FeSBE
Federação de Sociedades de
Biologia Experimental

XXXIV FeSBE Annual Meeting
September 9 – 13, 2019
Campos do Jordão - SP

PRELIMINARY PROGRAM

LECTURES

Environmental remediation in uranium mining and naturally occurring radioactive material waste

Chair: Silvia Maria Velasques de Oliveira (SBBN)

Speaker: Horst Monken-Fernandes (International Atomic Energy Agency-IAEA)

Short description: Environmental remediation of radioactive contamination is about achieving appropriate reduction of exposures to ionizing radiation. Ideally, environmental remediation is part of the planning phase of any industrial operation with the potential of to cause environmental contamination. The lessons learned from international experience can help the Brazilian authorities and scientists of more sustainable options in the development of the future uranium production sites.

Hypertensive neuropathy: a new clinical disease?

Chair: Ana Carolina T. Takakura (ICB-USP)

Speaker: Valéria Paula S. Fazan (FMRP-USP)

Short description: Hypertension is a main risk factor for stroke and vascular dementia and may cause important changes to the cerebrovascular tree, turning the brain more susceptible to infarcts, microaneurysms and ischemia. The conference will address alterations on the morphology and morphometric data on sural, phrenic and vagus nerves in hypertension.

Pericytes at the intersection between tissue regeneration and pathology

Chair: Valbert Nascimento Cardoso (UFMG)

Speaker: Alexander Birbrair (UFMG)

Short description: Paper recently published by Alexander Bribrair in *Stem Cells Translational Medicine* showed that the neural stem cell derived from the muscular pericyte and of the skeletal muscle blood vessel cell has natural attraction for substances produced by tumor. This finding may constitute a good strategy for the treatment of glioblastoma.

Melatonin as a Hormone: New Physiological and Clinical Insights

Chair: Fernanda Gaspar do Amaral (UNIFESP)

Speaker: José Cipolla Neto (ICB-USP)

Short description: After 60 years of melatonin isolation it is time to systematize the present knowledge and to discuss and establish guidelines to the use of melatonin. The recent review published by Professor Cipolla Neto in *Endocrine Reviews* brings a major contribution to the understanding of this hormone ways of action and the present lecture aims to discuss the new concepts presented there.

Discussing the Relationship (DR): The bi-directional communication between tumor and stroma

Chair: Patricia Gama (ICB-USP)

Speaker: T. Christina Barja-Fidalgo (UERJ)

Short description: Cancer is a devastating disease with high morbidity and mortality worldwide. The anomalous behavior of stromal cells creates an environment that facilitates tumor growth, metastasis and drug resistance. Therefore, a better understanding of this influence has great impact on clinical therapy. Prof. Barja-Fidalgo has published many articles in prestigious journals and in this conference the current understanding of recent advances on the mechanisms involved in the communication between cancer and stromal cells will be discussed.

Non-coding RNAs: pathophysiological role and clinical application in the cardiovascular system

Chair: Alice Cristina Rodrigues (ICB-USP)

Speaker: Da-Zhi Wang (Harvard Medical School)

Short description: Dr. Wang's laboratory focuses on the molecular mechanisms of cardiac, smooth and skeletal muscle development and diseases. They identified a subset of miRNAs that are specifically expressed in cardiac and skeletal muscles that play a critical role in controlling cardiac and skeletal muscle proliferation and differentiation. Dr. Wang is a highly productive and innovative scientist and have published in Cell, Nature, Nature Genetics, Nature Medicine, PNAS, Journal of Clinical Investigation, Development, Circulation and Circulation Research.

A Chimera Named Pollution

Chair: Patricia Rocco (UFRJ)

Speaker: Walter Araujo Zin (UFRJ)

Short description: Pollution has many faces and needs a multitude of approaches to be minimized. Indoor pollution, particulate matter in general, Diesel engines exhaust products, and plastics in water collections will be the main topics to be discussed by Prof. Zin that have published over 200 papers in the field.

The cholesterol war: fake news vs. scientific based evidences

Chair: Helena Coutinho F. Oliveira (UNICAMP)

Speaker: Eder C. R. Quintão (FMUSP)

Short description: It is quite worrisome the flood of fake news and medical misinformation about the habit of eating cholesterol enriched diets that is spreading around through the virtual media in the last decade. About a hundred years of scientific research on this topic is being ignored simply because unfounded information spread faster than scientific findings through the web lay press. It is time to fight against this

seatback. Dr. Quintão is a renowned biochemist and medical doctor that has dedicated his whole carrier (> 40 years) studying Cholesterol Homeostasis.

The Immune-Pineal Axis - a chronopharmacological approach for integrating the timing in Physiology and Pathology
Chair: André Sampaio Pupo (UNESP)
Speaker: Regina P. Markus (USP)
Short description: This conference will discuss the basics of the Immune-Pineal Axis and how a chronopharmacological approach could improve therapeutic schedules in neurodegenerative diseases and cancer.

Advances and future perspectives for the study of the human pancreas
Chair: Everardo M. Carneiro (UNICAMP)
Speaker: Alejandro Caicedo (University of Miami)
Short description: The pancreatic islet is an endocrine organ that secretes the hormones insulin and glucagon to regulate glucose metabolism. Dysfunction or destruction of the pancreatic islet leads to diabetes. Islet endocrine cells receive multiple regulatory signals relaying information about changes in the internal and external environments to generate an adequate and efficient secretory response. Dr. Caicedo will present data on the autonomic innervation of the pancreatic islet, in particular, how efferent sympathetic nerves regulate islet blood flow to change plasma levels of insulin and glucagon and glucose metabolism. He will also present unpublished data on how sensory nerves relay information from the pancreatic islet to the brain. The take home message of the presentation is that the autonomic nerves have unexpected roles in regulating islet function and insulin release. To finish, he will discuss how a disruption in these nerve-endocrine interactions can lead to islet dysfunction and eventually to diabetes.

Aerobic exercise training as therapy for skeletal myopathy: relevance to heart failure and cancer
Chair: Ana Paula C. Davel (UNICAMP)
Speaker: Patricia C. Brum (EEFE-USP)
Short description: coming soon

Speaker: Manu Prakash (Stanford University)
Short description: coming soon

SESSIONS

Photobiomodulation and its applications
Chair: Marucia Chacur (ICB-USP)
Application of photobiomodulation in different animal models.
Marucia Chacur (ICB-USP)
Effect of photobiomodulation in different models of orofacial pain
Daniel de Oliveira Martins (ICB-USP)
Is there room for the use of photobiomodulation in the treatment of pain in medicine?
Hazem A. Ashmawi (FMUSP)
Light to treat pain: biophysics of the mechanisms of action and how to perform clinical and experimental procedures
Marcelo Victor P de Sousa (Bright Photomedicine)
Photobiomodulation Therapy as a tool to improve the quality of life in patients in differents types of pain
Nathali Cordeiro Pinto (FMUSP)

Why scientists should share their discoveries through different media not only by publishing papers?
Chair: Camilo de Lellis Santos (UNIFESP)
Science and Citizenship
Natália Pasternak (ICB-USP)
Podcasts, a simple way to connect scientists and public
Leandro A. Lobo (UFRJ)
Who's afraid of media exaggeration?
Carlos Orsi (Instituto Questão de Ciência)
Science in the media, science in the classrooms: the fight against misconceptions
Camilo de Lellis Santos (UNIFESP)

Regulation of muscle mass: cellular and molecular aspects
Chair: Claudia Mermelstein (UFRJ)
Calcium and calpain in muscle dystrophy
Claudia Mermelstein (UFRJ)
Role of miR-29 family in skeletal muscle mass control
Anselmo Moriscot (ICB-USP)
Does insulin/IGF-1 signaling mediate the effects of beta2-adrenergic agonists on skeletal muscle remodeling and function?
Dawit A. Gonçalves (EEFFTO-UFMG)
The role of extracellular matrix during myoblast migration
Ingo Riederer (FIOCRUZ)

Inflammation-induced alterations of the neurovascular unit
Chair: Daniel Adesse (Fiocruz)
Microvessel alterations in *Toxoplasma gondii* infected-mice
Daniel Adesse (Fiocruz)
Alcohol exposure during gestation impairs endothelial-astrocyte interactions in the embryonic cerebral cortex
Joice Stipursky (UFRJ)
Zika virus hampers blood vessels development in a murine model of congenital infection
Patrícia Pestana Garcez (UFRJ)
The role of TLR4 in the microvascular cerebral dysfunction in a model of metabolic syndrome
Vanessa Estato (Fiocruz)

New challenges to blindness treatment
Chair: Hilda Petrs-Silva (UFRJ)
Modulation of Endocannabinoid system induce neuroprotection in a murine model of retinitis pigmentosa
Lucianne Fragel Madeira (UFF)
Micro-RNAs and the regulation of stem cells and retinal degeneration
Carolina Beltrame Del Debbio (USP)
Non-viral vectors for retinal degeneration gene therapy
Armando da Silva Cunha Junior (UFMG)
Gene therapy for retinal ganglion cells - is it feasible?
Hilda Petrs-Silva (UFRJ)

Content versus process in modern cell biology teaching
Chair: Manoel Luis Costa (UFRJ)
On the basic concepts in cell biology
Manoel Luis Costa (UFRJ)
On the impact of technology in biology teaching methodologies
Miriam Struchiner (UFRJ)
The impact of recent process in cell biology teaching
Mauricio Roberto Pinto da Luz (Fiocruz)
Survey of major topics in cell biology
Claudia Mermelstein (UFRJ)

SESSIONS

Purinergic Signaling in Development and Disease
Chair: Henning Ulrich (IQ-USP)
Ecto-5-nucleotidase/CD73 contributes to the radiosensitivity of bladder cancer cells
Ana Maria de Oliveira Battastini (UFRGS)
Purinergic signaling in sepsis-induced liver injury
Robson Coutinho-Silva (UFRJ)
Purinergic Signaling in the Developing Retina
Ana Lucia Marques Ventura (UFF)
Therapeutic effects of purinergic receptors in neurodegenerative diseases
Henning Ulrich (IQ-USP)

Influence of microenvironment on tumor development
Chair: João Alfredo de Moraes (UFRJ)
Clues from the tumor-derived extracellular matrix to neighbor cells in the microenvironment
Christina Barja-Fidalgo (UERJ)
Neutrophil extracellular traps (NETs) as mediators of tumor progression
Robson de Queiroz Monteiro (UFRJ)
Adipose tissue derived extracellular vesicles modify tumoral cells behavior
Mariana Renovato Martins (UFF)
Effect of melanoma extracellular vesicles on neutrophil polarization
João Alfredo de Moraes (UFRJ)

Renin, angiotensins, bradykinin, noradrenaline, acetylations and oxidative stress: friends or foes in cardiorenal syndromes? In honor to the memory of Margarida de Mello Aires
Chair: Adalberto Vieyra (UFRJ)
Cardiorenal syndrome: the long road from kidney to heart
Marcela Sorelli Carneiro Ramos (UFABC)
Novel role of bradikynin and B2-receptors: regulation of collecting duct renin
Lucienne da Silva Lara (UFRJ)
The role of oxidative stress in the renal alterations underlying the onset of hypertension programmed by intrauterine undernutrition
Leucio Duarte Vieira (UFPE)
Renin-angiotensin system and acetylations: key elements in the cardiorenal alterations provoked by undernutrition and obesity
Humberto Muzi Filho (UFRJ)

Microenvironment and cell behavior
Chair: Patricia Gama (USP)
Mechanotransduction in tumor cells
Marcelo Lazzaron Lamers (UFRGS)
ADAMTS and tumor environment
Vanessa M Freitas (ICB-USP)
Hyperglycemic environment and cell behavior
Marinilce Fagundes dos Santos (ICB-USP)
Scaffolds and brain injury
Marimelia A Porcionatto (UNIFESP)

Pathogenesis of Chagas Disease
Chair: João Santana da Silva (FMRP-USP)
The Yin-and-Yang of the immune response: keeping the balance to decrease the burden of Chagas heart disease
Walderez O. Dutra (UFMG)
Consequences of controlling inflammation during Trypanosoma cruzi infection
Fabiana Simão Machado (UFMG)
The involvement of lipid kinases in the pathogenesis of Trypanosoma cruzi infection
Maria Claudia Silva (FMRP-USP)
Omics analysis in Chagas disease cardiomyopathy: a mitochondrial disease?
Edecio Cunha Neto (USP)

Immunology in health and disease
Chair: Marcelo T. Bozza (UFRJ)
Regulation of CD8 T cell differentiation and function by Polycomb group (PcG) proteins during acute and chronic infections
Renata Pereira (UFRJ)
Mucosal inflammation: quantitative vs. qualitative aspects of Treg cell imbalance
Fabio Barrozo do Canto (UFF)
Immunological scarring: understanding chronic effects of acute infections
Denise Morais da Fonseca (USP)
Combining in vivo imaging and high dimensional phenotyping to understand immune and metabolic development during life
Gustavo Batista de Menezes (UFMG)

SESSIONS

Noncoding RNAs in health and disease
Chair: Alice Cristina Rodrigues (ICB-USP)
Modulation of Muscle Development and Disease by Noncoding RNAs
Da-Zhi Wang (Harvard Medical School)
Integration of Transcriptomics and MicroRNA Analyses in Cancer Cachexia
Robson Francisco Carvalho (UNESP)
MicroRNAs mediate beneficial effects of exercise on the cardiovascular system
Edilamar Menezes de Oliveira (EEFE-USP)
Exosomal microRNAs as mediators of intertissue communication in obesity
Alice Cristina Rodrigues (ICB-USP)

New aspects of endocrine disruptors
Chair: Maria Izabel Chiamolera (UNIFESP)
Experience with the European Commission for Endocrine Disruptors
Maria Tereza Nunes (ICB-USP)
Zebrafish as an alternative method for toxicity assessment of emerging environmental contaminants
Lilian Cristina Pereira (UNESP-Botucatu)
Endocrine disruptors and intrauterine programming of thyroid dysfunctions
Caroline Serrano do Nascimento (Hospital Albert Einstein)
Endocrine disruptors and the brain
Gisele Giannocco (UNIFESP-Diadema)

Pharmacological changes in cell senescence and consequences for the aging process and neurodegenerative diseases
Chair: Tânia Viel (USP)
Mass spectrometric technology to understand molecular mechanisms that underlie aging
Birgit Schilling (Buck Institute for Research on Aging)
Cellular senescence is induced by the environmental neurotoxin paraquat and contributes to neuropathology linked to Parkinson´s disease
Julie Kay Andersen (Buck Institute for Research on Aging)
Uncovering genes and small molecules that prolong lifespan through enhanced molecular stability
Gordon Lithgow (Buck Institute for Research on Aging)
Bradykinin treatment increased the longevity of hippocampal organotypic cultures from old mice
Hudson de Sousa Buck (FCMSCSP)

Several aspects of zebrafish as a research model
Chair: Maria Izabel Chiamolera (UNIFESP)
Unraveling microRNAs function in zebrafish: strategies and advances
Danillo Pinhal (UNESP-Botucatu)
The role of anti-Müllerian hormone signaling during sex differentiation and gametogenesis of teleost fish
Rafael Henrique Nóbrega (UNESP-Botucatu)
Feeding, personality and housing as a candidate source for variation in results from different laboratories around the world
Leonardo José Gil Barcellos (UPF)
Sanitary control in zebrash and its implication in experimental results
Bianca Ventura (FMUSP-SP)

Risks to the environmental and health due to the uranium mining in Brazil
Chair: Silvia Maria Velasques de Oliveira (SBBN)
Nuclear fuel cycle in Brazil
Aquilino Senra (COPPE/UFRJ)
Biological effects of chronic exposures in the neighborhood of nuclear fuel cycle facilities
Dunstana Melo (Melohill Technology)

Immunomodulators and intestinal homeostasis
Chair: Valbert Nascimento Cardoso (UFMG)
Probiotic Bacteriophages- A novel strategy to control infection and inflammation.
Luis Ricardo Goulart (UFU)
Use of lactic acid bacteria genetically modified as immunomodulators to promote intestinal homeostasis
Vasco Ariston Carvalho de Azevedo (UFMG)
Lipids as immunomodulatory agents
Tatiani Uceli Maioli (UFMG)

Transgenics and Biosafety
Chair: Anibal E. Vercesi (UNICAMP)
Impacts of adopting OMGs
Edivaldo Velini (UNESP)
OGMs: a mobile target
Carlos Orsi (Instituto Questão de Ciência)
The risk of miscommunicating risks
Natalia Pasternak (Instituto Questão de Ciência)
History and importance of the Brazilian biosafety law
Walter Colli (IQ-USP)

SESSIONS

Therapies with stem cells and extracellular vesicles in choric neurodegenerative diseases
Chair: Pedro Leme (UFRJ)/ Patricia Rocco (UFRJ)
Therapies with stem cells and extracellular vesicles in respiratory diseases
Patricia Rocco (UFRJ)
Extracellular vesicles therapy in kidney diseases
Danilo Cândido de Almeida (UNIFESP/USP)
Stem cells therapy in pulmonary arterial hypertension – a new perspective
Pedro Leme (UFRJ)
Challenges for cardiac repair and regeneration after myocardial infarction
José E. Krieger (Incor-HC-USP)

SESSIONS WITH ORAL PRESENTATION OF ABSTRACTS

New insights into thyroid hormones and TSH actions
Chair: Rodrigo Soares Fortunato (UFRJ)
Is there a role of TSH on thyroid and breast cancer?
Rodrigo Soares Fortunato (UFRJ)
Autocrine actions of thyroid hormone
Rafael Benjamin Araújo Dias (UNINOVE)
Oral presentation 1: TBD
Oral presentation 2: TBD

Neuroscience of learning and Brazilian education
Chair: Camilo Lellis-Santos (UNIFESP)
Science for education: a window of opportunity for Brazil
Robert Lent (UFRJ)
Universal design for learning: accommodating individual learning differences
Claudia Berlim de Mello (UNIFESP)
Oral presentation 1: TBD
Oral presentation 2: TBD

Machanotransduction in biological systems
Chair: Ayumi Aurea Miyakawa (InCor-USP)
Mechanotransduction in the cell-matrix interface
Christoph Ballestrem (The University of Manchester)
Crp3 and vascular remodeling by mechanical stress
Ayumi Aurea Miyakawa (InCor-USP)
Oral presentation 1: TBD
Oral presentation 2: TBD

Development, aging and cell functions
Chair: Patricia Gama (ICB-USP)
Development, diet and hepatic functions
Gustavo Menezes (UFMG)
Breastfeeding and the priming of gastric cell functions
Patricia Gama (ICB-USP)
Oral presentation 1: TBD
Oral presentation 2: TBD

Balance control and visual function: basic and applied approaches
Chair: Givago da Silva Souza (UFPA)
The role of the visual information in balance control
Ana Francisca Rozin Kleiner (UFSCar)
Balance control in low-vision patients
Givago da Silva Souza (UFPA)
Oral presentation 1: TBD
Oral presentation 2: TBD

Mechanisms conditioning the beneficial effects of exercise in cardiovascular diseases
Chair: Lisete Compagno Michelini (ICB-USP)
Autonomic dysfunction in heart failure: Effects of exercise
Joseph Francis (Louisiana State University, USA)
Molecular mechanisms in the genesis of hypertension: Exercise benefits
Gustavo Santos Masson (ICB-USP)
Oral presentation 1: TBD
Oral presentation 2: TBD

New approaches in animal vision research
Chair: Leonardo Dutra Henriques (USP)
Evaluation of New World monkeys color vision with an adaptation of Cambridge Colour Test
Leonardo Dutra Henriques (USP)
Suprathreshold chromatic discrimination in tufted capuchin monkeys (Sapajus apella)
Letícia Miquilini de Arruda Farias (UFPA)
Oral presentation 1: TBD
Oral presentation 2: TBD

Use of noise to mask color and luminance contrast
Chair: Eliza M. C. Brito Lacerda (CEUMA University)
Detection of luminance noise: influence of the stimulus parameters
Eliza M. C. Brito Lacerda (CEUMA University)
Color and luminance discrimination masked by luminance noise
Terezinha M. Gonçalves de Loureiro (UFPA)
Oral presentation 1: TBD
Oral presentation 2: TBD

Advances in muscle physiology
Chair: Flavia Bloise (UFRJ)
Skeletal muscle physiology during the nonthyroidal illness syndrome
Flavia Bloise (UFRJ)
Muscle mitochondrial function in a model of dystrophic mice
Claudia Mermelstein (UFRJ)
Oral presentation 1: TBD
Oral presentation 2: TBD

SESSIONS WITH ORAL PRESENTATION OF ABSTRACTS

Advances in metabolic programming-induced obesity and comorbidities
Chair: Everardo Magalhães Carneiro (UNICAMP)
Obesity and its comorbidities
Licio A. Velloso (UNICAMP)
Metabolic programming and obesity
Patrícia Cristina Lisboa (UERJ)
Oral presentation 1: TBD
Oral presentation 2: TBD

Heart failure-induced cardiorenal diseases: potential targets.
Chair: Adriana C. C. Girardi (InCor- HC-FMUSP)
Cardioprotection conferred by antidiabetic drugs in heart failure: a renal proximal tubule perspective.
Adriana C. C. Girardi (InCor-HC-FMUSP)
The potential benefits of exercise training on vascular disorders induced by heart failure
Luciana V. Rossoni (ICB-USP)
Oral presentation 1: TBD
Oral presentation 2: TBD

Mouse transgenesis and CRISPR
TBD

Scientific reproducibility crisis
TBD

COURSES (Classes in English or Portuguese)

Marketing para cientistas: da bancada a concursos
Coordenador: Helder Nakaya (USP-SP)
Aula 1- Mitos e fatos na carreira científica
Helder Nakaya (USP-SP)
Aula 2- Escrita científica e fazendo figuras impactantes
Helder Nakaya (USP-SP)
Aula 3- Desenvolvendo sua carreira científica
Helder Nakaya (USP-SP)

Redação Científica: Artigos, Projetos e Ética
Coordenador: Walter Araujo Zin (UFRJ)
Aula 1- Redação de Artigo Científico
Walter Araujo Zin (UFRJ)
Aula 2- Ética na Redação e Publicação de um Artigo
Walter Araujo Zin (UFRJ)
Aula 3- Elaboração de Projeto de Pesquisa
Dalton Valentim Vassallo (UFES/ EMESCAM)

Imagens de Bases Moleculares
Coordenador: Valbert Nascimento Cardoso (UFMG)
Aula 1- Imagens cintilográficas (SPECT e PET)
Simone Odilia Antunes Fernandes (UFMG)
Aula 2- Nanoformulações para diagnóstico por imagens
Valbert Nascimento Cardoso (UFMG)
Aula 3-Nanoformulações para tratamento
Valbert Nascimento Cardoso (UFMG)

Revisiting the Physiology Teaching
Coordenadora: Maria Tereza Nunes (ICB- USP)
Aula 1- Who am I?" a game-based teaching tool to promote endocrine physiology learning
Maria Tereza Nunes (ICB- USP) e
João Kleber Neves Ramos (ICB- USP)
Aula 2- Dramatization in Physiology teaching: date to do different
Lucila Ludmila Paula Gutierrez (UFCSPA)
Aula 3- Using arts to foster the learning of scientific concepts
Camilo Lellis-Santos (UNIFESP, Diadema – SP)

Aspectos fisiológicos e comportamentais nas pesquisas com fêmeas
Coordenadora: Fabiana Cardoso Vilela Giusti (UNIFAL-MG)
Aula 1- Aprendendo a trabalhar com fêmeas
Bruna Kalil (UNIFAL-MG)
Aula 2- Lactação e comportamento materno
Fabiana Cardoso Vilela Giusti (UNIFAL-MG)
Aula 3- O funcionamento do sistema circadiano em fêmeas
Maristela de Oliveira Poletini (UFMG)

Desreguladores endócrinos
Coordenadora: Denise Pires de Carvalho (UFRJ) e Maria Izabel Chiamolera (UNIFESP)
Aula 1- Introdução aos Desreguladores Endócrinos
Andrea Claudia Freitas Ferreira (UFRJ)
Aula 2- Contaminantes Organoestânicos e o Sistema Endócrino e Reprodutor
Jones B. Graceli (UFES)
Aula 3- Plasticantes, Herbicidas e Metais Pesados
Glaecir Roseni Mundstock Dias (UFRJ)

How to make the most of optical microscopy
Coordenador: Manoel Luis Costa (UFRJ)
Aula 1-Identifying the major variables in optical microscopy
Manoel Luis Costa (UFRJ)
Aula 2-Choosing the best procedure for each inquiry in optical microscopy
João Ricardo Lacerda de Menezes (UFRJ)
Aula 3- Demonstration of the possibilities and limitations in optical microscopy and image processing
Manoel Luis Costa (UFRJ)

Avaliação cardiovascular: adequando o método à hipótese
Coordenadora: Luciana V. Rossoni (ICB- USP)
Aula 1- Avaliando a função cardíaca
Dalton Valentim Vassallo (UFES/ EMESCAM)
Aula 2- Avaliando a função vascular
Luciana Venturini Rossoni (ICB- USP)
Aula 3-Avaliando a efetividade dos protocolos de treinamento físico
Patrícia C. Brum (EEFE-USP)

COURSES (Classes in English or Portuguese)

Proteomics for everyone
Coordenador: Giuseppe Palmisano (ICB-USP)
Aula 1- Proteomics tools and applications to biology
Giuseppe Palmisano (ICB-USP)
Aula 2- Mass spectrometry and bioinformatics for protein identification and quantification
Giuseppe Palmisano (ICB-USP)
Aula 3- Identification of protein phosphorylation by proteomics approaches
Giuseppe Palmisano (ICB-USP)

Molecular pathways in cell death subroutines
Coordenadora: Giselle Zenker Justo (UNIFESP)
Aula 1- Overview of cell death: Regulated and accidental cell death; classification of cell death subroutines
Giselle Zenker Justo (UNIFESP)
Aula 2- Molecular pathways of major regulated cell death modalities.
Giselle Zenker Justo (UNIFESP)
Aula 3- Metabolic control of cell death.
Giselle Zenker Justo (UNIFESP)

Advanced tissue-based techniques in drug development, with emphasis on toxicologic pathology and safety pharmacology applications
Coordenador: Gilberto De Nucci (UNICAMP/USP)
Aula 1- Formalin-fixed paraffin-embedded (FFPE) tissue blocks/sections: review of molecular pathology techniques (relevance and limitations**)**
Frédéric Gervais (Citoxlab, France)
Aula 2- Advanced in situ hybridization techniques: RNAScope
Frédéric Gervais (Citoxlab, France)
Aula 3- Core techniques in the development of therapeutic oligonucleotides
Cécile Sobry (Citoxlab, France)

O Tecido muscular esquelético: da estrutura a aspectos adaptativos
Coordenador: Anselmo Moriscot (ICB- USP)
Aula 1-Aspectos estruturais do músculo estriado esquelético e correlações com função
Anselmo Moriscot (ICB- USP)
Aula 2- Mecanismos celulares e moleculares controladores da massa muscular esquelética
Luiz Carlos Navegantes (FMRP-USP)
Aula 3- Mecanismos celulares e moleculares envolvidos na resposta regenerativa muscular
Anselmo Moriscot (ICB- USP)

Ritmos Biológicos: mais próximo da sua pesquisa que você imagina
Coordenadora: Fernanda Gaspar do Amaral (UNIFESP)
Aula 1- Análises Rítmicas na Pesquisa Experimental
Fernanda Gaspar do Amaral (UNIFESP)
Aula 2- Análises Rítmicas na Pesquisa Clínica
Maria Paz Hidalgo (UFRGS)
Aula 3- Discussão Guiada de Projetos - Onde Estão os Ritmos e Como Lidar Com Eles?
Maria Paz Hidalgo (UFRGS)

Modelos animais em psicofarmacologia
Coordenador: Mauricio Schuler Nin (UFRGS)
Aula 1- Noções básicas de neuroanatomia, neurofisiologia, etologia e psicofarmacologia
Helena Maria Tannhauser Barros (UFCSPA)
Aula 2- Modelos animais em depressão e estresse pós-traumático
Mauricio Schuler Nin (UFRGS)
Aula 3- Modelos animais em ansiedade e dependência química
Helena Maria Tannhauser Barros (UFCSPA)

Modelagem animal: o que preciso fazer para ter resultados precisos
Coordenador: Marcel Frajblat (UFRJ)
Aula 1- Ciência e modelagem animal
Marcel Frajblat (UFRJ)
Aula 2-Fatores que afetam os resultados de uma pesquisa
Marcel Frajblat (UFRJ)
Aula 3-Dor e controle da dor em animais de laboratório
Marcel Frajblat (UFRJ)

Canais para íons em membranas celulares
Coordenador: Antônio Carlos Cassola (ICB- USP)
Aula 1- Técnicas para a observação experimental de canais unitários: "Patch Clamp" e Análise de Ruído
Antônio Carlos Cassola (ICB- USP)
Aula 2 -Analise estocástica de canais unitários
Antônio Carlos Cassola (ICB- USP)
Aula 3- Topologia de canais para cátions assemelhados aos canais dependentes de voltagem
Antônio Carlos Cassola (ICB- USP)

COURSES (Classes in English or Portuguese)

Bioimpressão 3D na Medicina Regenerativa
Coordenadora: Marimelia Porcionatto (UNIFESP)
Imprimindo tecidos e órgãos: biotintas e células
Marimelia Porcionatto (UNIFESP)
Bioimpressão 3D como ferramenta para
recapitular o desenvolvimento e doenças
Marimelia Porcionatto (UNIFESP)
Desafios e Perspectivas da Bioimpressão 3D
Marimelia Porcionatto (UNIFESP)