



Cephalopod Science from Biology to Welfare

28 – 30 March 2017

CRETAquarium, Thalassocosmos

Hellenic Centre for Marine Research (HCMR), Heraklion, Crete (Greece)

Tuesday, March 28th

- 09:00 **Registration**
- 09:30 **Welcome and Introduction**
- 09:45 **Introductory lecture - Cephalopod science, next Challenges (I)**
- 10:20 **Rui ROSA (Portugal)** Global hotspots and coldspots of coastal cephalopod diversity
- 10:40 **Jennifer MATHER (Canada)** Variation within and between individuals in the 'fixed' action of the predator strike of the cuttlefish
- 11:00 **Daniel OSORIO (UK)** Variation and change in camouflage of the common cuttlefish (*Sepia officinalis*)
- 11:20 **Coffee break**
- 11:45 **Shuichi SHIGENO (Italy)** Octopus brain evolution in the pelagic, deep-sea, and social lifestyles: a signature for cerebral gyri expansion
- 12:05 **Letizia ZULLO (Italy)** Organization and function of elastic fibers in *Octopus vulgaris* arm muscles
- 12:25 **Vladimir LAPTIKHOVSKY (UK)** Habitat impact on cephalopod reproductive strategies
- 12:45 **Nicholas GLADMAN (UK)** The hydrodynamics of cuttlefish (*Sepia officinalis*) jet propulsion
- 13:10 **Lunch**
- 14:45 **COST Action FA1301: a short overview on activities (I)**
- 15:00 **Christopher BARRET (UK)** Distributions of squids on the shelf around the U.K. and some insights on population structures
- 15:20 **Tim WOLLESEN (Austria)** Cephalopods share a similar BMP signaling gene expression profile during dorsalventral body axis formation with chordates
- 15:40 **Eduardo ALMANSA (Spain)** Effect of different light conditions on growth and survival of *Octopus vulgaris* paralarvae reared in captivity
- 16:00 **Caitlin E. O'BRIEN (France)** Effects of Reproductive Stress on Offspring Behavior in the cuttlefish, *Sepia officinalis*
- 16:20 **Coffee break**
- 16:50 **Giambattista BELLO (Italy)** - The Mediterranean peoples' perception of the common octopus, *Octopus vulgaris*
- 17:10 **Cephalopod Research and the 3Rs (Replacement, Reduction and Refinement)**
P.L.R. Andrews & M.L. Begout "co-chairs"
- **Paul L. R. ANDREWS (UK, Italy)** – Introduction to 3Rs in relation to cephalopod research
 - **Marie-Laure BEGOUT (France)** – The use of the online Experimental Design Assistant in cephalopod research and its contribution to 3Rs
 - **Gavan COOKE (UK)** – Prospective severity assessment in cephalopods
 - **Facilitated Discussion:** Practical application of 3Rs to cephalopod research
- 18:45 **Poster Session – Welcome Refreshment**

End of Day 1



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Wednesday, March 29th

- 09:30 **Introductory lecture - Cephalopod science, next Challenges (II)**
- 10:05 **Ana TURCHETTI-MAIA (Israel)** *Octopus vulgaris* memory acquisition is mediated by a novel protein synthesis-independent long-term potentiation (LTP) that involves persistent self-activation of nitric oxide synthase (NOS)
- 10:25 **Ryuta NAKAJIMA (USA)** Ceph Art: how far can I take?
- 10:45 **Dambee KIM (UK)** The Cuttle Shuttle: Behavior and Learning in Predatory *Sepia officinalis* (Cephalopoda)
- 11:05 **Coffee break**
- 11:30 **Graham PIERCE (Spain)** Management options for cephalopod fisheries in Europe
- 11:50 **Oleg SIMAKOV (Austria)** Cephalopod genome evolution
- 12:10 **Inger WINKELMANN (Denmark)** A Continued Molecular Search for the Giant Squid: Going Nuclear
- 12:30 **Michael KUBA (Japan)** Identify me
- 12:50 **Paul L.R. ANDREWS (UK)** Can cephalopods vomit?
- 13:10 **Lunch**
- 14:30 **Pablo GARCÍA-FERNÁNDEZ (Spain)** Transcriptomic analysis of *Octopus vulgaris* paralarvae: identification of potential welfare biomarkers, a new tool to improve their culture
- 14:50 **Robyn CROOK (USA)** Identifying cephalopod 'pain' through measures of neural and behavioral plasticity after injury
- 15:10 **Manuel NANDE (Spain)** The mechanism of pouncing, drilling and devouring zooplanktonic preys by *Octopus vulgaris* paralarvae
- 15:30 **Stephanie BUSH (USA)** The striped pyjama squid, *Sepioloidea lineolata*, reared in captivity: welfare, behavior, and reproduction
- 15:50 **Fabio DE SIO (Germany)** Becoming a vertebrate. The comparative study of cephalopod brains and behaviors: between epistemology, ontology and ethics
- 16:10 **Coffee break**
- 16:45 **Jade SPENCE (UK)** Humane slaughter: principles and practice
- 17:15 **New direction in interdisciplinary cephalopod research: from practical to metaphysical and its social implication**

Ryuta Nakajima "Facilitator"

Panelists:

Fabio De Sio (Germany)
Fernanda Oyarzun (Chile)
Markus Schmidt (Austria)
Shuichi Shigeno (Italy)
Letizia Zullo (Italy)

- 18:45 **I love you more - cephalopod interface at Crete, a guided tour**

End of Day 2



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Thursday, March 30th

- 09:00 **Social Tour**
- 14:30 **Introductory lecture - Cephalopod science, next Challenges (III)**
- 15:05 **Erica A.G. VIDAL (Brazil)** Potential effects of climate change at population level during embryonic development of *Octopus vulgaris* Type II
- 15:25 **Frederike HANKE (DE)** Common cuttlefish (*Sepia officinalis*) show a saccadic movement strategy
- 15:45 **Tore KRISTIANSEN (Norway)** Welfare needs of cephalopods
- 16:05 **Coffee break**
- 16:30 **George KEMENES (UK)** Cephalopod Neurosciences: JZ Young 1985 revisited
- 16:55 **Pamela IMPERADORE (Italy)** Nerve degeneration and regeneration in the octopus: the case of the pallial nerve
- 17:15 **Eduardo SAMPAIO (PT)** Towards standardization on cephalopod research: a 'need' for the community and case-studies
- 17:35 **Rachel LONG (Madagascar)** From fisheries management to conservation: a role for periodic closures of fast reproducing species?
- 17:55 **Alexander ARKHIPKIN (Falkland Islands)** Coevolution in body coloration and camouflage in cephalopods and fish
- 18:15 **COST Action FA1301: a short overview on Short Term Scientific Missions and their outcomes**
- 18:35 **COST Action FA1301: a short overview on activities (II)**
- 19:00 **COST Action FA1301 - closed session**
- 20:00 **Social Dinner**
- End of Day 3**



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Poster Session (March 28)

Authors (first author listed)	Title
Nik Lupše	Cladistic analysis of cuttlefishes (family Sepiidae)
Penélope Bastos	Habitat and distribution of <i>Octopus cf. vulgaris</i> in shallow waters in a subtropical Island, southern Brasil
Elisa Jeanneht Armendáriz-Villegas	Is there any reason why octopuses go boring or not the shell of a bivalve?
Maritza García-Flores	Histological description of the reproductive system of female and male <i>Octopus hubbsorum</i>
Robyn J Crook	Natural injuries of cephalopods: their effects on diverse behaviors in the wild
Nawel Mezrai	Predator recognition in cuttlefish embryo
Caitlin E. O'Brien	Reproductive Effects of Maternal and Prenatal Stress in the Cuttlefish, <i>Sepia officinalis</i>
Nicolaos Fotiadis	Biological parameters and sources of variation characterising the population of <i>Todaropsis eblanae</i> in the eastern Ionian Sea
Eugenia Lefkakitou	Comparison of reproductive and feeding strategies of three cephalopod species in the Aegean Sea
Anastasiia Lishchenko	Size and weight of commander squid <i>Berriteuthis magister</i> in 2005 and 2016
Fedor Lishchenko	Statolith shape variability in <i>Berryteuthis magister</i>
Lee Mong-Fong	Novel perforation structures between nidamental glands and accessory nidamental glands of the mature female pharaoh cuttlefish, <i>Sepia pharaonis</i>
Catalina Perales-Raya	Comparative study of age estimation in wild and cultured <i>Octopus vulgaris</i> paralarvae. Effect of temperature and diet
Kerry Perkins	The public cephalopod: A review of public aquarium cephalopod collections
Katina Roumbedakis	Parasite fauna of post spawning female <i>Octopus maya</i> (Cephalopoda: Octopodidae) in the Yucatan Peninsula, Mexico
Nefertiti Taydé Roldán Wong	Bioaccumulation and biomagnification of metals in the octopus <i>Octopus hubbsorum</i> from the Santa Rosalia mining harbor, Gulf of California, México
Alexia Scaros	The embryonic olfactory system in the common cuttlefish <i>Sepia officinalis</i>
Astrid Deryckere	Analysis of stem cell markers in the adult <i>Octopus vulgaris</i> brain
Morag Taite	Larval and juvenile cephalopods from the North Atlantic