

FA1301 WG3 convene and contribute to MNS2015 main program with a dedicated symposium (June 15). A series of other contributions (posters and free oral presentations) are also provided during the main program.

12th June, Friday

CephsInAction meets MNS2015

Nautilus Hall

14:00-14:30 Presentation of COST ACTIONS
L. Della Corte, on behalf of COST Action CM1103
G. Fiorito, on behalf of COST Action FA1301

13th June, Saturday

Poster Session

Nautilus Hall

17.30 - 18.30

- A cordal, not ganglionic, pattern of cephalopod brain neurogenesis - **S. Shigeno (Japan)**
- Octopus pallial nerve regeneration - **G. Ponte (Italy)**
- Exploring nociception in *Octopus vulgaris* - **G. Di Cristina (Italy)**

14th June, Sunday

Poster Session

Nautilus Hall

17.45 - 18.45

- Concentration-dependent effects of ethanol on *C. elegans* behaviour equivalent to intoxicating blood alcohol concentrations in human - **L. Holden-Dye (UK)**
- FoxP in *Octopus vulgaris* - **G. Fiorito (Italy)**
- Gene expression profiles induced following learned and innate fear in the cephalopod mollusc *Octopus vulgaris* - **I. Zarrella (Italy)**

15th June, Monday

Joint Symposium with COST Action FA1301

CephsInAction meets MNS2015

Alvania Hall

11.30 - 13.15 **I. Kemenes & G. Fiorito**, coordinate and chair

- What does the future hold for invertebrate neuroscience? - **L. Holden-Dye (UK)**
- Conservation and convergence in the evolution of the octopus neural system mediating learning and memory - **T. Shomrat (Israel)**
- Identifying molecular and connectivity architecture shared in mammalian and octopus brains - **S. Shigeno (Japan)**
- Octopamine in Octopus brain: a long history of mapping a 'neglected' neuromodulator - **G. Ponte (Italy)**
- Why Motor Control in the Octopus is "Full of Surprises" - **B. Hochner (Israel)**

~Lunch~

Alvania Hall

17.15 - 19.00 Oral (free) Communications

- A two-neuron system for goal-directed decision-making in the defined feeding network of *Lymnaea stagnalis* - **G. Kemenes (UK)**
- Differential engagement of a pharyngeal circuit to suppress feeding during food deprivation - **L. Holden-Dye (UK)**

Astrea hall

- Evolutionary conserved mechanisms of associative learning in *Lymnaea* - **I. Kemenes (UK)**

16th June, Tuesday

COST Action FA1301 - WG3 Meeting

Alvania Hall

09.30 - 13.15 **Lindy Holden-Dye & Graziano Fiorito**
coordinators and chairs

- Perceptual laterality in cuttlefish - **C. Alves Jozet (France)**
- Of models and brains. Octopuses and brain science (ca 1950s-2000s) - **F. De Sio (Germany)**
- Mapping putative sensory nociceptive inputs in the suckers of *Octopus vulgaris* - **G. Di Cristina (Italy)**
- Nervous control in *Octopus vulgaris*; a physiologist point of view - **C. Di Cristo (Italy)**
- Is there a preference for symmetry in *Octopus vulgaris* - **F.D. Hanke (Germany)**
- Self-recognition mechanism between skin and suckers prevents octopus arms from interfering with each other - **N. Neshet (Israel)**

Scientific presentations (list in alphabetic order of presenters)

~Lunch~

Facilitated Discussion on:

- Anesthesia: cephalopods and invertebrates (including a report on the control of cardiac performance during anesthesia, the case of octopus);
- Research in Physiology and the requirements of the Directive 2010/63/EU;
- Humane killing;
- Effects of noise on the welfare of animals;
- Cephalopod neuroscience 30 years after J.Z. Young 1985;
- Update on the work from other CephsInAction WGs;
- Goals of WG3; contributions from WG4 and WG5

Meeting Ends



Working group 3

COST Action FA1301 Neurophysiology, Anaesthesia and Humane end-points

WG3 deals with the requirements of experimental procedures considered to potentially induce distress and painful experience to animals to fit with principles stated in Directive 2010/63/EU.

This WG will incorporate several members of the MC in close cooperation and interaction with experts from other disciplines and working on a variety of different taxa.

This Working Group integrates the following tasks:

- Task 1 – Evaluation of the Existent Protocols in Neurophysiology and Behavioural Pharmacology to verify Applicability and Standardize Methodology
- Task 2 – Promotion of the Research on the Effects of common Anesthetic Agents and Explore Alternatives
- Task 3 – Evaluation of Human-End-Points, Euthanasia Practices and Criteria for Death Confirmation
- Task 4 – Exploration of Non-Invasive Methods for Assessing Physiological status of the animals.

The main objectives of this WG are:

1. Review and evaluate protocols used up to now in neurophysiology and anaesthesia, analgesia, and euthanasia in cephalopods, the efficiency of those in different species, and possible similarities with vertebrates in effect. Verify their applicability, and refine them to minimise the 'stress' caused to animals. The focus will be on the most used cephalopods for research purposes and those which are cultivated in Europe (common octopus, European cuttlefish, squid), however, knowledge from other species will also be used.
2. Promote research on the effects of anaesthetics currently used, their mode of action and the physiological and behavioural consequences of these agents and how they are tolerated by different cephalopods and developmental stages. Explore alternatives.
3. Evaluate humane killing methods (e.g. overdosing on anaesthetics or freezing), humane-end-points, and criteria for death confirmation.
4. Explore non-invasive techniques to be applied in neurophysiology and anaesthesia.



CEPHSInACTION A NETWORK FOR IMPROVEMENT OF CEPHALOPOD WELFARE AND HUSBANDRY IN RESEARCH, AQUACULTURE AND FISHERIES

COST ACTION FA1301

CAGLIARI, ITALY

15-16 JUNE 2015

HOTEL FLAMINGO RESORT

WG3 CephInAction meets MNS

