PROGRAM BOOK

Cephalopod International Advisory Council Conference 2018

Cephalopod Research Across Scales: From Molecules to Ecosystems

November 12-16, 2018
St. Petersburg, Florida, USA
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Welcome to the 2018 CIAC Conference

Hello, everyone!
I am thrilled to welcome you to St. Petersburg, Florida for the 2018 CIAC Conference on behalf of the Cephalopod International Advisory Council and Organizing Committee! We have been hard at work and are excited to share our city with you for this event. I would like to acknowledge the past CIAC conference coordinators for their advice and assistance along the way to building this fantastic week for you!

The theme for this year’s conference – *Cephalopod Research Across Scales- Molecules to Ecosystems* – includes all facets of the growing cephalopod research initiatives worldwide. It has been 30 years since the CIAC meeting was last held in the United States and I am honored to host this important gathering of researchers. This year’s program will have a variety of oral presentations, including two keynote talks: the opening by Dr. Alison Sweeney and the closing talk by Dr. Gretta Pecl, 124 posters, and we are introducing a new presentation platform with 16 Lightning Talks this year. Registrants will number more than 240 and come from 30 countries.

This conference is the perfect platform to welcome our early career scientists as well as catch up with seasoned veterans in cephalopod field. I hope this conference provides participants with new knowledge in our growing field as well and new connections for future collaborations while enjoying all that the surrounding area has to offer.

Happy conferencing!

Heather Judkins, PhD.
CIAC 2018 Conference Chair
University of St. Petersburg, FL
Welcome from the Chancellor of the University of South Florida
St. Petersburg

On behalf of the University of South Florida St. Petersburg, welcome to the 2018 CIAC Conference.

As a university that supports researchers engaged in significant, relevant work, we are pleased to join with so many distinguished scientists from around the world. Like many other scientists located within St. Petersburg’s Innovation District, we know you are here to present new ideas and discoveries, seek to understand, and in some cases, share your life’s work.

At USF St Petersburg, we absolutely value and support science and what you do as scientists. We believe in you. We believe in what you represent to a world seeking solutions to significant environmental problems that threaten our planet. Science is the base from which we educate, and we have incredible scientists and education happening here.

USF St. Petersburg is located in a thriving, vibrant green city and home to one of the largest concentrations of marine and ocean scientists in the southeastern U.S. Our blue economy helps define us as a community. As such, we value the groundbreaking work you do to advance our knowledge of cephalopods, ecology, and fisheries while working with us and others to take immediate action to reverse the effects of environmental degradation through research and action.

I invite you to spend time exploring our campus while you are here. Take a stroll along our waterfront. Grab a coffee at our University Student Center. And, most importantly, take a moment to interact with our students. I think you’ll find them interested and engaged in the important work you do. They are friendly and will welcome a conversation with you.

Have a wonderful conference and enjoy your time in the Sunshine City.

Regards,
Martin Tadlock
Regional Chancellor
USF St. Petersburg
Greetings:

On behalf of the citizens of the Sunshine City, welcome to the 2018 Cephalopod International Advisory Council Conference! Thank you to the sponsors, including our friends at USF St. Petersburg, for making this event possible.

In particular, I am pleased to welcome each of you to the City of St. Petersburg’s Innovation District, an environment consisting of healthcare, education, and research assets. We consider USFSP to be an anchor for this district, as well as a vital city partner as we plan our future.

St. Petersburg has been welcoming visitors to our city for more than a century. While visiting us, I hope you have an opportunity to take advantage of our vibrant downtown, arts and cultural amenities, and beautiful waterfront park system. You won’t be disappointed.

Have a terrific conference, and please visit us again soon. Sincerely,

Mayor Rick Kriseman
## Organizers and sponsors

### Organizers

**Conference Chair**  
Heather Judkins

**Conference Assistant**  
Brenna Meath

**Scientific Committee**  
Elaina Jorgensen  
Annie Lindgren  
Elizabeth Shea  
Michelle Staudinger  
Michael Vecchione

### Sponsors

Univeristy of South Florida St. Petersburg  
The Florida Aquarium  
College of Marine Science, Univeristy of South Florida  
Florida Insitute of Oceanography  
OPEN, University of South Florida St. Petersburg  
Fish and Wildlife Foundation of Florida  
Tampa Bay Estuary Program  
Visitstpeteclearwater.com

### University Support Team

Patrick Baxter  
Amy Harcar  
Helen Levine  
Amanda Post  
Paul Schulz  
Martin Tadlock  
Susan Toler  
Britani Williams

### Donations

Nicole Carr and Steve Coehn  
George and Beth Davis  
Jane Lucas  
Megan and John McCall  
Margaret Merlan  
Erin and Brendan O’Marra  
Clyde and Ingrid Roper  
Laurie and Terry Vaughn-Grantes  
Chris and Gary Wardlow
General information

Conference venue:
Hilton St. Petersburg Bayfront
333 1st Street South
St. Petersburg, FL 33701
Phone: 1-727- 894-5000

ATMs that accept international cards:
1. Bank of America Financial Center
   ATM: 24 hours

2. Suntrust Bank
   300 1st Ave South, St. Petersburg, FL
   ATM: 24 hours, Branch open Mon-Fri, 0900-1800

3. Wells Fargo Bank
   125 5th Street South, St. Petersburg, FL
   ATM: 24 hours

Postal Services:
United States Postal Service (St. Petersburg Post Office)
76 4th Street North, St. Petersburg, FL 33701
Hours: 0830-1700 M-F

Nearby Grocery Store:
Publix
250 3rd St S, St. Petersburg, FL 33701

Nearby Drugstore:
CVS
301 3rd St S, St. Petersburg, FL 33701
### Restaurants and bars near the Hilton Bayfront Hotel

<table>
<thead>
<tr>
<th>Map ID</th>
<th>Name / Address</th>
<th>Cost</th>
<th>Food Style</th>
</tr>
</thead>
</table>
| **A**  | Tangerine at the Bayfront Hilton  
333 1st St. S., St. Petersburg, FL 33701  
727-894-5000  
| **B**  | The Tavern at Bayboro  
120 6th Ave S, St. Petersburg, FL 33701  
727-821-1418  
http://www.thetavernatbayboro.com  
The Campus Grind (next door to The Tavern)  
727-823-5282  
http://thecampusgrind.com | $$ | American |
| **C**  | Gratzi Italian Grille  
211 2nd St. S., St. Petersburg, FL 33701  
727-623-9037  
http://gratzzigrille.com | $$-$$$ | Italian, Vegetarian friendly, Vegan options |
| **D**  | Ford’s Garage  
200 1st Ave S., St. Petersburg, FL 33701  
727-295-3673  
https://www.fordsgarageusa.com | $$-$$$ | American, Gastropub, Bar |
| **E**  | China Kitchen  
268 3rd St. S., St. Petersburg, FL 33701  
727-820-0889  
http://www.chinakitchen727.com | $ | Chinese, Asian |
| **F**  | The Hanger Restaurant & Flight Lounge  
540 1st St. SE, Albert Whitted Airport, 2nd Floor, St. Petersburg, FL 33701  
727-823-7767  
https://www.thehangarstpete.com | $$-$$$ | American, Bar, Vegetarian friendly |
| **G**  | Red Mesa Cantina  
128 3rd St. S., St. Petersburg, FL 33701  
727-896-8226  
https://www.redmesacantina.com | $$-$$$ | Mexican, Latin, Bar |
| **H**  | Starbucks  
333 1st St. S., St. Petersburg, FL 33701  
727-894-5000  
| **I**  | The Simple Greek  
312 3rd St. S., St. Petersburg, FL 33701  
727-592-4715  
https://thesimplegreek.com | $$-$$ | Greek, Vegetarian friendly |
| J | The Oyster Bar  
249 Central Ave., St. Petersburg, FL 33701  
727-897-9728  
https://oysterbarstpete.com | $$-$ $$ $$ | American, Seafood, Bar |
| K | Oak & Stone  
199 Central Ave, St. Petersburg, FL 33701  
727-565-4064  
https://www.oakandstone.com | $$-$ $$ $$ | American, Pizza, Bar |
| L | The Station House  
260 1st Ave S., St. Petersburg, FL 33701  
727-895-8260  
http://stationhousestpete.com | $$-$ $$ $$ | Spanish, Pub, Bar |
| M | Ichicoro Ana at Station House / St. Pete  
260 1st Ave S., ST. Petersburg, FL 33701  
727-300-0281  
https://www.ichicoroane.com | $$-$ $$ $$ | Japanese, Asian |
| N | The Lemon Grass  
310 Central Ave., St. Petersburg, FL 33701  
| O | Locale Market  
179 2nd Ave. N., St. Petersburg, FL 33701  
727-523-6300  
https://localegourmetmarket.com | $$-$ $$ $$ | American, Seafood, Vegetarian, Vegan |
| P | 2nd & Second 24-Hour Diner  
201 2nd Ave. N., St. Petersburg, FL 33701  
727-440-4700  
http://2ndandsecond.com | $$-$ $$ $$ | American, Breakfast Lunch Dinner |
| Q | Wooden Rooster  
104 2nd Ave NE, St. Petersburg, FL 33701  
727-822-7373  
http://thewoodenrooster.com | $$-$ $$ $$ | Café, American, Vegetarian friendly |
| R | BellaBrava  
204 Beach Dr. NE, St. Petersburg, FL 33701  
727-895-5515  
http://bellabrava.com | $$-$ $$ $$ | Italian, Vegetarian, Vegan options |
| S | Stillwater Tavern  
224 Beach Dr. NE, St. Petersburg, FL 33701  
727-350-1019  
http://stillwaterstavern.com | $$-$ $$ $$ | American, Vegan options, Bar |
| T | 400 Beach Seafood & Tap House  
400 Beach Dr. NE, St. Petersburg, FL 33701  
727-896-2400  
https://www.400beachseafood.com | $$-$ $$ $$ | Steakhouse, American, Seafood, Wine bar |
Map of local area: nearby restaurants and bars
Map of Conference Venue- Hilton Bayfront

Conference sessions and breakout rooms, Council meetings
Notes

Presentations

To allow the sessions to run smoothly, and in fairness to other speakers, all presentations are expected to adhere strictly to the time allocated (15 minutes). Speakers should designate 2-3 minutes for questions.

Speakers are asked to send their presentations to the conference Dropbox well in advance of their talks. The presentation laptop will be equipped with Windows and Microsoft PowerPoint.

Important: Please name your files: day-time-lastname-session (e.g., Monday-0945-Judkins-lifehistory). You will receive a link to upload your presentations to a Dropbox account. There will be a PC at the podium for all presentations. You will be able to check your presentation prior to your session at the computer stations at the registration table throughout the week. If there are problems uploading prior to the conference, you may bring your presentation to the registration table on a flashdrive to upload on the presentation set-up computers.

Posters

Posters will be displayed in the University of South Florida St. Petersburg University Student Center Ballrooms. Posters can be affixed between 1430-1630 on November 12 and any time after 0900 on Tuesday, Nov. 13th. The poster session will be held on November 13 between 1830-2030, when poster presenters are expected to be available to answer questions. Posters must be removed at 2030 (end of the poster session).

Internet access

Free WiFi access will be available at the workshop and symposium venues.

Social activities

Welcome Reception November 12, 1730-2030; buses leave at 1645
CIAC Group Photo November 13, 1700 (outside USFSP USC Building)
Poster Session November 13, 1730-2030
Field Trips November 14, various times
Lightning Talks November 15, 1725-1650
CIAC Celebration Dinner November 16, 1745-2200; buses leave at 1715
# Conference timetable

## Saturday, November 10

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>0730-1630</td>
<td>Workshop Check-In; Workshops (0830 start)</td>
</tr>
<tr>
<td>1000-1400</td>
<td>Outreach Event- “Exploring Creatures of the Deep: Squid and Octopus”</td>
</tr>
</tbody>
</table>

## Sunday, November 11

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>0830-1630</td>
<td>Workshops</td>
</tr>
<tr>
<td>1630-1930</td>
<td>Registration Check-In; Hilton</td>
</tr>
<tr>
<td>1900-</td>
<td>CIAC Council Meeting (USFSP STG 115)</td>
</tr>
</tbody>
</table>

## Monday, November 12

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800-1645</td>
<td>Welcome Address, Keynote Speaker, Alison Sweeney; Conference Sessions: Systematics and Biogeography; Fisheries Management</td>
</tr>
<tr>
<td>1730-2030</td>
<td>Welcome reception: The Florida Aquarium</td>
</tr>
</tbody>
</table>

## Tuesday, November 13

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800-1645</td>
<td>Conference Sessions: Life History, Reproduction, Culture and Welfare</td>
</tr>
<tr>
<td>1700</td>
<td>CIAC Group Photo; Outside USFSP USC Building</td>
</tr>
<tr>
<td>1730-2030</td>
<td>Poster Session: USFSP USC Ballrooms</td>
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</table>

## Wednesday, November 14

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>0715-</td>
<td>Field Trips: Swim with Manatees, Kayaking the Hillsborough River, Mote Marine Laboratory/St. Armands Circle, Ft. DeSoto Beach</td>
</tr>
<tr>
<td>1900-</td>
<td>CIAC Council Meeting</td>
</tr>
</tbody>
</table>

## Thursday, November 15

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800-1645</td>
<td>Conference Sessions: Genetics and Evolution, Behavior, Anthropogenic Effects</td>
</tr>
<tr>
<td>0900-1030</td>
<td>Breakout Session 1: Biodiversity and Taxonomy of Cephalopods from the Gulf of Mexico and Caribbean Sea; Room: HTC 2</td>
</tr>
<tr>
<td>1725-1850</td>
<td>Lightning Talks</td>
</tr>
<tr>
<td>1900-</td>
<td>CIAC Council Meeting</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>0800-0825</td>
<td>Keynote speaker: Gretta Pecl</td>
</tr>
<tr>
<td>0830-1645</td>
<td>Conference Sessions: Physiology</td>
</tr>
<tr>
<td></td>
<td>CIAC Conference Closing Remarks</td>
</tr>
<tr>
<td>0900-1030</td>
<td>Breakout Session 2: Biological Bases for Octopus Aquaculture (Sisal</td>
</tr>
<tr>
<td></td>
<td>Conference 2018); Room: HTC 2</td>
</tr>
<tr>
<td>1745-2200</td>
<td>CIAC Celebration Dinner: Gulfport Casino Ballroom</td>
</tr>
</tbody>
</table>
Pre-conference workshops

Before the conference, there will be five workshops (November 10-11). All will be held at the University of South Florida St. Petersburg and the USF College of Marine Science. These venues are two blocks from the conference hotel and walkable. See campus map on page 11.

**Workshop 1**
**Genetic Tools and Live Imaging in Cephalopods**
Organizer: Eric Edsinger

This 2-day workshop will cover 1) identifying genes of interest in annotated genomes (discussion and hands-on with computer software), 2) designing transgenic reporters, biosensors, and CRISPR-Cas9 guide RNAs (discussion and hands-on with computer software), 3) injection of mRNA/constructs/CRISPR-Cas9 in one or more cephalopod species (hands-on injection of pygmy squid and/or other species), 4) live imaging approaches for light-based genetic tools (discussion and hands-on live imaging of fluorescent dyes, proteins, and/or biosensors), and 5) applications of genomic resources and genetic tools to cephalopod biology, emerging genetic models, and other future prospects (discussions). The workshop will produce a number of embryos and hatchlings expressing injected mRNAs, transgenic constructs, or genome edited genes which could possibly lead to a co-authored publication.

**Workshop 2**
**Paralarval and juvenile cephalopods: an updated identification guide**
Organizers: Erica Vidal, Liz Shea, Heather Judkins

“The “Larval” and juvenile cephalopods: A manual for their identification”, was published in 1992 and is outdated, as several recent publications have broaden our knowledge of the taxonomic status of cephalopods early life stages. The provisional identification key provided in that manual has several problems and badly needs a revision. Thus, the goal of this workshop is to compile and synthesize existing taxonomic information to create an update identification guide of cephalopods early life stages. Currently, the identification of early stages of many species is problematic and any improvement in this regard will promote a better understanding of the life cycles and population dynamics of these species. This workshop also would be an excellent opportunity to disseminate knowledge on the identification of cephalopods early life stages among the participants with a “hands on” approach. The expected output form this workshop is creating a publication of an identification guide for paralarval and juvenile cephalopods.

**Workshop 3**
**Hard structures of cephalopods and their application in your field of study**
Organizers: Alexander I. Arkhipkin, Catalina Perales-Raya, Fedor Lischenko

For several decades, hard structures of cephalopod mollusks have been used as practical and reliable tools in a wide variety of studies. Nowadays the age, growth and maturity rates could be estimated using increments on statoliths, beaks or vestigial shells, taxonomic or even population affiliation of individual could be determined by the shape of hard structures. Moreover, hard structures alone could provide enough data to describe the animal's life cycle. At the moment the amount of information about species biology which could be obtained using hard structures, is
literally staggering. It is easy to get confused in such a variety of methods and approaches. To solve this problem, we are going to discuss at this working group the modern challenges of cephalopod’s hard structures use and the latest achievements in this sphere. In addition to that, hands-on course of hard structure application for ageing and taxonomic studies is planned. Expected product from discussion part of workshop is the article on modern methods of hard structures use, expected product form the second part of workshop - practical skills of age estimation and shape analysis obtained by participants.

**Workshop 4**  
The biogeochemical role of cephalopods in the world’s oceans  
Organizer: Henk-Jan Hoving

Cephalopods perform extensive vertical and horizontal migrations, they are key organisms in the oceanic food web as predators and prey, they have high growth and metabolic rates and they typically are monocyclic, which in combination with mating and spawning aggregations may result in mass mortality events. All these aspects of cephalopod behavior and life history suggest that they are significant components of the energy flow and biogeochemical cycle of the world oceans. This workshop aims to bring scientists together who have an interest in the role of cephalopods in ocean biogeochemistry. During this workshop we will discuss several topics related to energy transfer and biogeochemistry (e.g. migration, consumption, respiration and excretion, terminal spawning), and participants are invited to give a short presentation, followed by a discussion. This will form the basis for a peer reviewed review article on the biogeochemical role of cephalopods.

**Workshop 5**  
Cephalopod Science: the direction of future research and the relevance of new policies  
Organizers: Giovanna Ponte, Ian Gleadall, Graziano Fiorito

(1) A brainstorming session to identify likely avenues for novel ground-breaking research and their potential effects on and benefits to human society.

(2) A discussion on the changes in policy for, e.g. experimentation on (and fisheries of) cephalopods occurring in different regions of the world and the potential effects of these changes on cephalopod research in both global and local contexts.

(3) Preparations for a white paper to summarize and report on (1) and (2).
Conference Breakout Discussions

Breakout Session 0900~1030 Thursday Nov. 15, 2018
Biodiversity and Taxonomy of Cephalopods from the Gulf of Mexico and Caribbean Sea

A number of fisheries surveys have been conducted in the Gulf of Mexico (GoM) and Caribbean waters but certainly for cephalopods there seem to have been few surveys of littoral to sublittoral species, so the cephalopod fauna of this region is poorly known. Biogeographically, this is a very interesting and complex region that promises to yield interesting new findings concerning its cephalopod biodiversity. The highly destructive hurricane season of 2017 devastated many parts of the region, making it impractical to conduct a systematic collecting expedition (and since many animal communities will also be recovering from dramatic losses, such an expedition at the present time is ethically questionable). This breakout session will summarize current knowledge and recent findings on the diversity of cephalopods (particularly octopuses) in this region and discuss directions for future collecting, collaboration and research.

Programme (Chair: Ian G. Gleadall)

0900 Introduction: Outline of GoM and Caribbean cephalopod biodiversity
0910 Summary of the presentations at the Sisal Conference (Nov. 5, 2018).
0930 Discussion: Focus for future research effort to advance the field.
1000 Discussion: Future collecting in the GoM and Caribbean regions.
1025 Closing remarks

Breakout Session 0900~1030 Friday, Nov. 16, 2018
Biological Bases for Octopus Aquaculture (Sisal Conference 2018)

The life cycle of the common octopus was first completed artificially in Japan and reported in 1963. Since then, there has been an explosion both in the exploitation of natural octopus populations and in research into aquaculture techniques. Today, fisheries exploitation threatens to bring about the collapse of natural cephalopod populations, and there is an accelerating demand for aquaculture, but commercially successful large-scale aquaculture of octopuses has yet to be achieved. Success has been achieved recently for other organisms which previously had proved difficult, such as eel and tuna, both of which, like many octopus species of commercial interest, have complex developmental cycles involving prolonged planktonic larval stages. It can therefore be considered that it is only a matter of time before successful octopus aquaculture will be established. This breakout session will consider the present status of octopus aquaculture and identify what is required to achieve reliable, commercial success.

Programme (Chairs: Ian Gleadall and Carlos Rosas)

0900 Introduction: Aquaculture conference (Sisal, Mexico; Nov. 5 2018) outline.
0910 Summary of major advances in cephalopod aquaculture since CIAC2012
0920 Summary of the main problems obstructing the octopus aquaculture industry
0930 Discussion: Focus of future research effort to advance the field
1000 Discussion: Future international collaboration and information exchange
1025 Closing remarks
Keynote Speakers

Monday Keynote Speaker
Alison Sweeney

Alison Sweeney was initially trained in organismal biology at Illinois Wesleyan University. She then joined Sonke Johnsen’s organismal biophysics lab at Duke University, where she completed a Ph.D. thesis on the evolution of the lens proteins in squid. In her postdoctoral work in the Morse group at UCSB, she worked on camouflage and self-assembling optical devices in many species of midwater squid. As an associate professor in the Department of Physics & Astronomy at the University of Pennsylvania, her group is currently working on the physics of self-assembly of the S-crystallins and reflectin proteins that comprise these devices.

Friday Keynote Speaker
Gretta Pecl

Gretta Pecl is a Professor of marine ecology with broad interdisciplinary research interests and a passion for science engagement and communication with the public. Much of her current research centres around understanding climate change impacts in marine systems, and how our marine industries and communities may best adapt to these changes. Gretta has spent much of her career examining the life history, fisheries biology and ecology of inshore cephalopods and uses cephalopods as a focus in her climate change research. She the Director of the Centre for Marine Socioecology at the University of Tasmania, and is a Fulbright Fellow, an ARC future fellow, and the Editor in Chief of the international journal “Reviews in Fish Biology and Fisheries”.

## Conference Program

### Monday, November 12, 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800</td>
<td>Welcome addresses</td>
<td>Erica Vidal, CIAC President, Martin Tadlock, USFSP Chancellor, Heather Judkins, CIAC 2018 Chair, Alison Sweeney, Keynote Speaker</td>
</tr>
</tbody>
</table>

### Session 1: Systematics and Biogeography
Chair: Elaina Jorgensen

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>0845</td>
<td>Molecular systematics of the family Sepiidae</td>
<td>Nik Lupse, Mandy Reid, Tsunemi Kubodera, Morag Taite, Louise Allcock</td>
</tr>
<tr>
<td>0900</td>
<td>Cephalopod biodiversity of the Kermadec Islands: implications for conservation</td>
<td>Heather E. Braid, Kat S. R. Bolstad</td>
</tr>
<tr>
<td>0915</td>
<td>Spatio-temporal variation and abundance of the red octopus (Octopus maya in the northeast zone of the Campeche Bank</td>
<td>Otilio Avendaño, Iván Velázquez-Abunader, Paulina Guarneros-Narváez, Luis Ángeles-González, Ángel Guerra, Carlos Fernández-Jardón</td>
</tr>
<tr>
<td>0930</td>
<td>Loliginid squids in the coasts of Tabasco, Mexico</td>
<td>Juana Dominguez Lorenzo, José Iván Damas Payro, Leonardo García Hernández, Susana Camarillo Coop</td>
</tr>
<tr>
<td>0945</td>
<td>A revision of the Pacific Cranchiidae: Untangling a giant knot of squid</td>
<td>Aaron Boyd Evans</td>
</tr>
<tr>
<td>1000</td>
<td>Coffee break</td>
<td></td>
</tr>
<tr>
<td>1015</td>
<td>Temporal variation of statolith elements for Jumbo squid Dosidicus gigas off the Peruvian Exclusive Economic Zone</td>
<td>Guanyu Hu, Xinjun Chen</td>
</tr>
<tr>
<td>1030</td>
<td>A New Species of Sepia (Cephalopoda: Sepiidae) from Japan with a Note of Unusual Sexual Display</td>
<td>Tsunemi Kubodera, Kazuhiko Yamada, Takashi Okutani</td>
</tr>
<tr>
<td>1045</td>
<td>Offshore Influences on Inshore Squid: Linkages Between Water Mass Dynamics and Doryteuthis pealeii Distribution</td>
<td>Owen C. Nichols, James J. Bisagni</td>
</tr>
</tbody>
</table>
Ximena Orosco, Patricia Ayón
Cephalopod paralarvae in the Northern System of the Humboldt Current (NSHC)

C. Perales-Raya, A. Bartolomé, E. Hernández-Rodríguez
How old are giant squids? First approach to ageing Architeuthis beaks

James F. Peyla, Robert D. Podolsky
A Squid for All Salinities? Distribution of the Euryhaline Squid Lolliguncula brevis in South Carolina

Ricardo Pliego-Cárdenas, Frederick G. Hochberg, Unai Markaida, Verónica Castañeda- Fernández de Lara, Francisco J. García De León, Irene de los Ángeles Barriga-Sosa
Systematic position of Pygmy Octopus “Octopus” fitchi Berry 1953 and the larger striped octopus (Cephalopoda:Octopodidae)

Lunch
Chair: Uwe Piatkowski

Rui Rosa, Vasco Pissarra, José Xavier, Ian Gleadall, Alexey Golikov, Álvaro Roura, Heather Judkins, Uwe Piatkowski, Michael Vecchione, Roger Villanueva
Global patterns of coastal cephalopod richness: hotspots and latitudinal gradients

Morag Taite, Michael Vecchione, Sheena Fennell, Louise Allcock
Larval and juvenile cephalopods from the North Atlantic

Michael Vecchione
Vertical and small-scale distribution of cephalopods in the Charlie-Gibbs Fracture Zone of the Mid-Atlantic Ridge

Harvey Walsh, David Richardson, Leah Lewis, Liz Shea
Distribution and Abundance of Cephalopod Paralarvae on the Northeast US Shelf

Session 2: Fisheries, stock assessment and management

JM Gornall, MJ Roberts, WHH Sauer
Could possible environmentally driven changes in the South African Chokka squid spawning behaviour be affecting the sustainability of the fishery?

Samantha H. Cheng, Mark Gold, Dianna Porzio, Paul H. Barber
Genome-wide SNPs reveal complex fine-scale population structure in the California market squid fishery (Doryteuthis opalescens)
1500  Ángel F. González, Elsa García Mayoral, Álvaro Roura Labiaga
Ageing techniques and genetic studies: towards an improved management of squid populations

1515  **Coffee/Tea break**
Chair: Angel Gonzalez

1530  Lisa C. Hendrickson, Avijit Gangopadhyay
Boon or bust: oceanographic factors that influence Illex illecebrosus (Northern shortfin squid) abundance on the U.S. fishing grounds

1545  Ana Moreno, Fábio Pereira, Paulo Vasconcelos, Miguel B. Gaspar
Catches of Sepia officinalis in the small-scale cuttlefish trap fishery off the Algarve coast (southern Portugal)

1600  Yumeng Pang, Chih-Shin Chen, Yoko Iwata
Seasonal comparison of female reproductive traits in swordtip squid (Photololigo edulis) among different geographical populations

1615  Warwick Sauer
World Octopus Fisheries

1630  **End of session**

1640  **Buses to The Florida Aquarium**

1730-2030  **Welcome reception**

2030  **Buses back to the Hilton**
Session 3: Life history and role in the ecosystem
Chair: Annie Lindgren

0800  Morgane Bonade, Boudjema Imarazene, Laure Bonnaud-Ponticelli
Development of the dopaminergic system during embryogenesis in *Sepia officinalis* (Cephalopoda) and influence of light

0815  Sergio A. Carrasco, Christian M. Ibáñez, Andrea I. Varela, Javier Sellanes, Martin Thiel
Early life-history stages provide insights on cephalopod fauna inhabiting oceanic islands in the Juan Fernández and Desventuradas Ecoregion

0830  KSR Bolstad, MO Amsler, C De Broyer, M Komoda, J Miake, H Iwasaki
Live observations of deep-sea cephalopods in the Western Antarctic Peninsula

0845  Yves Cherel, Pierre Richard, Paco Bustamante
Use of compound specific isotope analysis of individual amino acids to infer trophic ecology of cephalopods

0900  Chun-I Chiang, Tin-Yam Chan, Chia-Hui Wang
Application of statolith barium isotopic marking technique and chemistry composition on the dispersal and migration of *Sepioteuthis lessoniana* in Taiwan

0915  Céline Zatylny-Gaudin, Valérie Cornet, Benoit Bernay, Erwan Corre, Gildas Le Corguille, Joël Henry
Cuttlefish egg: from formation to the embryo hatching.

0930  Angel Guerra, Jorge Hernández-Urcera, Manuel E. Garci, Angel F. Gonzalez
Identification and characterization of essential habitats for three cephalopod species in the Galician Atlantic Islands National Park

0945  Henk-Jan Hoving
How in situ observations advance our understanding of life cycles of deep living cephalopods

1000  Coffee break
Chair: Rui Rosa

What have we learned since 2011 about cephalopods of the northern Gulf of Mexico?
1030  Uwe Piatkowski, Mardik Leopold, Naomi Tuhuteru, Henk-Jan Hoving, Jerome Spitz
The Boreoatlantic armhook squid (*Gonatus fabricii*) is the essential food resource of male sperm whales in the northern Atlantic Ocean

1045  Graham Pierce, Natalie Ward, Peter Evans, Begña Santos
*Gonatus fabricii* and the North Sea sperm whale trap

1100  Guadalupe Bárcenas, Claudia Caamal-Monsreal, Luciana Guzella, Maite Mascaró, Manuel Mazón-Suástegui, Nicolás Ortiz, Alberto Olivares, Iker Uriarte, Carlos Rosas
What limits the thermal tolerance of octopus embryos? A study along of latitudinal gradient of some American species

1115  Masayuki Sawamura
Transition of food habit with increase in body size in Japanese flying squid *Todarodes pacificus* around Hokkaido, Japan.

1130  M. Staudinger, V. Hartigan, E. Jorgensen, H. Judkins, A. Lindgren, E. Shea, M. Vecchione
Ecological roles and trophic diversity of the cephalopod assemblage near Bear Seamount in the Northwest Atlantic Ocean

1145  Roger Villanueva, Montserrat Coll-Lladó, Oscar Escolar-Sánchez, Fernando Á. Fernández-Álvarez, Pilar Sánchez, Jim Swoger
Transitional characters to the benthic lifestyle in juvenile merobenthic octopuses

1200  Lunch
Chair: Graham Pierce

1330  Yoshiki Kato, Hideyuki Yamashita, Siri Hakala, Donald Kobayashi, Michael Seki
Long-term research data shows migration, habitat and lunar effect of *Ommastrephes bartramii*

1345  Carolina C. Araújo, Maria A. Gasalla
Biodiversity of paralarval cephalopod in the Southeastern Brazilian Bight: richness and spatial-temporal distribution

Session 4: Reproduction

1400  Lígia Haselmann Apostólico, José Eduardo Amoroso Rodriguez Marian
From sneaky to bully: ontogenetic mating tactics lead to ejaculate transition in dimorphic male squid

1415  Yoko Iwata, Noriyosi Sato, Takashi Kasugai, Yoshiro Watanabe, Eiji Fujiwara
Secret in female arms – how female inseminate her eggs with stored sperm
1430 **Jesse Kelly**
Inferred post-spawning reproductive system morphology in female *Octopoteuthis sicula* Rüppell, 1844 (Cephalopoda: Octopoteuthidae)

1445 **José Eduardo A. R. Marian, Lígia H. Apostólico, Luiza O. Saad, Renan L. S. Del Bel**
Revisiting the squid mating system

1500 **PW Shaw, NJ McKeown, I Skujina, WHH Sauer**
Mating tactics, male dimorphism, sperm deposition site and fertilisation patterns within broods of a loliginid squid (*Loligo reynaudii*)

1515 **Coffee/Tea break**
Chair: **Michelle Staudinger**

1530 **Rodrigo S. Martins, Ricardo de Camargo, Maria A. Gasalla**
Is the recruitment of the tropical arrow squid *Doryteuthis plei* linked to retention processes? A case study case off southeastern Brazil

1545 **Noriyosi Sato, Noritaka Hirohashi, Yoko Iwata**
Why do you have so many seminal receptacles? : The sperm storage pattern in the Japanese flying squid *Todarodes pacificus*

**Session 5: Culture and Welfare, Cephbase**

1600 **Penelope Bastos, Carlos Rosas, Pedro Gallardo, Felipe do Nascimento Vieira, Gabriel Braga, Carlos Peres, Luciana Guzella, Fernando D. Brignol, Débora M. Fracalossi**
Pelleted diet with thermal treatment of ingredients for *Octopus vulgaris* type II ongrowing: zootechnical performance and digestive enzymes

1615 **Jennifer Hammock**
The online biodiversity data landscape and what it means for CephBase

1630 **End of session**

1700 **CIAC Group Photo (outside USFSP University Student Center)**

1730-2030 **Poster Session; USFSP University Student Center Ballrooms**
### Wednesday, November 14, 2018

**Field Trips**

0715 All depart from the front of the Hilton Bayfront

- Swim with the Manatees Field Trip departure
- Kayaking the Hillsborough River departure
- Mote Marine Laboratory and St. Armands Circle departure
- Ft. Desoto Beach departure

1900- CIAC Council Meeting (HTC 1)

### Thursday, November 15, 2018

**Session 6: Genetics and Evolution**

Chair: Erica Vidal

0800 **Elena A. Ritschard, Robert R. Fitak, Oleg Simakov, Sönke Johnsen**
Genomic signatures of GPCR expansions reveal step-wise functional evolution of cephalopod sensory organs

0815 **Hannah Schmidbaur, Akane Kawaguchi, Jamie Foster, Elly Tanaka, Spencer Nyholm, Oleg Simakov**
Genome reorganization and the evolution of cephalopod novelties in the Hawaiian bobtail squid, *Euprymna scolopes*

0830 **Hannah Schmidbaur, Caroline B Albertin, Z. Yan Wang, Therese Mitros, Oleg Simakov, Clifton Ragsdale, Daniel Rokhsar**
Genomic “big bang”: Chromosomal-scale assemblies reveal fusion- and fission-rich history during cephalopod karyotype formation

0845 **Inger E. Winkelman, M. Thomas P. Gilbert**
A Molecular Search for the Giant Squid Continued: Going Nuclear

0900 **Yan Tang, Ran Xu, Xiaodong Zheng**
Phylogeny of Octopods in coastal waters of China by complete mitochondrial genomes and exploration of the optimal method for phylogenetic analysis

0915 **Caroline B Albertin, Z Yan Wang, Therese Mitros, Hannah Schmidbaur, Oleg Simakov, Daniel S Rokhsar, Clifton W Ragsdale**
Gene family expansions in the evolution of cephalopod novelty

0930 **Frank E. Anderson, Annie R. Lindgren**
Disentangling the decapodiforms: can currently available genome-scale data resolve squid and cuttlefish phylogeny?
0945  Alexander Arkhipkin  
Divergence and convergence in evolution of sensory organs in cephalopods and fish

1000  Coffee/Tea break  
Chair: Inger Winkelmann

1015  Vladimir Laptikhovsky, Svetlana Nikolaeva, Mikhail Rogov, Dirk Fuchs  
Reproduction of coleoid cephalopods from Paleozoic to Recent

1030  Mathieu D. M. Renard, Kirsten Peramba, Takeshi Kasugai, Masa-aki Yoshida, Eric Edsinger  
Establishing a novel model organism for cephalopods: Development of genetic tools in pygmy squids

Session 7: Behavior

1045  Roger Hanlon  
Rapid adaptive camouflage in cephalopods

1100  Jennifer KK Hofmeister, P Ed Parnell, Paul K Dayton, Shelby K Kawana, Benjamin J Walker, Cynthia A Catton, Ian Taniguchi, Derek Stein, Kathleen A Sowul, Laura Rogers-Bennett  
Stalking the stalkers: an integrative approach to understanding octopus movement and predatory response

1115  Eduardo Sampaio, Simon Gingins, Rui Rosa  
Decision-making, communication, and cognition in interspecific cooperative hunting between octopus (Octopus cyanea) and fishes.

1130  Kerry Perkins  
Effects of viewing conditions on camouflage in Sepia officinalis

1145  Caitlin O’Brien, Graziano Fiorito  
“Model” Behavior? Temperamental differences in Octopus vulgaris

1200  Lunch  
Chair: Roger Hanlon

1330  Jennifer Mather, Claudio Carere, Graziano Fiorito  
Octopus mirror recognition

1345  Ryuta Nakajima, Chikatoshi Sugimoto, Zen Amida, Yuzuru Ikeda  
Diversity in body pattern development within the species complex of juvenile Bigfin reef squid, Sepiothenhis lessoniana from Okinawa archipelagos Japan
Session 8: Anthropogenic Effects

1400  **Casey Zakroff, Aran Mooney**  
Stress responses and variability in hatchling squid, *Doryteuthis pealeii*, reared under acidification and warming

1415  **Vijai Dharmamony, Ben P. Harvey, Kunshan Gao**  
A meta-analysis of physiological responses of cephalopods to ocean acidification

1430  **Kirt Onthank**  
The One-Two Punch: A tale of CO2, temperature and octopus physiology

1445  **Alexey V. Golikov, Yves Cherel, Louise Allcock, Rui Rosa, Rushan M. Sabirov, Martin E. Blicher, José C. Xavier**  
Biodiversity, distribution and ecological role of cephalopods in the Arctic and Antarctic marine ecosystems under a changing ocean

1500  **J. M. Githaiga-Mwicigi**  
Which environmental variables have the most impact on South Africa’s squid fishery in a changing climate?

1515  **Coffee/Tea Break**  
Chair: **Mike Vecchione**

1530  **Thành Nguyễn, Paco Bustamante, Alain Manceau, Jerome Spitz, Nathalie Bodin, Yves Cherel, Thomas Lacoue-Labarthe**  
Validation of cephalopod beaks to monitor Hg in the Ocean

1545  **Françoise D. Lima, Tatiana S. Leite, Sergio M. Q. Lima, Sylvia Limi de Souza Medeiros**  
Global climate changes over time shaping the ecological niche of *Octopus insularis* Leite and Haimovici, 2008 in the Atlantic Ocean

1600  **Alexandra Lischka, Chris Pook, Kat Bolstad**  
Metals in the pelagic squid *Nototodarus sloanii* (Ommastrephidae) from the Chatham Rise, New Zealand

1615  **Yasunori Sakurai**  
Recent decline in winter stock of Japanese flying squid, *Todarodes pacificus* related to climate change during winter-spring

1630  **Wei Yu, Xinjun Chen**  
Ocean warming-induced range-shifting of potential habitat for jumbo flying squid *Dosidicus gigas* in the Southeast Pacific Ocean off Peru
Nefertiti Taydé Roldán-Wong, Karen A. Kidd, Bertha Patricia Ceballos-Vázquez, Marcial Arellano-Martínez
Is there a Risk to Humans from Consuming Octopus Species from Sites Polluted with Metals?

Michael O. Navarro, Wayne A. Palsson
Ocean warming along the coast of the Gulf of Alaska evidenced and tracked by a persistent range expansion of market squid, Doryteuthis opalescens

Session Ends

Lightning Talk Introduction
Chairs: Liz Shea and Louise Alcock

Kathleen Ritterbush, Nicholas Hebdon, Olivia Jenkins
The Quick and the Dead: Measuring the hydrodynamic cost of extinct ammonite shells

Chengyi Xu
Adaptive Infrared Camouflage Inspired by Cephalopods

Astrid Deryckere, Eve Seuntjens
How to expand your invertebrate brain: are stem cells key to solve the cephalopod enigma?

Nancy F Alvarez, Alfonso R Condal, Ivan Velazquez-Abunader, Pedro-Luis Ardisson
Chromatophores in Octopus vulgaris paralarvae from the eastern Campeche Bank: intraspecific variation in their spatial arrangement

Seonmi Jo, Seung-Hyun Jung, Ha Yeun Song, Young Se Hyun, Yu-Cheol Kim, Ilson Whang, Tae-Young Choi
Construction of the brain atlas in the long arm octopus, Octopus minor

Kieran Murphy, Gretta Pecl, Shane Richards, Jayson Semmens, Julia Blanchard
Cephalopod Community Trophic Ecology in Relation to Body-size in an Oceanic Ecosystem

J. Voight, J. Kurth, R. Strauss, J. Strugnell, L. Allcock
Clinal descent into the deep sea by octopuses of Graneledone

Giambattista Bello
Proposal for a protocol to document cephalopod new records

Christina L. Sagorny, Alexander Ziegler
A new species of dumbo octopod from the North Pacific
1815  
C. Allen Akselrud, Trevor A. Branch  
Valuing information for sustainable squid fisheries

1820  
Arieli Tristão Rézio, Antônio Olinto Ávila da Silva, Felipe Mendonça Pimenta, Ricardo de Camargo, Rodrigo Silvestre Martins  
Recruitment failure of the tropical arrow squid Doryteuthis plei linked to anomalous oceanographic conditions during the spawning season

1825  
Seung-Hyun Jung, Seonmi Jo, Yong-Hee Han, Kyoung-Bin Ryu, Sung-Jin Cho, Hye Suck An  
Octopus genome provides insights into evolution for physiological adaptations and heart development

1830  
Hanna Butler-Struben, Samantha Brophy, Nasira Johnson, Robyn Crook  
Measuring anesthesia effects on the central and peripheral nervous system of cephalopods

1835  
Zdeněk Lajbner, Tamar Gutnick, Takahiro Nishibayashi, Fabienne Ziadi, Keishu Asada, Teresa L. Iglesias, Jonathan Miller, Michael Kuba  
Captive breeding of the oval squid (Aori-ika; Sepioteuthis sp.)

1840  
Lele Xu, Daohai Chen, Yongqin Li, Liyun Wang, Yulin Sun, Jing Wen, Juan Zhao  
Can Sepia pharaonis be reared on sea roach, Ligia exotica, from the first day after hatching?

1845  
Jing Wen, Lara Tinacci, P.L. Acutis  
An insight into the Chinese traditional seafood market: Species characterization of cephalopod products by DNA barcoding and phylogenetic analysis

1850  
Lightning Talks end

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Friday, November 16, 2018

Session 9: Physiology  
Chair: Dick Young

0800  
Keynote Speaker: Gretta Pecl

0830  
Giovanna Ponte, Graziano Fiorito  
Octopamine in octopus brain

0845  
Xue Feng Wang, Jian Hua Li, Rui Jiang, Jing Yuan Lin, Bi Lin Lui  
Comparative growth increments of gladius surface and cross-sections to estimate Sthenoteuthis oualaniensis age
0900  **Pamela Imperadore, Graziano Fiorito**  
Imaging regeneration: exploring the unseen in the adult common octopus, *Octopus vulgaris*

0915  **Ying Li, Zi-hao Cao, Hai-feng Li, Hui-hui Liu, Zhen-ming Lū, Chang-wen Wu, Chang-feng Chi**  
Identification, Characterization, and Expression Analysis of a FMRFamide-Like Peptide Gene in the Common Chinese Cuttlefish (*Sepiella japonica*)

0930  **Paola Borgo De la Rosa**  
Embryonic Development of the Central Nervous System of Green Octopus *Octopus hubbsorum* (Berry, 1953)

0945  **F. Lishchenko, A. Bartolomé, A.V. Sykes, C. Perales-Raya**  
A novel approach to age estimation of *Sepia officinalis* (Linnaeus 1758)-analysis of beak microstructure

1000  **Coffee/Tea break**  
Chair: Janet Voight

1015  **Zhou Fang, Xinjun Chen, Hang Su, Kevin Staples, Yong Chen**  
Exploration of statolith shape variation in jumbo flying squid, *Dosidicus gigas*, based on wavelet analysis and machine learning methods for stock class

1030  **Matthew A. Birk, Brad A. Seibel**  
Do squids breathe through their skin?

1045  **Wen-Sung Chung, Nyoman Kurniawan, Justin Marshall**  
Unlocking the cephalopod brain

1100  **Luis Nahmad-Rohen, Misha Vorobyev**  
Behavioural Study of Contrast Sensitivity in Octopus: Evidence of Lateral Inhibition

1115  **Gabrielle Winters, Caleb Bostwick, Hannah Weber, Leonid Moroz**  
Molecular dissection of Octopus memory circuits- thinking outside of the skull

1130  **Ruth Styfhals, Giovanna Ponte, Oleg Simakov, Remo Sanges, Eve Seuntjens, Graziano Fiorito**  
Neuronal conversations – The brain of *Octopus vulgaris*

1145  **Sarah J. McAnulty, Spencer V. Nyholm**  
Catch and Release: differential hemocyte binding in the squid-vibrio symbiosis

1200  **Lunch**  
Chair: Roger Villaneuva

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**30**
1330 Meng-Wei Lin, Po-Hsuan Sung, Jiun-Hong Chen, Pung-Pung Hwang, Yung-Che Tseng
Comparative evaluations of acid/ammonium transport machineries in branchial epithelium of cephalopods

1345 Tyson MacCormack, Neal Callaghan, Simon Lamarre, Louise Tunnah, Juan Capaz, Antonio Sykes, William Driedzic
The cardiac and metabolic effects of taurine in the cuttlefish, Sepia officinalis

1400 Gabriela Rodríguez-Fuentes, Fernando Díaz, Claudia Caamal-Monsreal, Luisa Méndez-Can, Nelly Tremblay, Sadot Ramos-Rodríguez, Carlos Rosas, Karen Ortega-Ramírez
Ontogenetic changes of O. maya morphology, respiratory metabolism and antioxidant defense mechanisms

1415 Giovanna Ponte, Giuseppe Petrosino, Graziano Fiorito, Remo Sanges
Transposable elements in Octopus vulgaris neural transcriptome

1430 Stephanie Chancellor, Rachel Santymire, Eric Edsinger, Kirsten Peramba, David Scheel
Octopus Hormones: A New Noninvasive Technique to Measure Stress Hormones

1445 Giulia Di Cristina, Pamela Imperadore, Giovanna Ponte, Graziano Fiorito
Mapping putative nociceptors in Octopus vulgaris arm

1500 Cristopher Niell, Judit Pungor
Neural coding in the octopus visual system

1515 Coffee/Tea Break
Chair: Natalie Moltschaniwskyj

1530 Marta Solé, Marta Monge, Michel André, Carme Quero
Protein content of the statocyst endolymph in common cuttlefish (Sepia officinalis): an assessment of acoustic trauma after exposure to sound

1545 Ignacio Ruiz-Jarabo, Cristina Barragán-Méndez, Benjamín Costas, Ignacio Sobrino, Juan Miguel Mancera
Stress-related parameters in plasma and muscle of three species of octopus after fishing

1600 Conference Closing Ceremony
1645 Conference ends
1715 Buses to Conference Celebration
1745-2200 CIAC Conference Celebration (shuttle back to the Hilton at 2115 as needed)
Posters

Session: Anthropogenic Effects

P1 Matthew A. Birk, Erin L. McLean, Brad A. Seibel
What can squids tell us about marine animal sensitivity to ocean acidification?

P2 Adriana García-Rueda, Nelly Tremblay, Claudia Caamal-Monsreal, Nelli Rodríguez, Fernando Díaz, Carlos Rosas
Physiological and behavioral responses of Octopus maya juveniles to environmental temperature regimes

P3 Ian Hampton, Jean MW Githaiga-Mwicigi, Stephen J Lamberth, Carl van der Lingen, Grant Pitcher, Dawit Yemane, Michelle Pretorius
How do you identify marine fisheries most vulnerable to climate change? The squid resource and lessons from South Africa

P4 Vanessa M. Lopes, Pedro R. Costa, Rui Rosa
Cephalopods as vectors of harmful algal bloom toxins

P5 Guadalupe Bárcenas Pazos, Laura E. Ibarra García, José M. Mazón Suástegui, Gabriela Rodríguez Fuentes, Ariadna Sánchez, Nelly Tremblay, Carlos Rosas
Effect of temperature in growth and antioxidant response during embryonic development of Octopus bimaculoides

P6 Eduardo Sampaio, Catarina Santos, Érica Moura, Eve Otjacques, Marta Pimentel, Rui Rosa
Cognitive impairments in future oceans: the case of cephalopods and its potential universality

P7 Blake Spady, Sue-Ann Watson, Philip L Munday
The effects of elevated CO₂ on the behaviours and physiology of two cephalopod species

P8 Hideo Takahara, Hideaki Kidokoro, Hiroshi Kubota, Yasunori Sakurai
Effect of temperature on growth and sexual maturation in the young Japanese flying squid, Todarodes pacificus

Session: Behavior

P9 Gavan Cooke, Andrew Jackson
What can social humans tell us about social cuttlefish? Citizen science meets cephalopod behavioral ecology

P10 Robyn J. Crook
Behavioral and neurological effects of early life injury in the squid Euprymna scolopes
P11 Ryan Howard, Robyn Crook
The effects of injuries on associative learning in Euprymna scolopes under predation threat

P12 Sylvia Lima de Souza Medeiros, Sidarta Tollendal Gomes Ribeiro, Tatiana Silva Leite
Description of sleep and learning behavior in two octopus species: Octopus cf. vulgaris and Octopus insularis

P13 Eduardo Sampaio, Catarina Ramos, Bruna Bernardino, Maela Bleuven, Marta Augustin, Vanessa Madeira, Rui Rosa
Social learning in Sepia officinalis: Testing inhibition of predatory behavior and primed goal directed behavior

P14 Xiaodong Zheng, Jinhai Wang
An Octopus minor characterization of predation behavior adaptability with a novel signal display

Session: Conservation and Biodiversity
P15 Tatiana Silva Leite, Françoise Dantas de Lima, Sérgio Lima
A new species of pygmy octopus of the genus Paroctopus (Octopodidae) found in antropic debris in southeastern Brazil

Session: Culture and Welfare
P16 Keishu Asada, Tamar Gutnick, Takahiro Nishibayashi, Fabienne Ziadi, Zdenek Lajbner, Teresa Iglesias, Jonathan Miller, Michael Kuba
Improving keeping and welfare for captive Octopus cyanea trough environmental enrichment

P17 Cristina Barragán-Méndez, Ignacio Ruiz-Jarabo, Benjamín Costas, Juan Miguel Mancera, Ignacio Sobrino
Development of a system for the maintenance of octopus on board of oceanographic vessels: evaluation of the survival rates after bottom-trawling

P18 Adam Daw, Gregory J. Barord, Roger T. Hanlon
Post-mortem: The National Resource Center for Cephalopods (NRCC), 30 years of cephalopod aquaculture and research

P19 Jeffrey Jolly, Chikatoshi Sugimoto, Gustavo Sanchez, Oleg Simakov, Daniel Rokhsar
Towards a laboratory suited cephalopod: laboratory culture of Indo-Pacific Bobtail Squids

Session: Fisheries, stock assessment and management
P20 Otilio Avendaño, Iván Velázquez-Abunader, Ángel Guerra
Changes in catch trends and distribution type of the common octopus Octopus vulgaris in the continental shelf of the Yucatan Peninsula
P21  **Gregory J. Barord, Peter D. Ward**  
Development of the first, managed nautilus fishery to save Nautiluses

P22  **Vladimir Laptikhovsky, Christopher Barrett, Daniel Oesterwind**  
Summer-spawning *Loligo vulgaris* in the North Sea: the story of a disappeared stock or a reverse of reproductive patterns?

P23  **Adrian Núñez, Francisco Arreguín-Sanchéz, Iván Velázquez-Abunader, Juan Enrique Mendoza, Gustavo De la Cruz, Víctor Gómez**  
Evidencing hurricanes effect on octopus catches in the Campeche Bank, Mexico

Cephalopods in multispecies small-scale fisheries: Case study of the Canary Islands

P25  **Anne Marie Power, Mark Johnson, Louise Allcock, Graham Pierce, Cristina Pita, João Pereira, Sebastian Villasante, Ignacio Sobrino, Jean-Paul Robin, Sadie Davoren, Anne O’Leary**  
Cephs and Chefs - Octopus, squid, cuttlefish, sustainable fisheries and chefs

P26  **Luis Silva, Alejandro Terrón, Miguel Cojan, Javier Collado, Jorge Rey, José Antonio Canseco**  
Cuttlefish *Sepia officinalis* Linnaeus (1758) discard estimates from the main demersal fisheries operating in the Gulf of Cádiz (SW Spain)

P27  **Luis Silva, Sergio José, Arone Salença, Tagir Quibuana, Guadalupe Martín**  
Small scale fishery for *Sepioteuthis lessoniana* Férussac 1831 in Cabo Deldago, North Mozambique (Indian Ocean)

P28  **Mariana Zamora-Rios, Jorge López-Rocha, Carlos Rosas**  
Artificial shelters for reproduction of *Octopus maya* in the road to sustain the fishery

Session: Genetics and Evolution

P29  **Otilio Avendaño, Ángel Guerra, Iván Velázquez-Abunader, Carlos Fernández-Jardón, Silvia Salas, Miguel A. Cabrera-Vázquez**  
Biometric comparisons in the group "*Octopus vulgaris*” complex: Adaptive strategies of cosmopolitan populations

P30  **KSR Bolstad, HE Braid, JM Strugnell, AR Lindgren, A Lischka, T Kubodera, VL Laptikhovsky, A Roura Labiaga**  
A mitochondrial phylogeny of the family Onychoteuthidae Gray, 1847

P31  **Heather E. Braid, Kat S. R. Bolstad, Yves Cherel, Fernando Ángel Fernández-Alvarez, Heather Judkins, Tsunemi Kubodera, Saji Kumar, Alexandra Lischka, Michael Vecchione, Roger Villanueva**  
Molecular phylogenetic analysis of the squid family Histiooteuthidae (Mollusca, Cephalopoda)
P32  Tzu-Yun Ching, Kang-Ning Shen, Chih-Shin Chen, Chia-Hui Wang, Atauko Yamaguchi, Naoki Yagishita
Composite variations in genetic structure, life-history traits, and statolith morphology of Sepioteuthis lessoniana populations around Nagasaki prefecture

P33  Elsa García-Mayoral, Álvaro Roura, Ángel F. González
Molecular tools to improve the knowledge of loliginid paralarvae and their assessment

P34  Amy J.E. Healey, Niall J. McKeown, Warren M. Potts, Warwick H.H. Sauer, Paul W. Shaw
Understanding the evolutionary history of the Sepia officinalis species complex

P35  Oscar E. Juárez, Laura López-Galindo, Leonel Pérez, Fernando Díaz, Carlos Rosas, Clara Galindo-Sánchez
Effect of fast temperature shifts and prolonged heat exposure over the metabolic performance and gene expression of Octopus maya juveniles

P36  Oscar E. Juárez, Laura López-Galindo, Leonel Pérez, Carlos Rosas, Clara Galindo-Sánchez
Transcriptomic analysis of Octopus maya white bodies show sex-specific signaling processes during reproduction

P37  Veronique Merten, Thorsten Reusch, Oscar Puebla, Uwe Piatkowski, Till Bayer, Henk-Jan Hoving
Assessment of cephalopod biodiversity and distribution around the Cape Verde Archipelago using environmental DNA

P38  Liyun Wang, Lele Xu, Yongqin Li, Jing Wen, Yulin Sun, Juan Zhao, Daohai Chen
De novo assembly of cuttlefish (Sepiella japonica Sasaki) transcriptome during different embryogenesis period based on RNA-Seq data

P39  Inger E. Winkelmann
New frontiers: The potential applications of eDNA in cephalopod science

P40  Masa-aki Yoshida, Risa Ikai, Davin H. E. Setiamarga
Reacquisition of Argonaute outer shells on the octopus genetic background

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