

## PROGRAMME

### TUESDAY 13<sup>th</sup>

15:30 REGISTRATION  
(Paraninfo Building. University of Zaragoza)

16:00 - 17:30 **SYMPOSIA**

Room: Aula Magna **Symposium 1: Applications of emerging technologies in Physiology.**  
Chair: Ignacio Giménez López

Speakers:

- *Design and Synthesis of Gold Nanoparticles for Therapy and Diagnosis.* Jesús Martínez de la Fuente, Instituto de Ciencia de los Materiales de Aragón, Universidad de Zaragoza-CSIC.
- *Biomimetic lab-on-a-chip microdevices to resemble cellular microenvironment in physiological conditions.* Iñaki Ochoa Garrido/Luis Fernández Ledesma, CIBER-BBN, Instituto de Investigación en Ingeniería de Aragón (I3A)
- *Development of an in vitro experimental model to study the mechanical characteristics of muscle fatigue phenomenon. Bioengineering applications.* Marta Sierra Arregui, Departamento de Farmacología y Fisiología, Universidad de Zaragoza
- *Biomechanical properties of the cornea in a rabbit model of amoebic keratitis: use of corneal collagen crosslinking.* Ángel L. Orillés Gonzalo, Departamento de Patología Animal, Universidad de Zaragoza

Room:  
Joaquín Costa

**Symposium 2: Homeostatic deviations in rare diseases**

Chairs: Juan Pie Juste, Beatriz Puisac Uriol

Speakers:

- *A TSFM mutation causes childhood-onset ataxia and non-obstructive cardiomyopathy.* Sonia Emperador Ortiz. Departamento de Bioquímica y Biología Celular y Molecular, Universidad de Zaragoza
- *Hereditary spastic paraplegia (HSP), an endoplasmic reticulum disease*  
Nuria Casals Farré. Departamento de Ciencias Básicas, Universidad Internacional de Cataluña

- *The cohesin complex failure may cause Cornelia de Lange syndrome.*  
Juan Pie Juste, Departamento de Farmacología y Fisiología,  
Universidad de Zaragoza
- *Human HMG-CoA lyases: two genes, three enzymes and one pathology*  
Beatriz Puisac Uriol, Departamento de Farmacología y Fisiología,  
Universidad de Zaragoza

17:30 – 19:30 **Opening Lecture: *Challenges for Physiology in a technological future.***

Room: Aula Magna Micro/nanotechnologies to fuel Physiological research  
Dr. Rosa Villa, Biomedical Applications Laboratory  
National Center for Microtechnologies, Barcelona

19:30 – 20:00 WELCOME RECEPTION

## WEDNESDAY 14<sup>TH</sup>

9:00 – 11:00 **SYMPOSIA, ORAL COMMUNICATIONS**

Room: **Symposium 3: Intestinal Epithelial Transport. Symposium homage to**  
Aula Magna **Professor Anabel Alcalde.**

Chairs: María Pilar Arruebo, José Emilio Mesonero  
Speakers:

- *The reelin in the intestine.* Ana A. Ilundain Larrañeta, Dpto. Fisiología, Universidad de Sevilla.
- *Omega-3 fatty acids and their derived lipid mediators as blockers of TNF- $\alpha$ -induced decrease of nutrients transport.* María Pilar Lostao Crespo, Dpto. CC. De la Alimentación y Fisiología, Universidad de Navarra
- *Pending questions on the control of inorganic phosphate homeostasis*  
Victor Sorribas Alejandre, Dpto. de Toxicología, Universidad de Zaragoza
- *LPS-Squalene interaction on D-galactose intestinal absorption.*  
María Jesús Rodríguez Yoldi, Dpto. de Fisiología, Universidad de Zaragoza.

- *Role of the serotonin transporter in the pathophysiology intestinal*  
José Emilio Mesonero, Dpto. de Fisiología, Universidad de Zaragoza.

## ORAL COMUNICATIONS

Room:  
Pilar Sinués

### Oral Session 1. Cell and Molecular Physiology (O1-1 – O1-8)

O1-01 ESTROGEN DETRIMENT DURING MENOPAUSE ALTERS ESTROGEN RECEPTOR SIGNALING PLATFORMS LOCATED IN LIPID RAFTS OF CORTICAL BRAIN AREAS, A PHENOMENON INDUCING TOXIC SIGNALLING AND ENSUING ALZHEIMER'S DISEASE. *Raquel Marín, Ana Canerina-Amaro, David Quinto-Aleman, Fátima Mesa Herrera, Carla Ferri, José Antonio Pérez, Verónica Casañas Sánchez, Mario Diaz.*

O1-02 ALTERED SYSTEMIC INFLAMMATORY AND STRESS RESPONSES IN AGED PATIENTS WITH OSTEOARTHRITIS. IMMUNONEUROENDOCRINE DYSREGULATION. *Isabel Gálvez, María Dolores Hinchado, Jorge Guerrero, Silvia Torres-Piles, Eduardo Ortega.*

O1-03 CHARACTERIZATION OF VASCULAR SMOOTH MUSCLE CELL PHOSPHATE TRANSPORT. *Luis Hortells, Cecilia Sosa, Víctor Sorribas.*

O1-04 KCNE4 forms functional oligomeric Kv1.3 complexes in leukocytes via association with the carboxy terminal domain of the channel. *Sara R Roig, Laura Solé, Albert Vallejo-Gracia, Daniel Sastre, Antonio Serrano-Albarrás, Ramón Martínez-Mármol, Michael M Tamkun, Antonio Felipe.*

O1-05 MELATONIN REGULATES THE SPHINGOSINE KINASE 1/SPHINGOSINE 1-PHOSPHATE SIGNALING PATHWAY IN A MICE MODEL OF DIETHYLNITROSAMINE-INDUCED HEPATOCELLULAR CARCINOMA. *D.I. Sánchez, Bárbara González-Fernández, Beatriz San-Miguel, Irene Crespo, Juan Ortíz De Urbina, Javier González-Gallego, María J Tuñón.*

O1-06 AGING AND SARCOPENIA. ROLES OF THE INNATE IMMUNITY AND MELATONIN THERAPY. *Marisol Fernández Ortiz, Ramy K. Sayed, Juan Ángel Rodríguez Pozo, Paula Aranda Martínez, Darío Acuña Castroviejo.*

O1-07 NLRP3 INFLAMMASOME AFFECTS MITOCHONDRIAL MORPHOLOGY IN SKELETAL MUSCLE OF MICE. *Ramy K. Sayed, Marisol Fernández Ortiz, Ibtissem Rahim, Darío Acuña Castroviejo.*

O1-08 STUDY OF ULTRAVIOLET RADIATION EFFECT ON FIBROBLASTS AND QUERCETIN PROTECTION. *Alvaro Casanova Flor De Lis, Desiree Pereboom, Jose Octavio Alda.*

Room: **Oral Session 2**  
Joaquín Costa **Sports Physiology (O2-01 – O2-06)**

O2-01 MUSCLE DAMAGE AND OXIDATIVE STRESS DURING BENCH PRESS AND SQUAT EXERCISES. *Jerónimo Aragón Vela, Yahira Barranco Ruiz, Cristina Casals Vázquez, Jesús F. Rodríguez Huertas, Julio Plaza Díaz, Luis Fontana Gallego, Rafael Casuso Perez.*

O2-02 Sprint interval training induces a weak oxidative-related transcriptional response within the triceps brachii of trained swimmers. *Jesus R Huertas, Julio Plaza-Diaz, Jerónimo Aragon-Vela, Daniel Camiletti-Moiron, Francisco J Ruiz-Ojeda, Cándido Robles-Sanchez, Alberto Ruiz-Ariza, Antonio Martínez-Amat, Marina Hebberecht, Carlos Melero-Romero, Luis M Salmeron, Rafael A Casuso.*

O2-03 MECHANISMS INVOLVED IN THE ORIGIN OF SKELETAL MUSCLE DAMAGE AFTER A SUBMAXIMAL TEST IN ENDURANCE PRACTITIONERS. *Yaira Barranco-Ruiz, Cristina Casals, Jerónimo Aragon-Vela, Antonio Martínez-Amat, Rafael A. Casuso, Jesús R. Huertas.*

O2-04 PRO-INFLAMMATORY CYTOKINES (IL-6 and TNF- $\alpha$ ) AND THEIR SOLUBLE RECEPTORS IN ELITE JUDO ATHLETES. *Cristina Casals, Raquel Escobar-Molina, Yaira Barranco-Ruiz, Jeronimo Aragon-Vela, Silvia Rosillo, Jesús R Huertas.*

O2-05 EFFECTS OF AEROBIC EXERCISE ON THE ELECTROPHYSIOLOGICAL HETEROGENEITY OF THE MYOCARDIUM DURING VENTRICULAR FIBRILLATION IN A MODEL OF ISOLATED RABBIT HEART. AN EXPERIMENTAL STUDY. *Javier*

*Simón-Grima, Carlos Soler, Luis Such-Miquel, Irene Del Canto, Manuel Zarzoso, Óscar Julián Arias-Mutis, Patricia Genovés, Francisco Javier Chorro, Luis Such, Antonio Manuel Alberola.*

O2-06 HIGH FREQUENCY ELECTRICAL STIMULATION INDUCES HYPERTROPHY AND IMPROVES THE CONTRACTILE PROPERTIES OF MICE SKELETAL MUSCLE.  
*Andresa Evelem De Melo Aroeira, Pedro L. Valenzuela, Laura Ramírez, Joan R. Torrella, Pedro De La Villa.*

11:00 - 12:00 **COFFEE BREAK / EXHIBITIONS**

Room: Josefa Amar y Borbón **POSTER SESSIONS: CELL & MOLECULAR PHYSIOLOGY, NEUROPHYSIOLOGY, CARDIOVASCULAR, GASTROINTESTINAL, ENDOCRINOLOGY, TEACHING. (P1-01-P1-39)**

12:00 – 14:00 **SECF Annual Meeting. Premio Antonio Gallego**

Room: Prof. Ana Obeso. Dpto. Bioquímica y Biología Molecular y Fisiología, Instituto de Aula Magna Biología y Genética Molecular, Universidad de Valladolid.

14:00 – 15:00 LUNCH BREAK

15:00 – 16:00 **PHYSIOLOGY TRAINEE WORKSHOP**

Room: Josefa Amar y Borbón

16:00 – 18:00 **SYMPOSIUM**

Room: **Symposium 4. New insights on the role of ion channels in health and disease**  
Aula Magna Chairs: Tarik Smani, Juan Antonio Rosado

Speakers:

- *Essential role of Ca<sup>2+</sup> homeostasis dysregulation in the adverse cardiac remodeling due to heart revascularization.* Tarik Smani, Instituto de Biomedicina de Sevilla, Universidad de Sevilla
- *Role of SARAF in the regulation of Ca<sup>2+</sup> entry.* Juan Antonio Rosado, Departamento de Fisiología, Universidad de Extremadura



- *Functional coupling of GABAA/B receptors and TRPV4 channel mediates rapid progesterone signaling in the oviduct.* Miguel Ángel Valverde De Castro, Dept. Experimental and Health Sciences, U. Pompeu Fabra
- *Ca<sup>2+</sup> channel remodeling in colon cáncer.* Carlos Villalobos, Instituto de Biología y Genética Molecular, Valladolid

Room: **Symposium 5: A new role for the carotid body in Pathology.**

Pilar Sinués  
Chairs: Ricardo Rigual, Rodrigo Iturriaga  
Speakers:

- *Gases and ion channels – vital interactions in chemoreception and beyond.* Chris Peers, Division of Cardiovascular and Diabetes Research, University of Leeds
- *From carotid body oxygen sensing to chronic intermittent hypoxia effects on spontaneous tumorigenesis. The journey of Constancio's group.* Ana Obeso, Dpto. Bioquímica y Biología Molecular y Fisiología, Instituto de Biología y Genética Molecular, Universidad de Valladolid.
- *Chemoreception and metabolic diseases.* Silvia Conde, Dept. of Pharmacology, New University of Lisbon
- *Contribution of carotid body chemoreceptors to the hypertension and autonomic changes induced by intermittent hypoxia in an experimental model of obstructive sleep apnea.* Rodrigo Iturriaga, Dpto. de Fisiología, Pontificia Universidad Católica de Chile

Room: **Symposium 6. Cardiovascular adaptations to long term and high intensity exercise: physiological or pathological?**

Joaquín Costa

Chair: Nuria Garatachea

Speakers:

- *Strenuous endurance exercise: Cardio-healthy or 'cardiotoxic'?* Helios Pareja-Galeano, Instituto de Investigación Hospital 12 de Octubre, Universidad Europea de Madrid

- *No evidence of adverse cardiac remodeling in former elite endurance athletes.* Enrique Serrano-Ostáriz, Dpto. De Fisiatría y Enfermería, Universidad de Zaragoza
- *Sudden cardiac death in professional cycling.* Alejandro Santos Lozano, Universidad Europea Miguel de Cervantes (UEMC)

18:00 – 18:30 BREAK

18:30 – 20:00 **Lecture 2: *Advances in Cell and Molecular Physiology.***

Room: Optoelectrical dynamics of calcium- and voltage-gated ion channels in subcellular calcium nanodomains.  
Aula Magna

Dr. Teresa Giraldez  
University La Laguna, Tenerife

20:00 – 22:00 Social Program (optional): Guided Tour to Aljafería Palace

22:00 Social Program (optional): Casual dinner (tapas in historic downtown)

## THURSDAY 15<sup>th</sup>

9:00 – 11:00 **ORAL COMUNICATIONS.**

Room: **Oral Session 3. Gastrointestinal (O3-01 – O3-06)**  
Joaquín Costa

O3-01 Apoptotic mechanisms of alkynyl gold(I) complexes in colorectal carcinoma. *Cristina Sánchez, Inés Marmol, Sonia Gascón, Jesús Osada, M<sup>a</sup> Jesús Rodríguez-Yoldi, Elena Cerrada.*

O3-02 Targeting thioredoxin reductase: use of alkynyl gold complexes in colorectal cancer treatment. *Inés Marmol, Cristina Sánchez, Sonia Gascón, Jesús Osada, M<sup>a</sup> Jesús Rodríguez-Yoldi, Elena Cerrada.*

O3-03 ANTIBIOTIC-INDUCED DEPLETION OF MICROBIOTA INDUCES CHANGES IN THE MOTOR RESPONSE TO SEROTONIN IN MOUSE ILEUM. *Raquel Forcén, Elena Layunta, Ana Del Carmen Susunaga-Notario, José Emilio Mesonero, Laura Grasa.*

O3-04 ACTIVATION OF TOLL-LIKE RECEPTOR 5 MODULATES THE INTESTINAL SEROTONIN TRANSPORTER IN CACO-2 CELLS. COMPARATIVE STUDY WITH OTHER TOLL-LIKE RECEPTORS. *Eva Latorre, Elena Layunta, Carmen Mendoza, Nyurky Matheus, Santiago Garcia, Fernando Gomollón, Jose Emilio Mesonero.*

O3-05 INTERRELATIONSHIP BETWEEN NOD AND TLR RECEPTORS IN THE INTESTINAL TRACT OF MICE. *Elena Layunta, Eva Latorre, Raquel Forcén, Laura Grasa, Marta Castro, Julián Pardo, Jose Emilio Mesonero.*

O3-06 Expression and regulation of GLUT12 in small intestine and adipose tissue. *Eva Gil Iturbe, Carla Valriberas, M<sup>a</sup> Pilar Lostao Crespo.*

Room:  
Pilar Sinués

**Oral Session 4. Neurophysiology (O4-01 – O4-08)**

O4-01 THE CEREBROSPINAL FLUID OF PARKINSONIAN PATIENTS PRESENTS ELEVATED ATP13A2 CONTENT, REDUCED ATPASE ACTIVITY, AND INDUCES ATP13A2-DEPENDENT RETRACTION OF NIGRAL NEURON NEURITES. *Emilio Fernandez-Espejo, Fatima Damas-Hermoso, Jose Manuel Garcia-Moreno.*

O4-02 The role of humoral immune response and oxidative stress in the physiopathology of multiple sclerosis. *Úrsula Muñoz, Cristina Sebal, Esther Escudero, Carolyn Sloan, María De La Cruz Sádaba.*

O4-03 ACTIONS OF THE LOCAL ANESTHETIC BENZOCAINE ON MUSCLE-TYPE NICOTINIC RECEPTORS MICROTRANSPLANTED TO THE *Xenopus* OOCYTE MEMBRANE. *Raúl Cobo, Armando Alberola-Die, Isabel Ivorra, Andrés Morales.*

O4-04 POSTNATAL DEVELOPMENT OF OXYGEN CONSUMPTION AND ELECTROPHYSIOLOGICAL PARAMETERS (ECG, EMG, EEG) DURING SLEEP-WAKE CYCLE IN EAR2 MICE. *Ángeles Prados, Eduardo Domínguez Del Toro.*

O4-05 PRENATAL TREATMENT WITH RETINOIC ACID MODIFIES POSTNATAL SLEEP-WAKE CYCLE IN MICE. *Sandra Prieto Soler, Amparo Martínez Pérez, Eduardo Domínguez Del Toro.*



O4-06 Epigallocatechin gallate and melatonin oral treatments improve visual acuity, contrast sensitivity and electroretinogram response in a rat model of retinal degeneration. *Lorena Perdices, Lorena Fuentes-Broto, Francisco Segura, Gema Insa, Elvira Orduna, Isabel Pinilla.*

O4-07 Synaptotagmin-7 controls the size of the reserve pool of synaptic vesicles in hippocampal neurons. *María Angeles Montes, Elisa Durán, Imane Jemal, Rachel Satterfield, Samuel Young, Guillermo Álvarez De Toledo.*

O4-08 TRANSGENIC ALZHEIMER'S DISEASE MICE EXHIBIT VISUAL AND BEHAVIOURAL DYSFUNCTIONS. *Oksana Kutsyr, Pedro Lax, Laura Campello, Emilio De Juan, Victoria Maneu, Luis Gandía, Nicolás Cuenca.*

Room:  
Aula Magna

**Oral Session 5. Cardiovascular Physiology 1 (O5-01 – O5-08)**

O5-01 EFFECTS OF HIGH-FAT AND HIGH-SUCROSE DIET ON VENTRICULAR REPOLARIZATION IN ISOLATED RABBIT HEART. *Óscar Julián Arias-Mutis, Conrado Calvo, Luis Such-Miquel, Antonio Guill, Álvaro Tormos, José Millet, Francisco Javier Chorro, Antonio Alberola, Luis Such, Manuel Zarzoso.*

O5-02 EARLY EVENTS IN UREMIC VASCULAR CALCIFICATION IN 5/6 NEPHRECTOMIZED RATS. *Luis Hortells, Cecilia Sosa, Ángel Millan, Víctor Sorribas.*

O5-03 Melatonin is available in plasma after kidney bean sprout ingestion in rats. *Silvia Magdalena Arribas Rodríguez, Pilar Rodríguez Rodríguez, Ángel Luis López De Pablo León, Yolanda Aguilera, Miguel Rebollo Hernanz, Teresa Herrera, Laura Tábata Cayuelas, María De Los Ángeles Martín Cabrejas.*

O5-04 Female rats are not protected from fetal programming of ventricular dysfunction. *Pilar Rodríguez Rodríguez, Ángel Luis López De Pablo, Concepción Fernández García-Prieto, Beatriz Somoza Hernández, Begoña Quintana Villamandos, José Juan Gómez De Diego, Perla Yareli Gutiérrez Arzapalo, Cynthia Guadalupe Reyes Hernández, David Ramiro Cortijo, María Del Carmen González García, Silvia Magdalena Arribas Rodríguez.*

O5-05 Early regression of the thoracic aorta remodeling after treatment with esmolol in an experimental rat model of primary hypertension. *Begoña Quintana-Villamandos, M. Carmen González, M. Jesús Delgado-Martos, Luis Condezo-Hoyos, Rainer H Böger, Nicole Lüneburg, Laia Pazó-Sayós, Perla Yareli Gutiérrez-Arzapalo, Emilio Delgado-Baeza.*

O5-06 ROLE OF ENDOTHELIUM-DERIVED HYPERPOLARIZATION IN THE VASODILATATION OF RAT INTRARENAL ARTERIES. *Estéfano Pinilla, Ana Sánchez-Pina, Mercedes Muñoz Picos, Albino García Sacristán, Dolores Prieto, Luis Rivera.*

O5-07 MINERALOCORTICOID RECEPTOR ANTAGONISM PREVENTS HUMAN AORTIC ENDOTHELIAL DYSFUNCTION AND MODIFIES ION CHANNEL REMODELING INDUCED BY UREMIC SERUM. *Violeta Cazaña-Perez, Teresa Giraldez, Juan Navarro-Gonzalez, Kristina Kusche-Virhog, Diego Alvarez De La Rosa.*

O5-08 ROLE OF SOLUBLE ENDOGLIN IN THE PHYSIOPATHOLOGY OF PREECLAMPSIA. *Lucía Pérez Roque, Elena Núñez Gómez, Claudia Ollauri Ibáñez, Laura Ruíz Remolina, Carmelo Bernabeu, Fernando Pérez Barriocanal, Alicia Rodríguez Barbero, Miguel Pericacho, José Miguel López Novoa.*

11:00 - 12:00 **COFFEE BREAK / EXHIBITIONS**

Room: Josefa **POSTER SESSIONS: NEUROPHYSIOLOGY, NUTRITION & METABOLISM,**  
Amar y Borbón **RENAL RESPIRATORY, SPORTS PHYSIOLOGY, CHRONOBIOLOGY,**  
**BIOENGINEERING (P2-01 – P2-41)**

12:00 – 14:00 **SYMPOSIA, ROUND TABLE and ORAL COMUNICATIONS**

Room: **Symposium 7: High throughput technologies applied to nutritional**  
Aula Magna **and cardiovascular research.**

Chair: Jesús Osada

Speakers:

- *Metabolomics in the study of host-gut microbiota interactions in cardiometabolic disease.* Daniel Monleón, Universidad de Valencia

- *A novel data-independent mass spectrometry approach allows highly detailed characterization of the mitochondrial interactome and reveals mechanisms of respiratory supercomplex assembly*  
Jesús Vázquez Cobos, CNIC. Madrid
- *Transcriptomic Analyses to Explore Mechanisms of Nutrient Action*  
Jesús Osada, Universidad de Zaragoza
- *Targeting microRNA function through environmental and lifestyle factors*  
Alberto Dávalos, IMDEA

Room: **Oral Session 6.**  
Joaquín Costa **Cardiovascular Physiology 2 (O6-01 – O6-05)**  
**Respiratory Physiology (O6-06)**  
**Teaching of Physiology (O6-07 – O6-08)**

O6-01 RYANODINE RECEPTOR TYPE-II ANTAGONIST VK-II-86 PREVENTS INTRINSIC ELECTROPHYSIOLOGICAL MODIFICATIONS ON REFRACTORINESS PRODUCED BY LOCAL VENTRICULAR STRETCH IN ISOLATED RABBIT HEART. *Irene Del Canto, Laura Santamaría, Patricia Genovés, Luis Such-Miquel, Manuel Zarzoso, Carlos Soler, Óscar Julián Arias-Mutis, Antonio Alberola, Francisco Javier Chorro, Luis Such.*

O6-02 ELECTRICAL REMODELING PRODUCED IN AN EXPERIMENTAL MODEL OF METABOLIC SYNDROME. A STUDY ON ISOLATED RABBIT HEART. *Óscar Julián Arias-Mutis, Luis Such-Miquel, Conrado Calvo, Antonio Guill, Álvaro Tormos, Germán Parra, Francisco Javier Chorro, Antonio Alberola, Luis Such, Manuel Zarzoso.*

O6-03 EFFECT OF CHRONIC EXERCISE ON THE ELECTRICAL STABILITY AND REFRACTORINESS OF VENTRICULAR MYOCARDIUM IN A MODEL OF ISOLATED AND FIBRILLATING RABBIT HEART. *Jorge Peris, Carlos Soler, Manuel Zarzoso, Irene Del Canto, Luis Such-Miquel, Mariano Muñoz, Patricia Genovés, Antonio Alberola, Luis Such, Francisco Javier Chorro.*

O6-04 Use of a score to assess global antioxidant status in plasma and potential value to predict pregnancy complications. *David Ramiro Cortijo,*

*Teresa Herrera, Pilar Rodríguez Rodríguez, Ángel Luis López De Pablo León, María De La Calle, María Del Rosario López Giménez, Ana Isabel Mora Urda, Perla Yareli Gutiérrez Arzapalo, Rubén Gómez Rioja, Yolanda Aguilera, María Ángeles Martín Cabreja, Luis Condezo Hoyos, María Del Carmen González García, Pilar Montero, Bernardo Moreno Jiménez, Silvia Magdalena Arribas Rodríguez.*

O6-05 CYTOCHROME P450 (CYP)-DERIVED HYDROGEN PEROXIDE IS INVOLVED IN THE EDH-TYPE RELAXATIONS OF INTRARENAL ARTERIES. *Mercedes Muñoz Picos, Elvira López-Oliva Muñoz, Estéfano Pinilla, María Pilar Martínez, Ana Alejandra Sánchez Pina, Albino García-Sacristán, Medardo Hernández Rodríguez, Luis Rivera De Los Arcos, Dolores Prieto Ocejo.*

O6-06 NEMO 3.0: A SIMULATION ENVIRONMENT FOR VIRTUAL EXPERIMENTS ILLUSTRATING THE COUNTERCURRENT GAS EXCHANGE AND OXYGEN TRANSPORT ACROSS FISH GILLS. *Mario Díaz, Belén Martín.*

O6-07 THE LINK BETWEEN THE CLASSROOM AND THE LATEST RESEARCH: FISOUPDATE; DEVELOPMENT OF A PROJECT FOR UPDATING SCIENTIFIC CONTENTS. *Clara Azpeleta, Beatriz Gal, Elena Velarde, Francisco Javier Pardo, Almudena F. Vaquero.*

O6-08 HAVE AUSCULTATION CARDIOPULMONARY AND ECHOCARDIOGRAPHY. *Lorena Franco Rubio, José Carlos González, Marisol Soria Aznar, Jesús Escanero, Manuel Guerra.*

Room: **ROUND TABLE ON FUNDING**  
Pilar Sinués Chair: Marcel Jiménez

Speakers:  
María del Mar Malagón  
Manel Tena-Sempere

14:00 – 15:00 LUNCH BREAK

15:00 – 16:00 **PHYSIOLOGY TRAINEE WORKSHOP**

Room: Josefa  
Amar y Borbón

16:00 – 18:00 **SYMPOSIA**  
Room: **Symposium 8: Gastrointestinal Physiology: functions of intestinal mucose  
and smooth muscle.**  
Aula Magna  
Chairs: Laura Grasa López, Miguel Ángel Plaza Carrión

Speakers:

- *Dietary spray-dried animal plasma supplements prevent intestinal and peripheral inflammation in murine models.* Miquel Moretó Pedragosa, Dept. de Fisiología, Universitat de Barcelona.
- *Interaction between inhibitory neurons and pacemaker function coordinates myogenic motor patterns in the colon.* Marcel Jiménez, Dept. de Biología Celular Fisiología e Inmunología, Universitat Autònoma de Barcelona.
- *Age-related changes in contractility, Ca<sup>2+</sup> homeostasis, senescence pathway and mitochondrial dynamics in human colon.* María José Pozo Andrada, Depto. de Fisiología, Universidad de Extremadura.
- *Influence of the microbiota on the mouse intestinal motor function: role of toll like receptors.* Laura Grasa López, Dpto. de Fisiología, Universidad de Zaragoza.

Room: **Symposium 9: Biological rhythms, light and health.**  
Pilar Sinués  
Chairs: María de los Ángeles Rol de Lama, Pedro Lax Zapata

Speakers:

- *Effect of lighting in the ontogeny of circadian rhythm*  
Antoni Díez Noguera, Dept. Fisiología, Universitat de Barcelona
- *Octodon degus as an ideal animal model to understand human circadian system functionality.* Beatriz Baño, Dpto. Fisiología, Universidad de Murcia
- *Light and biological rhythms: the role of the retina.* Pedro Lax Zapata, Dpto. Fisiología, Genética y Microbiología, Universidad de Alicante

- *Chronodisruption, melatonin and cáncer.* Juan C. Mayo, Dpto. Morfología y Biología Celular, Universidad de Oviedo

Room: **Symposium 10: Teaching of Physiology.**  
Joaquín Costa Chair: Arcadio Gual

Speakers:

- *Developing Practical Physiology with Arduino.* Guillermo Álvarez de Toledo, Universidad de Sevilla.
- *Continuous assessment in Physiology*  
Jorge Palés Argullós, Universtitat de Barcelona.
- *Tools for e-learning/teaching (e-L/T) of Physiology.* Emilio Sánchez Barceló, Universidad de Cantabria.
- *Case Studies for Small Group Discussions on Medical Physiology: a collection arranged by the Grupo Interuniversitario de Innovación Docente en Fisiología (GIDF).*  
Diego Sánchez Romero, Universidad de Valladolid.

18:00 – 18:30 BREAK

18:30 – 20:00 **Lecture 3: Advances in Applied Physiology**

Chronodisruption and melatonergic dysfunction in aging and disease.

Prof. Rüdiger Hardeland  
University of Goettingen, Germany

21:00 Social Program (optional): Conference Dinner

## FRIDAY 16<sup>th</sup>

9:00 – 10:30 **ORAL COMUNICACIONES AND POSTER SESSION**

Room: **Oral Session 7.**  
Aula Magna **Endocrinology (O7-01 – O7-02)**  
**Chronobiology (O7-03 – O7-04)**  
**Nutrition, metabolism and obesity (O7-05 – O7-06)**

O7-01 CORTISTATIN INHIBITS INSULIN SECRETION VIA SOMATOSTATIN RECEPTOR 5 IN MOUSE PANCREATIC BETA-CELLS. *Sergi Soriano, Alex Rafacho, Paloma Alonso-Magdalena, Manuel Castellano-Muñoz, Eva María Bru-Tarí, Beatriz Merino, Antonia Ruiz, Esperanza Irlés, Melisa Bello, Pau Iborra, Sabrina Villar, Jean Vetorazzi, Manuel Nacher, Eduard Montanya, Ramón Luque, Angel Nadal, Ivan Quesada.*

O7-02 REGULATION OF ANGIOPOIETINS, TIE-2 AND VASCULAR ENDOTHELIAL GROWTH FACTOR BY MELATONIN IN HUMAN BREAST CANCER AND ENDOTHELIAL CELLS. *Alicia González-González, Alicia González, Carolina Alonso-González, Carlos Martínez-Campa, Javier Menendez-Menendez, Samuel Cos.*

O7-03 TWO DIFFERENT HIGH-FAT DIETS PRODUCE DIFFERENT EFFECTS ON ACTIVITY/INACTIVITY CIRCADIAN RHYTHM IN RATS. *Rafael Bravo, Lierni Ugartemendia, José María Tena, Lourdes Franco, Ana B. Rodríguez, Javier Cubero, Carmen Barriga.*

O7-04 Sleep and Circadian Rhythm alterations in patients with retinitis pigmentosa: EC11-441 clinical trial results. *Lorena Fuentes-Broto, Lorena Perdices, Pedro Lax, Gema Insa, Elvira Orduna, Francisco Segura, Nicolás Cuenca, Isabel Pinilla.*

O7-05 MARESIN 1 INHIBITS TNF- $\alpha$ -INDUCED LIPOLYSIS IN 3T3-L1 ADIPOCYTES. *Laura M Laiglesia, Silvia Lorente-Cebrián, Miguel López-Yoldi, J Alfredo Martínez, María Jesús Moreno-Aliaga.*

O7-06 Squalene effects on lipid metabolism in rabbit. *Roberto Martínez-Beamonte, M<sup>a</sup> José Felices, Sara Escusol, Sonia Gascón, Joaquín Surra, Inés Mármol, Jesús De La Osada, M<sup>a</sup> Jesús Rodríguez-Yoldi.*

Room: **Oral Session 8.**  
Joaquín Costa **Renal (O8-01 – O8-04)**  
**Cell and Molecular Physiology (O8-05 – O8-06)**



O8-01 MOLECULAR MECHANISM OF PI DEPRIVATION-INDUCED BICARBONATURIA. *Susana Lucea Arnas, Natalia Guillén Monzon, Víctor Sorribas Alejaldre.*

O8-02 HYPERALDOSTERONISM-INDUCED HYPERTENSION AND KIDNEY INJURY ARE POTENTIATED BY EXCESS SERUM- AND GLUCOCORTICOID-INDUCIBLE KINASE 1 (SGK1) ACTIVITY IN MALE MICE. *Catalina Sierra-Ramos, Guadalberto Hernandez, Sergio Luis-Lima, Ana Rodriguez-Rodriguez, Mercedes Muro-De-Fuentes, Esteban Porrini, Juan Navarro-Gonzalez, Eduardo Salido, Diego Alvarez De La Rosa.*

O8-03 Gender-dependent differences in the arterial pressure and renal function effects of obesity at an early age. Role of angiotensin II and interleukin-6. *Antonio Tapia, Juan Manuel Moreno, F. Javier Salazar, Maria Teresa Llinás.*

O8-04 In vitro models to study NKCC2 regulation by AMPK. *Laura Martinez-Gimeno, Maria Luisa Bernal-Ruiz, Patricia Meade, Ignacio Gimenez.*

O8-05 Storage systems that increase the life of platelets. *Patricia Rego, Alvaro Casanova, Jose Antonio Moreno, Pilar Peribañez, Daniel Falcon, Mercedes Galvez, Pedro Latorre, Pilar Delgado, Desiree Pereboom, Manuel Guerra.*

O8-06 MELATONIN AS ENHANCER OF CHEMOTHERAPY TREATMENT IN HUMAN COLORECTAL ADENOCARCINOMA. *Roberto Pariente, Ignacio Bejarano, José Antonio Pariente, Ana Beatriz Rodríguez, Javier Espino.*

10:30 – 11:30 **COFFEE BREAK / EXHIBITIONS**

Room: Josefa Amar y Borbón **POSTER SESSION: PHYSIOLOGY TRAINEE WORKSHOP: CARDIOVASCULAR PHYSIOLOGY, CELL AND MOLECULAR PHYSIOLOGY (P3-01 – P3-29).**

11:30 – 13:00 **SYMPOSIA and POSTER SESSION**



Room: **Symposium 11: Vascular dysfunction, obesity and insulin resistance.**  
Aula Magna Chairs: Dolores Prieto Ocejo, Luis Rivera de los Arcos

Speakers:

- *Hypothalamic control of energy balance in insulin resistance obese models.* Cristina Contreras Jiménez, Dpto. De Fisiología, Universidad de Santiago de Compostela
- *Endothelial dysfunction and vascular and metabolic complications of obesity.* Dolores Prieto Ocejo, Dpto. de Fisiología, Universidad Complutense Madrid
- *Role of perivascular adipose tissue in obesity-related vascular damage* María Soledad Fernández Alfonso, Dpto. de Farmacología, Universidad Complutense Madrid
- *Novel gating modulators of KCa3.1 channels and therapeutic perspectives.* Ralf Köhler, Instituto Aragonés de Ciencias de la Salud, Zaragoza

Room: **Symposium 12: Neuropathic pain: a problem with difficult diagnosis and therapy.**  
Joaquín Costa Chair: Raquel Ábalo

Speakers:

- *The Observatory of Pain. A research group for the study of pain in our social environment.* Alejandro Salazar Couso, Universidad de Cádiz
- *Animal models of neuropathic pain.* Gema Vera, Universidad Rey Juan Carlos.
- *Drugs and other strategies for management of neuropathic pain. Where are we now? Where are we going?* Raquel Ábalo, Universidad Rey Juan Carlos.

13:00 – 14:30 **Closing ceremony. SECF's 2016 Juan Negrín Award Lecture**

Room: An unfolding connection between yoga and muscle contraction  
Aula Magna Julio Fernández, Single Protein Mechanics and Engineering Laboratory  
Columbia University, US