



*14th International Congress on Invertebrate
Reproduction and Development*

Rhythms of Life and their Alterations

Italy, 2017

Napoli, August 29-30 – Firenze, September 1-2

SCIENTIFIC PROGRAM



Arrival Day

Afternoon

Napoli, August 28

18:30

Congress Center University Federico II of Napoli. Via Partenope, 36 - Napoli

Saletta meeting. Reception of participants, subscriptions and welcome drink party

Napoli, August 29

First Day

Morning

Congress Center University Federico II of Napoli. Via Partenope, 36 - Napoli

Aula Magna, Official plenary welcome

8:30 **Welcome**, Introduction to an unforgettable congress and short Instructions to survive in Italy by Valerio Zupo, chair ICIRD 2017

8:45 **Introductions by:** President Stazione Zoologica, Magnifico Rettore University of Napoli, Assessore Panini Comune Napoli, Presidente Consiglio Regionale Campania Rosa D'Amelio, Consigliere Flora Beneduce, Presidente Camera di Commercio Napoli, Presidente Giunta Regionale Campania Vincenzo De Luca, Direttore Generale Stazione Zoologica V. Saggiomo, Scientific Attaché of UK Italian Embassy R. Di Lauro

Aula Magna, Via Partenope, 36

Saletta "A", Via Partenope, 36

Session 1: Reproduction
Chair: M.C. Gambi

Session 2: Gamete Biology
Chair: L. Santella

9:15 AA Prudkovsky. REPRODUCTIVE STRATEGIES OF HYDROZOAN AND SCYPHOZOAN FROM THE WHITE SEA IN RELATION TO TEMPERATURE

EV Soldatenko, AA Petrov, AB Shatrov. SPERM MORPHOLOGY IN *HYGROPHILA* (GASTROPODA: PULMONATA)

9:40 M Mutalipassi, V Mazzella, A Macina, V Zupo. REPRODUCTION AND DEVELOPMENT OF TWO MODEL TUNICATES: COMPARATIVE OBSERVATIONS AND TESTS OF HYPOTHESES ON THEIR ECOTROPHIC ROLES

F Vasilev, N Limatola, DR Park, UH Kim, L Santella, JT Chun. DEPOLYMERIZATION OF THE ACTIN CYTOSKELETON INDUCES MOBILIZATION OF INTRACELLULAR Ca²⁺ IN STARFISH EGGS VIA PLC/InsP₃/InsP₃R PATHWAY

10:05	JK Keesing, J Short, MW Fraser, GA Kendrick, D McLean, M Byrne, PLA Erfteimeijer, K Mengersen and JA Stoddart. ENVIRONMENTAL WINDOWS FOR DREDGING INFORMED BY ANALYSIS OF TIMING OF REPRODUCTION IN MARINE INVERTEBRATES: AN EXAMPLE FROM WESTERN AUSTRALIA	MP Cadierno, L Saveanu, MS Dreon, PR Martin, H Heras. BIOSYNTHESIS IN THE ALBUMEN GLAND AS A LIMITING FACTOR FOR REPRODUCTIVE OUTPUT IN THE INVASIVE APPLE SNAIL <i>POMACEA CANALICULATA</i>
10:30	K Mezali and DL Soualili. REPRODUCTIVE BIOLOGY OF ASPIDOCHIROTIID HOLOTHURIANS (HOLOTHUROIDEA: ECHINODERMATA) IN THE SOUTHWESTERN MEDITERRANEAN SEA (ALGERIA)	N Limatola, F Vasilev, JT Chun, L Santella. STARFISH AND SEA URCHIN EGGS AT FERTILIZATION: A REVISITED PROCESS
10:55	SF Foo, M Byrne, C Styan, MC Gambi. THE SENSITIVITY OF THE EGG JELLY COAT TO OCEAN ACIDIFICATION DIFFERS BETWEEN VENT AND NON-VENT <i>ARBACIA LIXULA</i> SEA URCHINS	C Martino, R Chiarelli, C Costa, D Koop, R Scudiero, M Byrne, V Matranga, and MC Roccheri. GADOLINIUM TOXICITY ON SEA URCHIN EMBRYOS: COMPARISON AMONG PHYLOGENETICALLY DISTANT SPECIES AND FOCUS ON STRESS RESPONSE AND SKELETOGENESIS.
11:20	<i>Coffee break. Saletta meeting Aula Magna, Via Partenope, 36</i>	
11:50	Aula Magna. Plenary Session Keynote by Martin Chalfie, Nobel Laureate Introduced by: Jeffrey Ram Martin Chalfie. DETERMINING NEURONAL CELL FATE IN <i>CAENORHABDITIS ELEGANS</i>	
13:00	Lunch. Sala Poster University of Napoli. During the lunch posters will be available for discussions with authors	

Napoli, August 29	First Day	<i>Afternoon</i>
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Congress Center University Federico II of Napoli. Via Partenope, 36 - Napoli

	Aula Magna, Via Partenope, 36	Saletta "A", Via Partenope, 36
	Session 3: Early development and regeneration <i>Chair: E. Tosti</i>	Session 4: Evolution and Development <i>Chair: A. Di Cosmo</i>
14:00	E Geens, C Steuwe, R Jelier, L Schoofs, M Roeffaers, and L Temmerman. REPRODUCTIVE SUCCESS DESPITE YOLK-DEPRIVED EGGS	V Maselli, G Polese, A Di Cosmo. INVOLVEMENT OF CHEMICAL PERCEPTION IN CONTROL OF REPRODUCTION IN <i>OCTOPUS VULGARIS</i>
14:25	Pieter Van de Walle, Liesbet Wilberts, Liliane Schoofs, Liesbet Temmerman. VITELLOGENESIS AND STRESS RESISTANCE IN <i>C. ELEGANS</i> : A CENTRAL NEURONAL TRANSCRIPTION FACTOR IN CONTROL	TV Kuzmina, VV Malakhov. EVOLUTION OF BRACHIOPOD LIFE CYCLES
14:50	Y Lau, H Liang, X Li, SF Chan. MOLECULAR CHARACTERIZATION OF THE MOLT INHIBITING HORMONE GENE FROM THE BANANA SHRIMP <i>FENNEROPENAEUS MERGUIENSIS</i>	JK Keesing. REPRODUCTION, GROWTH AND MORTALITY OF <i>ARCHASTER ANGULATUS</i> : A SEA STAR WITH UNUSUAL AGGREGATIVE, SYNCHRONOUS PSEUDOCOPULATIVE PAIRING BEHAVIOUR
15:15	E Tosti, A Gallo, and R Boni. THE FERTILIZATION CURRENT IN THE ASCIDIAN <i>CIONA INTESTINALIS</i> : A DISCOVERY OF THE STAZIONE ZOOLOGICA OF NAPLES	
15:35	<i>Concluding remarks</i>	<i>Concluding remarks</i>

15:45	Poster session. Sala Poster University of Napoli. Refreshments will be available	
	Aula Magna , Via Partenope, 36	Saletta "A" , Via Partenope, 36
16:15	Group meetings on new project submissions for funding: topics will be communicated and completed on the fast train	Initialization of a perspective paper on model organisms to be completed on the train and submitted as ICIRD 2017 output
16:45	Stazione Zoologica Anton Dohrn. Sala Seminari Alison Paskins – Managing Editor Taylor & Francis Group Workshop: How to Get Published <i>Opened also to SZN PhD and post-doc fellowships</i>	
19:00	Meeting in Piazza Amedeo for quick tour of the city centre and movement to the historical centre for the scientific coffees	

Aula Magna University Federico II of Naples. Plenary Session

Symposium on Aging, Longevity, and Healthspan

Chair: Jeffrey Ram

INTRODUCTION TO THE SYMPOSIUM

8:30

Keynote: G Corbi, V Conti, A Filippelli, N Ferrara.

THE SIRTUIN ROLE IN LONGEVITY: FROM *DROSOPHILA* TO HUMANS

9:30

Coffee break. Saletta meeting Aula Magna

Aula Magna, Via Partenope, 36

Saletta "A", Via Partenope, 36

Session 5: Aging, longevity, and healthspan**Session 6: Ecosystem alterations and environmental influences***Chair: J. Ram**Chair: H. Laufer*

10:00

JL Dudycha, M S Holtel, T Agrelius. ASEXUALLY REPRODUCING INVERTEBRATES AS A MODEL SYSTEM FOR THE EPIGENETICS OF AGING

V Mazzella, M Mutalipassi and V Zupo. COMPARATIVE EFFECT OF FOUR BENTHIC DIATOMS TRIGGERING THE SEX REVERSAL OF THE SHRIMP HIPPOLYTE *INERMIS LEACH*

10:25

KE Gribble, MJ Bock, GC Jarvis. OFFSPRING AGING IS TRANSGENERATIONALLY DETERMINED BY MATERNAL AGE AND DIET

M Mutalipassi, V Mazzella, V Zupo. LIFE IN AN ACIDIFIED WORLD: VARIABLE EFFECTS OF BENTHIC DIATOMS ON THE SEX REVERSAL OF A SHRIMP

10:50

WR Jeffery. AN ADULT STEM CELL NICHE INVOLVED IN REGENERATION AND AGING OF ASCIDIAN *CIONA INTESTINALIS*

AG Boegehold, NS Johnson, Ram JL, DR Kashian. QUAGGA MUSSEL (*DREISSENA ROSTRIFORMIS BUGENSIS*) SPAWNING AND VELIGER MORTALITY IS INFLUENCED BY CYANOBACTERIA

11:15

DB Mark Welch, KE Gribble, M Bock, G Jarvis. COMPARATIVE BIOLOGY OF AGING IN *BRACHIONUS* ROTIFERS

DR Kashian, AG Boegehold, K Alame, NS Johnson, JL Ram. INHIBITION OF REPRODUCTION IN QUAGGA MUSSELS (*DREISSENA ROSTRIFORMIS BUGENSIS*) FROM CYANOBACTERIA EXPOSURE

11:40

L Penfield, AJ Bellantuono, DM Bridge, DE Martinez. THE TRANSCRIPTOME OF INDUCIBLE AGING IN *HYDRA OLIGACTIS*

V Zupo, M Mutalipassi, V Mazzella, Y Carotenuto, G Romano, L Porzio and P Fink. EFFECT OF CYANOBACTERIA ON VARIOUS MODEL INVERTEBRATES AND THEIR POSSIBLE BIOTECHNOLOGICAL VALUE TO CONTROL SALMON SEA LICES IN AQUACULTURE PRACTICES

12:05

Lunch. Saletta meeting Aula Magna

Napoli, August 30

Second Day

Afternoon

**Session 7: Aging, longevity, and healthspan
(continued)**

Chair: R. Di Lauro

Session 8: Environmental stressors and development

Chair: E. Tosti

13:10

R Sousa-Neves, T Pande, L Stevens, H Hu and CM Mizutani. A NOVEL PLATFORM FOR SINGLE CELLS ANALYSES OF AGING BRAINS REVEALS PATTERNS OF GENE ACTIVATION, INACTIVATION AND CELL DEATH IN *DROSOPHILA*

M Munari, A Devigili, G Dalle Palle, G Nicolussi, MG Marin. SUSCEPTIBILITY OF SEA URCHIN (*PARACENTROTUS LIVIDUS*) EARLY LIFE STAGES TO SEAWATER ACIDIFICATION AND EMERGING CONTAMINANTS: FIRST EVIDENCE OF PARENTAL EFFECTS

13:35

RJ Wessells and A Sujkowski. OCTOPAMINE DRIVES ENDURANCE ADAPTATIONS IN *DROSOPHILA*

H Laufer, M Chen, J Stuart, and A Provas. ALKYLPHENOLS ARE ENDOCRINE DISRUPTING POLLUTANTS IN MARINE ENVIRONMENTS AND THEIR EFFECTS ON LOBSTER SURVIVAL, DEVELOPMENT AND NUCLEAR RECEPTOR BINDING

14:00

M Kurkinen. Alzheimer dementia: Wo sind die Magischen Kugeln?

(Alzheimer dementia: Where are the magic bullets?)

A Gallo, R Boni, and E Tosti. REPROTOXICITY INDUCED BY CHEMO-PHYSICAL STRESSORS IN MARINE INVERTEBRATES

14:25

V Conti, G Corbi, V Manzo, T Iannaccone, N Ferrara, A Filippelli. REGULATION OF OXIDATIVE STRESS RESPONSE FROM BACTERIA TO HUMANS: FOCUS ON THE ANTIOXIDANTS SUPPLEMENTATION IN HUMANS

DI Brown. GONADAL COMPARTMENTALIZATION IN PROSOBRANCH-GASTROPOD MOLLUSCS: CORRELATION WITH SEXUALITY, SPERMATOGENESIS PATTERN, AND FERTILIZATION TYPE

14:50	Poster session, judging panel for poster, coffee break		
16:00	Group walking along the coastline of the Bay of Naples to Stazione Zoologica		
16:15	<table border="1"> <tr> <td style="background-color: #d9e1f2;">Stazione Zoologica Anton Dohrn. All the participants: excursion in the first World Zoological Station, Von Maree Hall, Library, services</td> <td style="background-color: #fff2cc;">Stazione Zoologica Anton Dohrn. Sala seminari. Session Strictly Reserved for the Congress Students and Stazione Zoologica PhD students. Chairs: Martin Chalfie, Nobel Laureate, Tim Hunt, Nobel Laureate. <i>"All the questions you ever wanted to ask a Nobel Laureate!"</i></td> </tr> </table>	Stazione Zoologica Anton Dohrn. All the participants: excursion in the first World Zoological Station, Von Maree Hall, Library, services	Stazione Zoologica Anton Dohrn. Sala seminari. Session Strictly Reserved for the Congress Students and Stazione Zoologica PhD students. Chairs: Martin Chalfie, Nobel Laureate, Tim Hunt, Nobel Laureate. <i>"All the questions you ever wanted to ask a Nobel Laureate!"</i>
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18:00	<i>Return to Hotels</i>		

Napoli, August 31	Third Day	<i>Morning</i>
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8:30 - 8:45	Meeting in Napoli, Central Station, Piazza Garibaldi, At the end of Platform 20
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Travel and Excursion *Napoli-Firenze fast train and Firenze excursions (During the transfer some scientific activities, completion of cooperative projects and preparation of perspective papers will be conducted)*

11:46	Arrival in Florence and start of city excursions for groups
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19:00	Meeting in piazza San Marco and transfer to city pubs in the historical centre for the Scientific coffees
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Aula Magna del Rettorato, Piazza San Marco, Firenze. Plenary Session

8:30 Introduction and Commemoration of Francesca Gherardi. Will contribute: Valerio Zupo (ICIRD 2017 Chair), Cristina Giachi (ViceSindaco Firenze), David Caramelli (Head of the Biology Department), Felicita Scapini, Alberto Ugolini, (University of Firenze), Marco Vannini and members of the Gherardi family

Aula Magna del Rettorato, Piazza San Marco, Firenze

Sala Strozzi, Via G. La Pira 4, Firenze

Session 9. Evolution and variation of sexual systems

Session 10: Reproduction in insects and molluscs

Chairs: J. Leonard and M.C. Lorenzi

Chair: K Murugan

9:00 CG Norton. ASSORTATIVE MATING, GENDER ROLES AND SPERM LONGEVITY IN THE HERMAPHRODITIC FRESHWATER SNAIL *PLANORBELLA TRIVOLVIS*

P Marciniak, A Urbański, M Szymczak, J Lubawy, J Pacholska-Bogalska, K Walkowiak-Nowicka, M Kuczer, G Rosiński. SHORT NEUROPEPTIDES ARE INVOLVED IN REGULATION OF REPRODUCTION IN BEETLES

9:25 JM Koene. FLEXIBLE MALE AND FEMALE MOTIVATION TO MATE IN A HERMAPHRODITIC SNAIL

AK Krishnan, Y. Xue, RA Schweickart, L Stevens, T Pande, H Hu, RS Neves, CM Mizutani. MULTIDIMENSIONAL ANALYSES OF COMPLEX CELL SYSTEMS USING GEOGRAPHIC INFORMATION SYSTEMS

9:50 C Gimond, A Vielle, C Braendle. CONSEQUENCES OF MATING SYSTEM ON SPERM SIZE EVOLUTION IN *CAENORHABDITIS* NEMATODES

AN Hodgson, I Micklem, J Radloff, L Claassens. *MYTILUS GALLOPROVINCIALIS* (BIVALVIA), A SUCCESSFUL INVADER OF A WARM TEMPERATE SOUTH AFRICAN ESTUARINE EMBAYMENT

10:15	G Zuco, A Pires. NEURONAL REPROGRAMMING OF SEX DETERMINATION IN A NEMATODE	K Murugan, U Suresh, R Rajaganesh, J Hwang, C Panneerselvam, G Benelli, M Nicoletti, R Aruliah. CIGARETTE WASTE-MEDIATED SYNTHESIS OF NANOPARTICLES HIGHLY TOXIC TO <i>PLASMODIUM FALCIPARUM</i> AND ITS VECTOR <i>ANOPHELES STEPHENSI</i> , WITH LITTLE NON-TARGET EFFECTS ON PREDATORY COPEPODS
10:40	<i>Coffee break and poster session. Rectorate Chiostro</i>	
	Aula Magna del Rettorato, Piazza San Marco, Firenze	Sala Strozzi, Via G. La Pira 4, Firenze
	Session 9 (continued). Evolution and variation of sexual systems <i>Chairs: J. Leonard and M.C. Lorenzi</i>	Session 11: Crustacean Development <i>Chair: Eliahu Aflalo</i>
11:10	L Picchi, C Ricci-Bonot, MC Lorenzi. RECIPROCAL EGG TRADING IN A SIMULTANEOUS HERMAPHRODITE	E Legrand, TB Schock, JS Chung. INSIGHTS INTO THE MOLTING PROCESS IN <i>CALLINECTES SAPIDUS</i> FROM METABOLOMIC AND TRANSCRIPTOMIC ANALYSIS
11:35	C Benvenuto, SC Weeks. HERMAPHRODITISM AND DIOECY IN CRUSTACEANS: EVOLUTIONARY TRANSITIONS AND ECOLOGICAL CORRELATES	F Scapini. BENEFITS AND RISKS OF DIRECT DEVELOPMENT IN PERACARID CRUSTACEANS
12:00	C Ewers-Saucedo. THE EVOLUTION OF ANDRODIOECY IN AN EPIZOIC BARNACLE: MATING SYSTEM, LIFE HISTORY AND SEX ALLOCATION	N Shpak, R Manor, L Katzir, O Mentel, ED Aflalo, A Sagi. IN-VIVORNAI MANIPULATION OF THE INSULIN-LIKE ANDROGENIC HORMONE IN CRUSTACEANS: DOUBLE-STRANDED RNA LENGTH DEPENDENCY

12:25	MC Lorenzi, L Picchi. THE TRANSITION BETWEEN HERMAPHRODITISM AND SEPARATE SEXES IN <i>OPHRYOTROCHA</i> WORMS	S Gambineri, C Rossano, F Scapini. CIRCADIAN VARIATION OF SCOTOTACTIC ORIENTATION IN <i>TALITRUS SALTATOR</i> AND <i>ORCHESTIA GAMMARELLUS</i>
12:50	JL Leonard. THE EVOLUTION OF SEXUAL SYSTEMS IN ANIMALS	C Rossano, F Scapini. LOCOMOTOR ACTIVITY RHYTHM VARIATION AS RESPONSE TO ENVIRONMENTAL STRESSORS IN TALITRIDS

13:15 **Lunch.** Rectorate Chiostro. During the lunch posters will be available for discussions with authors

Firenze, September 1	Fourth Day	<i>Afternoon</i>
	Aula Magna del Rettorato, Piazza San Marco, Firenze Presidential symposium. Konopka Memorial symposium: Circadian and other clock mechanisms <i>Chair: Jeffrey Ram</i>	Sala Strozzi, Via G. La Pira 4, Firenze Session 12: Rhythms and paths in cephalopod molluscs Chair: G. Fiorito
14:15	A remembrance of Ronald Konopka, discoverer of the per circadian clock gene	
14:30	PE Hardin, K Gunawardhana, T Liu. USING <i>DROSOPHILA</i> AS A MODEL TO DEFINE MOLECULAR AND CELLULAR MECHANISMS UNDERLYING CLOCK CELL DEVELOPMENT AND INITIATION OF CIRCADIAN CLOCK FUNCTION	Scientific Contents to be communicated

14:55	A Sehgal, AF Barber, A King. CIRCADIAN CIRCUITS UNDERLYING BEHAVIOR AND PHYSIOLOGY IN <i>DROSOPHILA</i>	
15:20	S Golden. REGULATION OF THE CIRCADIAN PROGRAM IN CYANOBACTERIA	
15:45	CP Kyriacou. NON-CIRCADIAN CLOCKS	
	Aula Magna del Rettorato, Piazza San Marco, Firenze	Rectorate Chiostro
16:15	ICIRD Business Meeting	Poster final look and removal. Refreshments will be available
16:45	Transfer to the Natural Museum "La Specola" and visit to the largest collection of anatomical waxes in Europe	
19:00	Meeting in Piazza Marco Polo and departure for the Conference Banquet: Ristorante La Sosta del Gusto. Via Santa Brigida, 11. Castello del Trebbio. Pontassieve (FI) (Reservation needed: please contact the ICIRD 2017 helpdesk	

Salone dei 500. Palazzo Vecchio, Firenze

Keynote by Tim Hunt, Nobel Laureate. Introduction by V. Zupo

9:30

Tim Hunt. POINTS OF NO RETURN: HOW CELLS DIVIDE

11:00

Ceremony of welcome headed by the city head of Firenze

11:30

Brunch. Refreshment hall

Special Plenary Symposium: Crustacean reproduction

Chair: Amir Sagi

13:00

A Borchel, and F Nilsen. CHARACTERIZATION OF GENES INVOLVED IN THE MALE REPRODUCTIVE SYSTEM OF SALMON LOUSE (*LEPEOPHTHEIRUS SALMONIS*)

13:30

FH Li, SH Li, Y Yu, JH Xiang. PROGRESS IN STUDYING ON THE SEX DETERMINATION AND SEXUAL DIFFERENTIATION IN PENAEID SHRIMP

14:00

PT Jothy, RR Kannan, T Subramoniam. HEPATOPANCREAS AS THE SOURCE OF LIPID PRECURSORS FOR YOLK FORMATION AND CUTICLE SYNTHESIS IN THE INTERTIDAL MOLE CRAB, *EMERITA ASIATICA* (MILNE EDWARDS)

14:30

V Zupo, M Mutalipassi, V Mazzella, N Bohni, E von Elert and K Gademann. EFFECT OF DIATOM-PRODUCED APOPTOGENIC COMPOUNDS ON THE DEVELOPMENT OF THE SHRIMP *HIPPOLYTE INERMIS*: A MULTI-ANNUAL COMPARISON

15:00

Concluding Remarks for the congress and good bye to the 15th ICIRD

15:30

Music concert and meeting reception with refreshments

List of posters

KI Alame, MM Monshi, LN Reddy, SP McElmurry,
DR Kashian, DK Pitts

A NOVEL BEHAVIORAL SCREEN OF CHEMICALS OF EMERGING CONCERN (CECS) IN *DAPHNIA PULEX* AS A FIRST STEP IN THE DETECTION OF ENDOCRINE DISRUPTING POTENTIAL.

AM Alnemari, JD Hardege

THE EFFECTS OF PHTHALATES ON NEREIDIDAE POLYCHAETES

NH Alsheikh, C Ettelaie and JD Hardege

THE EFFECT OF OCEAN ACIDIFICATION ON THE ABILITY OF NEREIDS ADAPT TO PH STRESS

DI Brown

GONADAL COMPARTMENTALIZATION IN PROSOBRANCH-GASTROPOD MOLLUSCS: CORRELATION WITH SEXUALITY, SPERMATOGENESIS PATTERN, AND FERTILIZATION TYPE

MC Gambi, R Boni, Y Carotenuto, M Costantini, A Gallo, V Mazzella, O Migliaccio, M Munari, M Mutalipassi, L Nunez-Pons, A Palumbo, N Teixido, E Tosti, G Valvassori, V Zupo

EFFECTS OF OCEAN ACIDIFICATION ON REPRODUCTION AND DEVELOPMENT OF INVERTEBRATES: AN OVERVIEW OF RESEARCH AT THE STAZIONE ZOOLOGICA OF NAPLES

JD Hardege, and AM Alnemari

THE EFFECTS OF PHTHALATES ON NEREIDIDAE POLYCHAETES' REPRODUCTION

AV Kalachev, OV Yurchenko and KV Kiselev

AUTOPHAGY IN NUTRITIVE PHAGOCYTES OF SEA URCHINS

DH Lee and JS Rhee

ECDYSONE CONTENT IN DEVELOPMENTAL STAGES AND EFFECTS OF ENVIRONMENTAL FLUCTUATIONS ON THE PRODUCTION OF ECDYSONE AND RELATED PATHWAY IN THE MYSID CRUSTACEAN

SH Li, LH Zhou, FH Li, JH Xiang

AN ECLOSION HORMONE LIKE GENE PARTICIPATES IN THE MOLTING PROCESS OF *EXOPALAEON CARINICAUDA*

N Limatola, F Vasilev, JT Chun, L Santella

ALTERED ACTIN CYTOSKELETON IN OVERRIPE STARFISH EGGS AFFECTS THE FERTILIZATION PROCESS

J Lubawy, K Walkowiak-Nowicka, M Spochacz, S

ALLATOSTATINS INFLUENCE ON IMMUNE SYSTEM OF *TENEBRIO*

- Chowański, A Urbansky, P Marciniak, G Rosiński
MOLITOR BEETLE
- T Marčeta and MG Marin
COMBINED EFFECTS OF OCEAN ACIDIFICATION AND PHARMACEUTICALS ON *PARACENTROTUS LIVIDUS* LARVAE
- V Mazzella, M Mutalipassi, F Parrino, C Gargiulo, M Trifuoggi, and V Zupo
COASTAL POLLUTION INFLUENCES THE CULTURE OF SENSITIVE MODEL SPECIES: THE CASE OF *HIPPOLYTE INERMIS* LEACH
- AJ McCowen, JD Hardege
I Parlapiano, F Biantolino, L Manfra, A Rotini, L Migliore and E Prato
VISUALIZING SEXUAL CUES IN MARINE POLYCHAETES
CHRONIC TOXICITY OF NZNO ON SOME REPRODUCTIVE TRAITS OF THE MARINE COPEPOD *TIGRIOPUS FULVUS*
- AA Petrov, EV Soldatenko
MUSCULATURE OF THE MALE COPULATORY ORGANS IN THE HYGROPHILA (GASTROPODA: PULMONATA)
- M Prisco, M Agnese, S Valiante, P Andreuccetti, L Rosati
SPERMATOGENESIS AND ITS CONTROL IN *MYTILUS GALLOPROVINCIALIS* COLLECTED IN THE BAY OF NAPLES.
- N Ruocco, D Caramiello, F Glaviano, V Zupo, M Costantini
EXPERIMENTAL EVALUATION OF THE FEEDING RATE, GROWTH AND FERTILITY OF THE SEA URCHIN *PARACENTROTUS LIVIDUS*
- M Spochacz, K Walkowiak-Nowicka, S Chowański, A Urbansky, J Lubawy, Z Adamski
APPLICATION OF ALKALOIDS ALTERS HATCHING AND EARLY LARVAL DEVELOPMENT IN MEALWORM *TENEBRIO MOLITOR*
- AL Sujkowski, RJ Wessells
MALE-FEMALE DIFFERENCES IN DROSOPHILA EXERCISE
ADAPTATIONS ARE CONTROLLED BY ACTIVITY OF OCTOPAMINERGIC NEURONS
- EN Temereva, TV Kuzmina
SPERMATOGENESIS AND ORGANIZATION OF SPERMATOZOON IN DEEP SEA WATER BRACHIOPOD *PELAGODISCUS SP.*
- EN Temereva, TV Kuzmina
A NEW CASE OF OOGENESIS IN VIVIPAROUS PHORONID
- EN Temereva, TV Kuzmina
DEVELOPMENT OF THE NERVOUS SYSTEM IN VIVIPAROUS PHORONID:

N Tsutsui, S Kotaka, T Ohira, Y Kobayashi, and T Sakamoto	BAUPLAN OF THE LARVAL NERVOUS SYSTEM IN PHORONIDS
F Vasilev, L Santella, N Limatola, and JT Chun	THE SEARCH FOR HORMONE-LIKE TRANSCRIPTS EXPRESSED IN THE PRAWN OVARY USING NEXT GENERATION SEQUENCING
AA Vasquez, TL Burris, XN Walker, DL Yerramsetty, MS Qazazi, JL Ram	CONTRIBUTIONS OF CORTICAL GRANULES AND MICROVILLI TO THE INTRACELLULAR Ca ²⁺ INCREASE IN SEA URCHIN EGGS AT FERTILIZATION
K Walkowiak-Nowicka, SZ Chowański, J Lubawy, M Spochacz, Z Adamski, M Kuczer, G Rosiński	LARVAE AS PREY, PREDATOR, AND PARASITE IN WATER MITE-DIPTERAN INTERACTIONS
OV Yurchenko, AV Kalachev	YAMAMARIN AFFECTS THE REPRODUCTION AND EMBRYOGENESIS OF <i>TENEBRIO MOLITOR</i> BEETLE
OV Yurchenko, VI Radashevsky	SPECIFIC STORAGE CELLS IN THE GONAD TISSUE OF THE PACIFIC OYSTER, <i>CRASSOSTREA GIGAS</i> : A MORPHOLOGICAL STUDY
G Valvassori, MC Gambi	ULTRASTRUCTURE OF OOCYTE ENVELOPES IN SPIONID POLYCHAETES (ANNELIDA: SPIONIDAE) WITH SHORT-HEADED SPERMATOOZOA
	SHOULD I BROOD OR SHOULD I SPAWN? THE TALE FROM THE POLYCHAETE PLATYNEREIS SPP. IN ACIDIFIED ENVIRONMENTS