



20th IUPAB International Congress, 45th SBBf Congress and 50th Annual Meeting of SBBq

Scientific Program

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October 4th – 9 am to 9:30 am – Opening Ceremony
04/10 – 9:30 to 10:30 am

Keynote Lecture 1

Chair: Manuel Prieto, iBB-IST, Portugal

Richard Henderson, MRC Labs, Cambridge, UK
Impact of single particle electron cryo-microscopy in structural biology

04/10 – 1:30 to 2:30 pm

Keynote Lecture 2

Chair: Leandro Barbosa, IF-USP, Brazil

Carlos Bustamante, University of Berkeley, USA
Co-temporal Force and Fluorescence Measurements Reveal a Ribosomal Gear-shift Mechanism of Translation Regulation by mRNA Secondary Structures

05/10 – 9:00 to 10 am

Keynote Lecture 3

Chair: Leda Q. Vieira, UFMG, Brazil

Giorgio Trinchieri, Center for Cancer Research, NCI, NIH, Maryland, USA
Targeting the microbiome in cancer immunotherapy

06/10 – 9:00 to 10 am

Keynote Lecture 4 - Bei Shizhang

Chair: Pingsheng Liu, Institute of Biophysics, Chinese Academy of Sciences

Tao Xu, Institute of Biophysics, Chinese Academy of Sciences, China

Cryogenic superresolution correlative light and electron microscopy on the frontier of subcellular imaging

06/10 – 1:15 to 2:15 pm

Keynote Lecture 5

Chair: Koby Levy, Weizmann Institute, Israel

Michael Levitt, Stanford University, USA

Lessons from 620 Days Studying Covid-19

07/10 – 9:00 to 10 am

Keynote Lecture 6

Chair: Maurício da Silva Baptista, IQ-USP, Brazil

Ohara Augusto, University of São Paulo Brazil
Carbon dioxide redox metabolites in eustress and oxidative distress

07/10 – 1:15 to 2:15 pm

Keynote Lecture 7

Chair: Daniel Peluffo, UDELAR, Uruguay

Ramon Latorre, University of Valparaiso, Chile
Calcium-driven voltage sensing and the role of charged residues in the voltage sensor domain of BK channels

08/10 – 9:00 to 10 am

Keynote Lecture 8

Chair: Rosangela Itri, IF-USP, Brazil

Angela Gronenborn, University of Pittsburg, USA
The awesome power of Fluorine NMR

08/10 – 12:30 to 1:00 pm

Keynote Lecture 9: IUPAB Award

Chair: John Baenziger, University of Ottawa, Canada

Yoav Shechtman, Technion, Haifa, Israel
Next generation localization microscopy - or - how and why to ruin a perfectly good microscope

08/10 – 1:00 to 2:00 pm

Keynote Lecture 10: IUPAB Award

Chair: Juan Carmelo Gómez Fernandez, Universidad de Murcia, Spain

Anthony Watts, University of Oxford, UK

Lipids are important: Avanti/IUPAB Award lecture

Symposia

October 4th – 10:45 am to 12:45 pm

Room 1

SP-01) Drug design and delivery

Chair: **Joke Bouwstra** (Leiden University, The Netherlands)

Speakers:

Peter Swaan, University of Maryland, USA

Targeting Membrane Transporters for Oral Drug Delivery

Silvia Alonso, Universidad de Quilmes, Argentina

Polymer-Based Nanoparticles: Fabrication and Health Applications

Joke Bouwstra, Leiden University, The Netherlands

Microneedles and nanoparticles for dermal vaccination

Adriana R. Pohlmann, Universidade Federal do Rio Grande do Sul, Brazil

Interfacial reactions in water to functionalize the surface of polymeric nanocapsules intended for drug targeting

October 4th – 10:45 am to 12:45 pm

Room 2

SP-02) Protein Structure Dynamics and Functions

Chair: **Richard C. Garrat** (IFSC-USP)

Speakers:

Frances Separovic, University of Melbourne, Australia

Structure determination of antimicrobial peptides in live bacteria

Marius Schmidt, University of Wisconsin

Time-Resolved Crystallography at X-ray Free Electron Lasers

Bonnie A. Wallace, University of London, UK

Structure, Function, and Dynamics of Voltage-Gated Sodium Channels and their Complexes with Drug

Andrea Dessen, LNBio, Campinas and IBS, Grenoble, France

Structural snapshots of bacterial cell wall biosynthesis

October 4th – 10:45 am to 12:45 pm

Room 3

SP-03) Biological Photosensors and their Applications in Optogenetics

Chair: **Silvia Braslavsky**, MPI, Germany

Speakers:

Masahide Terazima, Kiyoto University, Japan

Time-resolved detection of association/dissociation reaction and conformation changes of photosensor proteins towards applications in Optogenetics

Andrew Woolley, University of Toronto

Light switchable protein engineering with photoactive yellow protein

Matias Zurbriggen, University of Dusseldorf, Germany

Optogenetic control of biological processes: from photoreceptor engineering to their implementation in microbial, animal and plant systems

Leonardo Vinicius Monteiro de Assis, University of Lübeck, Germany

An overview of the photosensitive system of the skin, a novel therapeutic target?

October 4th – 2:45 to 4:45 pm

Room 1

SP-04) Macromolecular Machines and Switching Devices

Chair: **Alejandro Buschiazzo**, Inst Pasteur, Montevideo, Uruguay

Speakers:

Axel Brunger, Stanford University, USA

Molecular Mechanisms of Neuronal Exocytosis

Charles Sindelar, Yale University, USA

Honing in on motile filamentous assemblies by cryo-EM

Alejandro Buschiazzo, Institut Pasteur Montevideo, Uruguay

Watching bacterial sensors as they move: pliable proteins that transmit signals

Alessandra Del Giudice, Sapienza University of Rome, Italy

Regulation of the photosynthetic AB-GAPDH via self-assembly

Leticia Irene Llarrull, Universidad de Rosario, Argentina

*Functional characterization of β -lactam sensor proteins in *Staphylococcus aureus**

October 4th – 2:45 to 4:45 pm

Room 2

SP-05) Chemical Biology

Chair: **Randall Peterson** (University of Utah)

Speakers:

Sara Sattin, University of Milan, Italy

Probing bacterial survival strategies: inhibitors of (p) ppGpp synthesis

Frederico Gueiros, USP, Brazil

Many birds with one stone: targeting a universal signaling pathway of bacteria to improve antimicrobial therapy

Randall Peterson, University of Utah, USA

Chemo-Optogenetic Probes for Light-Controlled Switching of Ion Channel Activity

Mariana Chaves Micheletto, Universidade Federal do Rio de Janeiro, Brazil

Interaction of genetically encoded photosensitizers with scintillating nanoparticles for X-PDT

Isaac de Araujo Matos, Universidade de São Paulo, Brazil

Discovery of Nanomolar Myeloperoxidase Inhibitors with Anti-Arthritis Properties: A Computational, in vitro and in vivo study

October 4th – 2:45 to 4:45 pm

Room 3

SP-06) 24th Prize for Young Talent in Life Sciences

Chair: Juliana Fietto, UFV

To be announced

October 5th - 6:30 to 8:30 am

Room 1

Biophysical Reviews Journal

Damien Hall - (Editor)	Kuniaki Nagayama (Japan)	Steven Harding (UK)
Meran Lloyd-Owen (Manager)	N. Jaganathan (India)	Rosangela Itri (Brazil)
Joshua Ho (Hong Kong China)	German Rivas (Spain)	Wilma Olson - (USA)

October 5th - 10:15 am to 12:15 am

Room 1

SP-07) Deforming membranes

Chair: **Patricia Basserau**, Institut Curie (France)

Speakers:

Michael Kozlov, Tel Aviv University, Israel

Mechanism of shaping membrane nanostructures of Endoplasmic Reticulum

Rumiana Dimova, Max Planck, Germany

To bud or not to bud: remodeling of artificial cells

Paul A Janmey, Univ. of Pennsylvania, USA

Control of actin assembly at the cell membrane by phosphatidylinositol 4,5 bisphosphate

Luís Guilherme Mansor Basso, UENF, RJ

Lipid bilayer membrane as a possible target for inhibition of the SARS-CoV-2 Spike-mediated membrane fusion process

Clara Malizia Leal Ferreira da Motta, UFRJ, R

The SARS-CoV-2 nucleocapsid protein N-terminal domain phase separation is triggered by the serine-rich region and modulated by TRS binding

October 5th - 10:15 am to 12:15 am

Room 2

SP-08) Systems biology and biomarkers for human disorders

Chair: **Peter Nilsson** (KTH Royal Institute of Technology, Stockholm)

Speakers:

Hiroki Ueda, RIKEN Center for Biosystems Dynamics Research, Japan

Systems Biology of Mammalian and Human Sleep/Wake Cycles ~Phosphorylation Hypothesis of Sleep~

Daniel Martins de Souza, Unicamp, São Paulo, Brazil

The effects of COVID-19 in the human brain

Peter Nilsson, KTH Royal Institute of Technology, Stockholm, Sweden

Development and utilization of a highly specific and sensitive multiplex serological COVID-19 assay

Wanessa Fernanda Altei, Hospital do Amor de Barretos, Brazil

Invasive behaviour of breast cancer cells as a response to hypoxic signalling via extracellular vesicles

Augusto Frantz Uberti, Pontifícia Universidade Católica do Rio Grande do Sul, Brazil

Urease of Helicobacter pylori: role in neuroinflammation

October 5th - 10:15 am to 12:15 am

Room 4

SP-09) Metabolism and Bioenergetics

Chair: **Alicia J. Kowaltowski**, USP, Brazil

Speakers:

Antonio Zorzano, IRB Barcelona, Spain

Mitochondrial fusion proteins and their role in metabolic disorders.

Marcos Chiaratti, UFSCAR, Brazil

A role for mitofusins in oocyte development: impact on fertility and offspring viability

Valentina Parra, University of Chile, Chile

Systems Biology Approach of the Down Syndrome Critical Region 1 gene, RCAN1: implications in mitochondrial biology, cellular proliferation, and differentiation

Caroline Simões Pereira, University of São Paulo, Brazil

Mechanism of rotenone inhibition of respiratory complex I

October 5th - 1:00 to 3:00 pm

E-poster Session

October 5th - 3 to 5 pm

Room 1

SP-10) Biophotonics

Chairs: **Georg Wondrak** and **Martha S. Ribeiro**

Speakers:

Martha S. Ribeiro, USP, Brazil

Light-based non-thermal therapy: from basis to clinical applications

Georg Wondrak, University of Arizona, USA

The water-isotopologue deuterium oxide (D2O; heavy water): From biophysical properties to experimental cancer therapeutic

Martina Meinke, University of Berlin, Germany

Wavelength, dose skin type and skin model related radical formation in skin

Tania Mateus Yoshimura, Nuclear and Energy Research Institute, Brazil

Low power light triggers opposite effects on stem cells: influence of the wavelength and culture conditions

October 5th - 3 to 5 pm

Room 2

SP-11) Microbiomes: human and environmentalChair: **Leda Quercia Vieira** - UFMG, Brazil

Speakers:

Lars Engstrand, Karolinska Institutet, Sweden
Studies of the human microbiome in health and disease

João C. Setubal, IQ-USP, Brazil
Metagenome-assembled genomes and their contribution to microbiome studies

Emmanuel Dias Neto, AC Camargo Center, Brazil
Microbiome studies of the built environment: from commensals, to cancer & COVID-19

Jumpei Yamagishi, The University of Tokyo, Japan
Microbial Potlatch: The advantage of leakage of essential metabolites and resultant symbiosis of diverse species

Ivan Rosa e Silva, Queen Mary University of London, UK
Molecular mechanisms underlying the role of the centriolar CEP164-TTBK2 complex in human ciliopathies

October 5th - 3 to 5 pm

Room 3

SP-12) Molecular and Cell ImagingChair: **Paulo Bisch** (UFRJ)

Speakers:

Fernando Stefani, University Buenos Aires, Argentina
Far-field fluorescence nanoscopy with sub-10 nm resolution

Enrico Gratton, University of California, USA
Single cell physiological characterization in living tissue. Determination of cell fate

Marco Capitanio, LENS, University of Florence, Italy
Alpha-catenin forms a cooperative and asymmetric catch bond with F-actin to regulate cell junction fluidity

Sara Anselmo, University of Palermo, Italy
Advanced fluorescence microscopy techniques to study the interaction of amphiphilic peptides with model membranes

Fabiana Avila Carneiro, Universidade Federal do Rio de Janeiro, Brazil
Study of SARS-CoV-2 morphogenesis and interaction with the cell by transmission and high resolution scanning electron microscopy

October 5th - 5:30 to 7:30 pm**50 Anos da Pós Graduação em Bioquímica da FMRP-USP**

Chair: Vitor M. Faça

October 6th - 9 to 10 am

Room 1

SP-13) Ionic channels and membrane transportersChair: **John Baenziger**, University of Ottawa, Canada

Speakers:

Francisco Bezanilla, University of Chicago, USA*Sensing voltage and opening of ion channels*

Alexander I. Sobolevsky, Columbia University, USA
Structural mechanism of heat-induced opening of a temperature-sensitive TRP channel

Renae Ryan, University of Sydney, Australia
Glutamate transporters contain a conserved chloride channel with two hydrophobic gates

John Baenziger, University of Ottawa, Canada
Conformational transitions and ligand-binding to a lipid-sensitive muscle-type acetylcholine receptor

October 6th - 9 to 10 am

Room 2

SP-14) Biomolecular association and dynamicsChair: **Paul Whitford**, Northeastern University College of Science (USA)

Speakers:

Andrei Korostelev, University of Massachusetts, USA
Time-resolved cryo-EM visualizes the structural dynamics of translation

Hue Sun Chan, University of Toronto, Canada
Theory of Protein Phase Separation in Biomolecular Condensates

Pablo I.D. Dans Puiggros, Uruguay
40 Years Learning from the Sequence-Dependent Mechanical Properties of B-DNA

Koby Levy, Weizmann Institute, Israel
Diffusion of proteins along biopolymers: from biophysics to function

October 6th - 9 to 10 am

Room 3

SP-15) Gender in ScienceChair: **Maria Cristina Nonato**, FFCLRP-USP, Brazil and **David Crossman**, New Zealand, University of Auckland**Carla Mattos**, Northeastern University, USA**Frances Separovic**, University of Melbourne, Australia**Lauren Arendse**, University of Cape Town, South Africa**Milagros Medina**, University of Zaragoza, Spain

Pimchai Chaiyen, Institute of Science and Technology (VISTEC), Thailand

October 6th - 2:30 to 3:30 pm

Exhibitor Presentation

To be announced

October 6th - 3:30 to 4:30 pm

Exhibitor Presentation

To be announced

October 7th - 10:15 am to 12:15 pm

Room 1

SP-16) Protein Folding Misfolding and Unfolding

Chair: **Vladimir Uversky** (University of South Florida, USA)

Speakers:

Prakash Kulkarni, City of Hope National medical Center, USA.

Protein conformational dynamics and phenotypic switching

Gonzalo de Prat-Gay, Protein Structure-Function and Engineering Lab., Fundación Instituto Leloir and IIBBA-CONICET

Liquid-liquid phase separation and assembly of viral factories: molten globule does the trick

Orkid Coskuner-Weber, Turkish-German University, Molecular Biotechnology Turkey

In Vivo Effects in Alzheimer's and Parkinson's Diseases: A Computational Biophysicists Perspective

Alexander V. Fonin, Russia

The new view of PML-bodies formation

October 7th – 10:15 am to 12:15 pm

Room 2

SP-17) EBSA Symposium on "Translational Biophysics"

Chairs: **Anthony Watts** and **Jesús Pérez-Gil**

Speakers:

Amitabha Chattopadhyay, Centre for Cellular & Mol Biology, Hyderabad, India

Cholesterol-dependent Oligomerization and Endocytosis of GPCRs: Novel Insights in Therapeutics

Anthony Wilkinson, York University, UK

Drug Discovery in Parasitic and Viral Diseases Using Protein Lipidation as a Target

Peter Pohl, Vienna University, Austria

Water transport through membrane channels

Jesús Pérez-Gil, President of EBSA, Universidad Complutense, Madrid, Spain

Interfacial Biophysics to Restore the Respiratory Surface under Breathing Mechanics

October 7th – 10:15 am to 12:15 pm

Room 3

SP-18) Autophagy: mechanisms and applications

Chair: **Marcelo Mori**, Unicamp, São Paulo, Brazil

Speakers:

Maho Hamasaki, Osaka University, Japan

Autophagy plays an important role in clarifying damaged organelles

Julio C.B. Ferreira, USP, Brazil

Targeting autophagy in skeletal muscle diseases

Louis R. Lapierre, Brown University, USA

Location, location, location: Autophagy proteins interact with organelles to modulate lifespan.

Nektarios Tavernarakis, Institute of Molecular Biology and Biotechnology, Greece

Autophagic pathways in neuronal physiology and pathology during ageing

October 7th – 2:30 to 4:30 pm

Room 1

SP-19) Membrane Simulations

Chair: **Mikko Karttunen** (Canada)

Speakers:

Peter Tieleman, University of Calgary, Canada

Insights in lipid-protein interactions from computer simulations

Mikko Karttunen, Western University, Canada

Nanocellulose-membrane contacts, insights from Molecular Dynamics simulation

Syma Khalid, University of Southampton, UK

Computational assays of bacterial cell envelopes: doing microbiology with computers

Thereza Amelia Soares da Silva, UFPE, Brazil

SuAVE (Surface Assessment via Grid Evaluation) for Every Surface Curvature and Every Cavity Shape

October 7th – 2:30 to 4:30 pm

Room 2

SP-20) Systems Biologics: At the interfaces of engineered proteins, their cell surface receptors and cellular molecular networks

Chair: **Stephen Michnick** (Canada)

Speakers:

Madan Babu, St. Jude Children's Research Hospital

Variation in GPCR signaling: Implications for drug discovery

Sachdev Sidhu, University of Toronto, Canada

Systems Biologics: Large-Scale Engineering of Modulators of Protein Networks

Stephen Michnick, University of Montreal, Canada

Changes of Cell Biochemical Network States Revealed in Protein Homomeric Complex Dynamics

Emerson Rodrigo Da Silva, Universidade Federal de São Paulo, Brazil

Biophysics of peptiplexes based on cell penetrating peptides

October 7th – 2:30 to 4:30 pm

Room 3

SP-21) IUBMB Symposium: Science Education

Chair: **Manuel João Costa**, University of Minho, Portugal

Speakers:

Erin Dolan, University of Georgia, USA

Course-based undergraduate research experiences: what if the treatment is a CURE?

Luciane V. Mello, University of Liverpool, UK

Reflecting and evidencing transferable skills

Manuel João Costa, University of Minho, Portugal

Evidence-based post-pandemic biochemistry and molecular biology education: redesigning courses to enhance the student and teacher experiences

Vera Maria Treis Trindade, Universidade Federal do Rio Grande do Sul, Brazil

Biokimi App: Interactive Study of Hepatic Glycolysis and Gluconeogenesis Regulations

October 7th – 4:30 to 6:30 pm

E-poster Session

October 8th –10:15 am to 12:15 pm

Room 1

SP-22) Scissioning membranes

Chair: **Rumiana Dimova**, Max Planck, Germany

Speakers:

Jeanne Stachowiak, Univ of Texas, Austin, USA

Intrinsically disordered proteins organize and shape cellular membranes

Patricia Basserau, Institut Curie, France

ESCRT-III complexes assembling on membranes

Markus Deserno, Carnegie Mellon University, USA

The role of scaffold reshaping and disassembly in dynamin driven membrane fission

Ernesto Ambroggio, Universidad de Cordoba, Argentina

The interaction of Dengue and Zika capsids with oligonucleotides and membranes generate liquid-liquid phase separations.

October 8th –10:15 am to 12:15 pm

Room 2

SP-23) Redox Biology

Chair: **Rafael Radi**, UDELAR, Uruguay

Speakers:

Rafael Radi, UDELAR, Uruguay

Mitochondrial formation, catabolism and toxicity of peroxynitrite

Kostas Tokatlidis, University of Glasgow, UK

Redox control of mitochondria biogenesis as a cellular stress response mechanism

Luis E.S. Netto, USP, Brazil

Mechanisms of peroxiredoxins targeting to mitochondrial subcompartments

Valdecir Farias Ximenes, Universidade Estadual Paulista, Brazil

Experimental Studies and Computational Modeling on Cytochrome C Reduction by Quercetin: the role of oxidability and binding affinity

Mariana Juliani do Amaral, Universidade Federal do Rio de Janeiro, Brazil

The antioxidant role of the prion protein explained by copper storage in liquid condensates

October 8th –10:15 am to 12:15 pm

Room 3

SP-24) Biophysics of immune system

Chair: **Jean-Marie Ruyschaert**, Université Livres de Bruxelles, Belgium

Speakers:

Nicholas J. Gay, University of Cambridge, UK

Structure and dynamics of signalling complexes in the innate immune response and inflammation.

Jean-Marie Ruyschaert, Université Livres de Bruxelles, Belgium

New activators of the innate system: from assembled lipids to amyloids

Roman Jerala, National Institute of Chemistry, Slovenia

Design of mammalian cell regulatory circuits

Georgina Herrera (Universidad de Buenos Aires)

Gliadin proteolytical resistant peptides: the interplay between structure and self-assembly in gluten-related disorders

XIII SBBn Congress

PRELIMINARY PROGRAM

October 4th

10:45 to 12:15 am

Symposium 1 (SPBN-01): The nuclear technologies: innovations for minimizing the environmental impact

Chairs: José A. Perrota (Nuclear and Energy Research Institute-IPEN/CNEN/SP, Brazil) and Silvia Velasques (SBBN President)

Non-electrical applications of nuclear energy

Leonam S. Guimarães, ELETRONUCLEAR President, Brazil

Deployment of Small Modular Reactors (SMR) and Transportable Nuclear Power Plants (TNPP)

Stephen Whittingham, Head of Transport Safety Unit, International Atomic Energy Agency, Austria

Decarbonization planning

Viviana Canhao Bernardes Goncalves Coelho, Climate changes executive manager, PETROBRÁS, Brazil)

12:15 to 1:15 pm

Keynote Lecture 1 (KLBN-01):

Chair: Adelia Sahyun (ATOMO, Brazil)

The control of exposure to natural occurring radioactive materials

Abel Julio González (Autoridad Regulatoria Nuclear, Argentina)

2:45 to 4:45 pm

Symposium 2 (SPBN-02): Biochemistry and biotechnology applied to molecular imaging and radionuclides therapy

Chair: Priscilla Pujatti (INCA, Brazil)

Radioisotopes and pharmaceuticals for positron emission tomography (PET)

Suzanne Lapi, University of Alabama at Birmingham, Alabama, USA)

Imaging cell-based therapy

Jane Sosabowski, Cancer Barns Research Center and Queen Mary University of London, UK)-to be confirmed
Global initiatives for diagnosis and therapy (theranostics) radiopharmaceuticals availability

Amir Jalilian, International Atomic Energy Agency, Austria)

5:00 to 6:30 pm:

Symposium 3 (SPBN-03): *The protection of the biodiversity using nuclear analytical techniques*

Chair: Elvis França (Centro Regional de Ciências Nucleares do Nordeste-CRCN/CNEN, Brazil)

Natural occurrence of radioactive materials (NORM) in mining and oil industry

Amenônia Pinto, Nuclear Technology Development Center- CDTN/CNEN, Brazil

Radioisotopes applications for the biodiversity protection
Roberto Meigikos, Fluminense Federal University, Brazil)

– to be confirmed

Chemical diversity in tree species from Caatinga

Elvis França, Centro Regional de Ciências Nucleares do Nordeste-CRCN/CNEN, Brazil

October 5th

9:30 to 10:30 am Keynote Lecture 2 (KLBN-02):

Chair: Maria Paula Curado (A.C. Camargo Cancer Center, Brazil)

The Chernobyl Tissue Bank: a resource for radiation research

Geraldine Thomas, OBE (Imperial College, UK)

10:45 am to 12:45 pm

Symposium 4 (SPBN-04): *Patients radiation exposures and epidemiological surveys*

Chairs: Claudia Lage (UFRJ, Brazil) and Maria Paula Curado (A.C. Camargo Cancer Center, Brazil)

Subsequent neoplasm risk following childhood cancer

Lindsay M. Morton, Radiation Epidemiology Division, National Cancer Institute, NCI-NIH, USA

The EPI-CT- a European cohort study to quantify cancer risks in paediatric and young adult patients from CT radiation

Ausrele Kesminiene, Environmental and Lifestyle Epidemiology Branch, International Agency for Research on Cancer-IARC-WHO, France)

Global surveillance of trends in cancer survival

M. P. Curado, A.C. Camargo Cancer Center, Brazil)

Biodosimetry for assessing human chromosome

instability

Ademir Amaral, UFPE, Brazil

2:45-4:45 pm

Symposium 5 (SPBN-05): *Development of models for tumoral and inflammatory imaging*

Chair: Simone O. Fernandes (UFMG, Brazil)

¹³¹I-ixolaris as a theranostic (diagnostic and therapy)

agent: metastatic melanoma preclinical studies

Sergio A. L. Souza, Medical School, UFRJ, CENABIO, Brazil

Three-dimensional cellular culture system for testing of biological effects of radiations in tumoral and non-tumoral models

Daniel P. Vieira, IPEN/CNEN, Brazil

Derivative from the antimicrobial peptide LyeTx

I as potential positron emission tomography (PET)

radiopharmaceutical

Leonardo Fuscaldi, Santa Casa de São Paulo-SCSP, Brazil

Use of ^{99m}Tc-anti-TNF-alpha as a marker of inflammatory disease activity

Sergio A. L. Souza, Medical School, UFRJ, CENABIO, Brazil

5:00-6:30 pm

Symposium 6 (SPBN06): *Radiotracers as signatures evaluating water quality and radiological pollution*

Chair: Jean Remy D. Guimarães (Biophysics Institute, UFRJ)

High uranium concentrations in the groundwater of the Rio de Janeiro State, Brazil, mountainous region

José M. Godoy, PUC-RJ, Brazil

Removal of Zn and Cd from overlying water by mangrove sediments: testing the effects of sediment resuspension

Wilson Machado, Fluminense Federal University-UFF, Brazil)

Natural radionuclides and radiogenic isotopes as tracers of coastal marine sedimentation processes

Heitor Evangelista, Rio de Janeiro State University-UERJ, Brazil) – to be confirmed

October 6th

9:00- to 10:00 am Keynote Lecture 3 (KLBN-03):

Chair: Dunstana Melo (Melohill Tech., USA)

Radiation biodosimetry: new paradigms

Sally Amundson (Center for Radiological Research, Columbia University Irving Medical Center, USA)

10:15 to 12:15 am

Symposium 7 (SPBN-07): *Radiation occupational exposures*

Chair: Denison S. Santos (Instituto de Radioproteção e Dosimetria-IRD/CNEN, Brasil)

Mathematical tools for radiological protection and dosimetry

Denison S. Santos, IRD/CNEN, Brazil and International Commission on Radiological Protection-ICRP

Occupational exposure to ionizing radiation

Dunstana Melo, Melohill Technology, USA

Radiation protection from a laboratory service perspective

Yvone Mascarenhas, SAPRA, Brazil)

2:45 to 4:45 pm

Symposium 8 (SPBN-08): External radiation cancer therapy

Chair: Ademir Amaral (UFPE), Brazil)

Dose fractionation in radiotherapy patients

Helena Segreto, UNIFESP, Brazil)

Proton therapy to treat pediatric patients

Luis A. Perles, UT MD Anderson Cancer Center, Texas University, USA

Postmastectomy radiation therapy

Divanizia Souza, Sergipe Federal University, Brazil)

Photobiomodulation therapy combined with radiotherapy

Carlos A. Zeituni, IPEN/CNEN, Brazil

5:00 to 7:00 pm

Symposium 9 (SPBN-09): Androgen receptors signaling for prostate cancer imaging and therapy

Chair: Sergio Souza (Medical School/CENABIO, UFRJ, Brazil)

Androgen receptor signaling in prostate cancer

Hernandes Carvalho, Biology Institute, UNICAMP, Brazil

Clinical applications of Positron Emission Tomography (PET) with ^{68}Ga -PSMA

Lilian Yuri Itaya Yamaga, Hospital I. Albert Einstein, Brazil

Clinical trials with ^{18}F -PSMA1007

Cristina Matsushita, PUC-RS, InsCer, SBMN, Brazil

Radionuclide therapy with ^{177}Lu PSMA for prostate cancer

Euclides T. Rocha, Hospital Cancer Barretos, Brazil

October 7th

9:30 to 10:30 am Keynote Lecture 4 (KLBN-04):

Chair: Alessandro Facure (CNEN, Brazil)

Particle Radiation Therapy: developments, studies and applications

Gustavo A. Santa Cruz (Comisión Nacional de Energía Atómica-CNEA, Argentina)

10:45 to 12:45 pm

Symposium 10 (SPBN-10): Molecular imaging in neurosciences

Chairs: Valbert N. Cardoso (UFMG, Brazil) and Luciana Malavolta (Medical School, Santa Casa de São Paulo, Brazil)

Peripheral Nervous System in the War Against Cancer

Alexander Birbrair, UFMG, Brazil

Positron emission tomography (PET) molecular imaging for neurodegenerative diseases

Eduardo Savio, CUDIM, Uruguay

PET/CT/MRI fusion images showing cranial and peripheral nerve involvement in neurolymphomatosis

Lauro Wichert-Ana, Medical School, Ribeirão Preto-USP, Brazil

2:30 to 4:30 pm

Symposium 11 (SPBN-11): Perspectives for innovations and the intersection between research and the health public attention

(Discussion in Portuguese)

Chairs: Daniel Coiro (Santa Casa M. Bahia, Brazil) and Marycel F.F. Barboza (H.I. Albert Einstein, Brazil)

Legal framework, scenarios and perspectives for technology innovations in Brazil

Gianna Sagazio, National Industry Confederation, Brazil

Growth and strengthening of the private sector in the Brazilian radiopharmaceutical market - the case of R2IBF

Désirée Zouain, IBFR2 Radiopharmaceuticals, Brazil

Cyclotron products certified by a public hospital in São Paulo

Miriam Okamoto, Medical School, São Paulo State University, Brazil

A public facility for alpha emitters production

Julio C. Suita, Nuclear Engineering Institute-IEN/CNEN, Brazil

October, 8th

10:15 to 12:15 am

Symposium 12 (SPBN-12): Synchrotron Radiation in Biology and Medicine

Chair: Simone Coutinho Cardoso (Physics Institute, UFRJ, ABFM, Brazil)

Synchrotron-based x-ray imaging and microspectroscopy applied to life sciences

Carlos Alberto Perez, Centro Nacional de Pesquisas e Energia e Materiais-CNPEM, Brazil

Manganese as a central element in tumor progression

Mariana Paranhos Selling, Rio de Janeiro Federal Institute-IFRJ, Brazil)

Synchrotron X-ray biosample imaging: opportunities and challenges

Regina Cely Barroso, Rio de Janeiro State University-UERJ)

Opportunities and challenges for achieving high-resolution in vivo tomographic images in animal systems

Murilo de Carvalho, CNPEM, Brazil

2:30 to 3:00 pm

Keynote Lecture 5 (KLBN-05):

streaming: <https://www.youtube.com/SBBNbiocienciasnucleares>

Chair: Silvia Velasques (SBBN President)

Women in the nuclear field promoting Latin American integration

Nelida Del Mastro (IPEN, Brazil)

3:00 to 5:00 pm

Symposium 13 (SPBN-13): streaming:

<https://www.youtube.com/SBBNbiocienciasnucleares>

Multidisciplinary education and employment (In Portuguese and LIBRAS)

Chairs: Rodrigo Gadelha Gontijo (SBBN Jovem Coordinator, Brazil) and Marcio Alvarenga (Radio Universidade de Uberlândia, UFU, Brazil)

Teachers experience:

- Luciene Mota (Curso de Tecnologia em Radiologia da Faculdade de Medicina, UFMG, Brazil)

- Denise Zezell (Mestrado profissional em saúde do IPEN/CNEN/SP, Brazil)

Interviews (Marcio Alvarenga, UFU, Brazil):

- Liliane Bauerman (Curso de Biologia, Universidade Federal de Santa Maria, Brazil)

- Fernando Russo Costa do Bomfim, Fundação Herminio Ometto, Brazil)

- Camille G. Gueux, UFSM, Brazil)

- Danielle V. Sobral (Santa Casa de São Paulo, Brazil)

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