Talk: One on the Hox, Nodal-BMP - Research Lecture (M. BYRNE)	LA: Echinoderm practical session (M. BYRNE, R. VENTURA)	LA: Ascidian fertilization demo (B. SWALLA) (Suggestions ascidian metamorphic competence or in situ hybridization)	L: Colonial ascidian development (F. Brown)	LA: Scyphozoa (and/or other cnidarians) gametes and fertilization (A. MORANDINI)
16:00		L: Echinoderm development (M. LA: Echinoderm practical BYRNE, R. VENTURA) session (M. BYRNE, R. VENTURA)	LA: Echinoderm practical session (M. BYRNE, R. VENTURA)	LA: Echinoderm practical session (M. BYRNE, R. VENTURA)	LA: Ascidian fertilization demo (B. SWALLA) (Suggestions ascidian metamorphic competence or in situ hybridization)	L: Colonial ascidian development (F. Brown)	LA: Scyphozoa (and/or other cnidarians) gametes and fertilization (A. MORANDINI)
17:00		LA: Sea urchin fertilization (M. BYRNE, R. VENTURA)	LA: Sea urchin fertilization (M. BYRNE, R. VENTURA)	. LA: Echinoderm practical session (M. BYRNE, R. VENTURA)	LA: Ascidian fertilization demo (B. SWALLA) (Suggestions ascidian metamorphic competence or in situ hybridization)	L: Colonial ascidian development (F. Brown)	LA: Scyphozoa (and/or other cnidarians) gametes and fertilization (A. MORANDINI)
18:00	18:00 Arrival at CEBIMAR	Dinner CARMELA	Pizza Social CARMELA!!	Dinner CARMELA	Dinner CARMELA	Dinner CARMELA	Pizza Social CARMELA

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2	19:00 DINNER CARMELA						
20:00		Chill out for students! Organizational time for ALL drawings/presentations/report instructors)	Pizza Social CARMELA!!	P: Student conversation with instructors (Animals of choice should be defined TONIGHT!!!!)	P: Personal time for students to work on their species drawings/presentations/report	P: Personal time for students to work on their species drawings/presentations/report	P: Personal time for students to work on their species drawings/presentations/report
21:00		P: Personal time for students to Pizza Social CARMELA!! Chill out for students! work on their species (Organizational time for ALL drawings/presentations/report instructors)	Pizza Social CARMELA!!	P: Student conversation with instructors (Animals of choice should be defined TONIGHT!!!)	P: Personal time for students to work on their species drawings/presentations/report	P: Personal time for students to work on their species drawings/presentations/report	P: Personal time for students to work on their species drawings/presentations/report
WEEK 2:							
	Sat (A. MORANDINI & A. MIGOTTO)(André leaves in the evening)	Sun (Marcio arrives to São Sebastião) (Billie leaves at 22h00 from GRU)	Mon (A. MIGOTTO & GISELLE) (FERIADO PARA FUNCIONARIOS CEBIMAR)	Tue (M. REIS)	Wed (A. FLORES)	Thurs (A. FLORES) (Marcio leaves in the afternoon)	Fri
	31/10/2015	1/11/2015	2/11/2015	3/11/2015	4/11/2015	5/11/2015	6/11/2015
00	7:00 Breakfast (Montserrate & Vinicius)	DAY OFF!	Breakfast (Ana & Andressa)	Breakfast (Licia & Felipe)	Breakfast (Rafael & Carlos)	Breakfast (lan & Laura)	Breakfast (Vivian & Montserrate)
8:00		DAY OFF!					
00	9:00 DAY OFF!	L: Sipuncula development (G. KAWAUCHI)	L: Porifera, development, Ilfe oycles, and diversity (M. REIS)	L: Diversity, life cycles, and development of marine crustaceans & Larval rhythms and dispersal potential (A, FLORES)	LA: Diel vertical migration in the São Sebastião Channel (A. PLORES)	P: Personal time for students to work on their species drawings/presentations/report	P: Personal time for students to work on their species drawings/presentations/report
00	10:00 DAY OFF!	LA: Techniques to study Mollusca development (G. KAWAUCHI); intro to practical session	LA: Porifera Practical session LA: (M. REIS); suggestion sponge the reaggregation? cell culture? (A.	Diel vertical migration in São Sebastião Channel FLORES)	LA: Diel vertical migration in the São Sebastião Channel (A. PLORES)	P: Personal time for students to work on their species drawings/presentations/report	P: Personal time for students to work on their species drawings/presentations/report
00	11:00 DAY OFF!	LA: Techniques to study Mollusca development (G. KAWAUCHI); intro to practical session	LA: Porifera Practical session (M. REIS)	LA: Diel vertical migration in the São Sebastião Channel (A. FLORES)	LA: Diel vertical migration in the São Sebastião Channel (A. PLORES)	P: Personal time for students to work on their species drawings/presentations/report	P: Personal time for students to work on their species drawings/presentations/report
8	12:00 Lunch CARMELA	DAY OFF!	Lunch CARMELA	Lunch CEBIMAR	Lunch CEBIMAR	Lunch CEBIMAR	Lunch CEBIMar
13:00		DAY OFF!					
00	14:00 DAY OFF!	LA: Spiralian development (Suggestions: Polychate fertilization; observation of limpet, gastropod, polychaete or sipunculan embryo or larvae (G. KAWAUCHI)	LA: Porifera Practical session (M. REIS)	LA: Diel vertical migration in the São Sebastião Channel (A. FLORES)	LA: Diel vertical migration in the São Sebastião Channel (A. FLORES)	P: Personal time for students to work on their species drawings/presentations/report	P: Personal time for students to work on their species drawings/presentations/report
00	15:00 DAY OFF!	LA: Spiralian development (Suggestions: Polychate fertilization; observation of limpet, gastropod, polychaete or sipunculan embryo or larvae (G. KAWAUCHI)	LA: Porifera Practical session (M. REIS)	LA: Diel vertical migration in the São Sebastião Channel (A. FLORES)	LA: Diel vertical migration in the São Sebastião Channel (A. FLORES)	P: Personal time for students to work on their species drawings/presentations/report	P: Personal time for students to work on their species drawings/presentations/report
0	16:00 DAY OFF!	LA: Spiralian development (Suggestions: Polychate fertilization; observation of limpet, gastropod, polychaete or sipunculan embryo or larvae (G. KAWAUCHI)	LA: Porifera Practical session (M. REIS)	LA: Diel vertical migration in the São Sebastião Channel (A. FLORES)	LA: Immunocytochemistry: Photo session (M. REIS & F. BROWN)	P: Personal time for students to work on their species drawings/presentations/report	P: Personal time for students to work on their species drawings/presentations/report

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P: Personal time for s work on their species drawings/presentation	Dinner CARMELA		P: Personal time for si work on their species drawings/presentation	P: Personal time for s' work on their species drawings/presentation
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LA: Immunocytochemistry: Photo session (M. REIS & F. BROWN)	Dinner CARMELA		P: Personal time for students P: Personal time for students to P: Personal time for students to students to to work on their species work on their species to work on their species work on their species drawings/presentations/report drawings/prese	P: Personal time for students P: Personal time for students to be nown to work on their species work on their species work on their species drawings/presentations/report drawings/presentations/report to work on their species work on their species to work on their species work on their species drawings/presentations/report drawings/presentations/presentatio
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LA: Immunocytochemistry: 1ary AB (M. REIS & F. BROWN)	Dinner CARMELA		Pizza Social CARMELA!!	Pizza Social CARMELA!!
LA: Spiralian development (Suggestions: Polychate fertilization; observation of limpet, gastropod, polychaete or sipunculan embryo or larvae (G. KAWAUCHI)	DAY OFF!	DAY OFF!	DAY OFF!	DAY OFF!
17:00 DAY OFF!	18:00 MAMUTES DINNER PIZZA ESFI DAY OFF!		20:00 P: Personal time for students to work on their species drawings/presentations/repo	21:00 P: Personal time for students to work on their species drawings/presentations/report
17:00	18:00	19:00	20:00	21:00