



III LAFeBS  
Bicentenario  
in memoriam  
Gregorio Weber  
1916 - 2016

III LAFeBS  
IX IberoAmerican Congress  
of Biophysics  
XLV SAB  
23rd-25th November, 2016  
Hilton Garden Inn Hotel, Tucumán, Argentina

*In memoriam Gregorio Weber*

## PROGRAM

### Wednesday 23<sup>rd</sup> November

09:00 - 12:00 **REGISTRATION**

12:45 - 13:00 **APERTURE**

Agustín Campero, Secretario de Articulación Científico Tecnológica, MinCyT  
Silvia del Valle Alonso, Presidente LAFeBS  
Marcelo Morales, IUPAB Council

13:00 - 14:00 **C01: Conference Gregorio Weber**

Chair: David Jameson

*Mechanisms of Molecular Transport in Live Cells*

**Enrico Gratton**

Laboratory for Fluorescence Dynamics, University of California, Irvine, USA

14:00 - 15:00 **S01: Gregorio Weber Special Symposium (Part I)**

Chairs: Jerson Lima da Silva - Francisco Barrantes

*The Fundamental Contributions of Gregorio Weber to Fluorescence and to Protein Chemistry*

**David Jameson**

Department of Cell & Molecular Biology, University of Hawaii, Hawaii, USA

*How Gregorio Weber's Theory on Conformational Drift and Condensation of Proteins Explains its Prion-like Aggregation Behavior*

**Jerson Lima da Silva**

Universidade Federal do Rio de Janeiro, Brazil

15:00 - 15:15 **Interval**

15:15 - 16:45 **S01: Gregorio Weber Special Symposium (Part II)**

Chairs: Jerson Lima da Silva - Francisco Barrantes

*Gregorio Weber's Roots in Argentina and Acetylcholine Receptor-Cholesterol Intimate (nanoscale) and Long (billion year) Relationship*

**Francisco Barrantes**

Lab of Molecular Neurobiology, BIOMED UCA – CONICET, Argentina

*Extended Excitation FLIM (eeFLIM)*

**Thomas Jovin**

Lab of Cellular Dynamics, Max Planck Institute for Biophysical Chemistry, Germany

*Super-resolved Fluorescence Imaging of Neurons and Trypanosoma cruzi*

**Fernando Stefani**

Centro de Investigaciones en Bionanociencias, CONICET, Buenos Aires, Argentina

16:45 - 17:30 **Sistemas Nacionales / Global Imaging Project**

*Desarrollo de los Sistemas Nacionales como una herramienta de articulación en Ciencia y Tecnología*

**Sergio Matheos**

SubSecretario de Articulación Científico Tecnológica, MinCyT

**Lía Pietrasanta**

Coordinadora del Sistema Nacional de Microscopía

17:30 - 18:30 **C02: Conference (LAFeBS)**

Chair: Gabriela Amodeo

*Division of Labor Among the Subunits of a Highly Coordinated Ring ATPase*

**Carlos Bustamante**

Single Molecule Biophysics at UC Berkeley, USA

19:00 - 21:00 **Historical Site Visit**

## Thursday 24<sup>th</sup> November

08:30 – 09:30 **C03: Conference (SBB, Brazil)**

Chair: Silvia del Valle Alonso

*Stem Cell Approaches for the Treatment of Renal Diseases*

**Marcelo Morales**

Universidade Federal do Rio de Janeiro Rio de Janeiro, Brazil

09:30 - 10:00 **Interval**

10:00 - 12:00 **HILTON HALL 1:**

**S02: Lipids, Structure and Function (SEB, Spain)**

Chair: Juan Carmelo Gómez Fernández - Gerardo Fidelio

*Role of Lipids in Autophagy Events*

**Alicia Alonso**

Unidad de Biofísica (CSIC-UPV/EHU), Departamento de Bioquímica y Biología Molecular, Facultad de Ciencia y Tecnología, Universidad del País Vasco

*Heterogeneous Diffusion, Molecular Interactions and Ergodicity Breaking in Living Cell Membranes*

**Carlo Manzo**

Single Molecule Biophotonics, ICFO - The Institute of Photonic Sciences, Barcelona, Spain

*The Synergistic Effect of Lipids to Enhance the Permeation Induced by the Peptide Polybia-MP1 in Biomembranes*

**João Ruggiero Neto**

Department of Physics, IBILCE, São Paulo State University, Brazil

**Selection Young Researcher #1**

*Oxidative Stress on Lipid Membranes as Investigated by Small Angle X-Ray Scattering*

**Raffaella Da Rosa**

Instituto de Física, Universidade de São Paulo, São Paulo, Brazil

**Selection Young Researcher #2**

*Triglyceride 'lenses' at the Air-Water Interface as a Model for Studying Lipid Droplets*

**Benjamín Caruso**

IIBYT (CONICET-UNC), Departamento de Química, Cátedra de Química Biológica, Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de Córdoba, Córdoba

**HILTON HALL 2:**

**S03: Membrane Transporters and Channels (Biophys, Chile)**

Chair: Carlos González León - Wendy González

*Real-time Single-molecule Imaging to Reveal Protein Solvation in Living Cells*

**Sebastian Brauchi**

Centro Interdisciplinario de Neurociencia de Valparaíso, Universidad de Valparaíso, Chile

*Structure-based Study of TASK Channels Blockers*

**Wendy González**

Center for Bioinformatics and Molecular Simulations (CBSM) University of Talca, Chile

*Hv1 Channels: Cooperativity and Blocking*

**Carlos González León**

Centro Interdisciplinario de Neurociencia de Valparaíso, Universidad de Valparaíso, Chile

**Selection Young Researcher #1**

*Molecular Determinants Underlying the Dysfunction Elicited by Cx26G12R Syndromic Deafness Mutation*

**Isaac Garcia**

Centro Interdisciplinario de Neurociencias de Valparaíso (CINV), Universidad de Valparaíso, Valparaíso, Chile

**Selection Young Researcher #2**

*TIP1 but not PIP2 from Beta vulgaris is Regulated by Cell Mechanics*

**Marcelo Ozu**

Instituto de Biodiversidad y Biología Experimental y Aplicada (IBBEA, UBA-CONICET), Buenos Aires, Argentina

**12:00 - 14:00 POSTER SESION**

**14:00 - 15:00 C04: Conference (SPB, Portugal)**

Chair: Luis Bagatolli

*Analytical Solutions for Advanced Ensemble Average FRET in Biophysics*

**Manuel Prieto**

Centro Química-Física Molecular, Portugal

**15:00 - 15:30 Interval**

**15:30 - 17:30 HILTON HALL 1:**

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**S04: Protein Oxidation in Biology and Biophysics (Biophys, Uruguay)**

Chair: Daniel Peluffo – Silvina Bartesaghi

*Trypanosoma cruzi hybrid type A Heme Peroxidase (TcAPx-CcP): Enzyme Kinetics, Subcellular Localization in the Infective Stage and Contribution to Parasite Virulence*

**Lucía Piacenza**

Facultad de Ciencias, Universidad de la República, Montevideo, Uruguay

*Molecular Mechanism Links Auxin and ROS-Controlled Polar Growth in Plant Cells*

**José M. Estévez**

Molecular Basis for Plant Development, Fundación Instituto Leloir, Argentina

*Structural and Functional Changes in Oxidatively-Modified Glutamine Synthetase: Experimental and Computational Studies*

**Silvina Bartesaghi**

Centro de Investigaciones Biomedicas (CEINBIO), Universidad de la Republica, Uruguay

*Extracellular L-arginine Dependence of NOS-mediated Reactive Oxygen/Nitrogen Species Production in Cardiac Ventricular Myocytes*

**Daniel Peluffo**

Centro Universitario Regional (CENUR) Litoral Norte, Universidad de la Republica, Uruguay

**HILTON HALL 2:**

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**S05: Lipid Protein Interaction (SBP, Portugal)**

Chair: Manuel Pietro - Silvia del Valle Alonso

*Set up and Characterization of Matrix Vesicles Biomimetic Systems and their Interaction with Collagen Fibers during Biomineralization*

**Pietro Ciancaglini**

Departamento de Química, Universidad de San Pablo, Brazil

*Protein Aggregation on Membrane Surface investigated by SAXS*

**Rosangela Itri**

Departamento de Física Aplicada, Universidade de São Pablo, Brazil

*Enzymatic Studies on Planar Supported Membranes using a Widefield Fluorescence LAURDAN Generalized Polarization Imaging Approach*

**Luis Bagatolli**

Center for Biomembrane Physics, University of Southern Denmark, Denmark

**Selection Young Researcher #1**

*Membrane Anchored Metallo-beta-lactamase: How to Measure Activity and Stability in a Lipid Environment?*

**Estefanía Giannini**

Instituto de Biología Molecular y Celular de Rosario, IBR-CONICET-UNR, Rosario, Argentina

**Selection Young Researcher #2**

*Interactions Between Nisin and Phosphatidylglycerol Membranes. A Vibrational Spectroscopy Study*

**Marcelo Sosa Morales**

INQUINOA (CONICET-UNT) Instituto de Química del Noroeste Argentino, Instituto de Química- Física, Fac. de Bioquímica, Química y Farmacia. UNT. San Miguel de Tucumán, Tucumán, Argentina

**17:30 - 18:30 C05: Conference (Biophys, Uruguay)**

Chair: Daniel Peluffo

*Reaction of Mn- and Fe- Superoxide Dismutases with Peroxynitrite: A Case Study of Metal-catalyzed Protein Tyrosine Nitration and Relevance in Mitochondrial Dysfunction*

**Rafael Radi**

Departamento de Bioquímica y Centro de Radicales Libres e Investigaciones Biomédicas, Facultad de Medicina, Universidad de la República, Montevideo, Uruguay

**18:30 – 19:30 LAFeBS Assembly**

**19:30 – 21:00 Argentinean Biophysical Society Assembly**

**Friday 25<sup>th</sup> November**

**08:30 - 09:30 C06: Conference “Confraternización SBE-SAB”**

Chair: Gerardo Fidelio

*Protein kinases C are Regulated by Concerted Interaction with Lipids*

**Juan Carmelo Gómez Fernández**

Biochemistry and Molecular Biology, University of Murcia, Spain

**09:30 - 10:00 Interval**

**10:00 - 12:00 HILTON HALL 1:**

**S06: Protein Structure and Function (SAB, Argentina)**

Chair: Mario Ermácora - Rodolfo Rasia

*Use of Quantum Mechanics Methods to Study Proteins and Glycoproteins*

**Jorge Vila**

IMASL-CONICET, Universidad Nacional de San Luis, Argentina

*Focusing on the Human Frataxin, a Key Mitochondrial Protein Involved in the Iron-Sulfur Center Biosynthesis*

**Javier Santos**

Instituto de Química y Físicoquímica Biológicas “Prof. Alejandro C. Paladini”, UBA-CONICET, Buenos Aires, Argentina

*Intrinsic Disorder and Linear Motifs in Host-Pathogen Interactions*

**Lucía Chemes**

Instituto Leloir, Buenos Aires, Argentina

**Selection Young Researcher #1**

*Using Genetically Encodable Self-assembling GdIIIspin Labels to Make in cell Nanometric Distance Measurements*

**Florencia Mascali**

Instituto de Biología Molecular y Celular de Rosario, IBR-CONICET-UNR, Rosario, Argentina

**Selection Young Researcher #2**

*Thermodynamics of the interaction between dengue virus NS3 helicase and single stranded RNA: pH and temperature effects*

**Leila Cababie**

Instituto de Química y Físico-Química Biológicas (CONICET-UBA), Buenos Aires, Argentina

**HILTON HALL 2:**

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**S07: Biophysics and NanoBiotechnology (SBB, Brazil)**

Chair: Rosana Chehín - Rosangela Itri

*Nanoparticles Activate the Immune System Through Recognition of Toll-like Receptors*

**Jean-Marie Ruyschaert**

Université Libre de Bruxelles, Belgium

*Innovative Drug Nanocarriers for Improved Therapy of Leishmaniasis*

**Frederic Frezard**

Universidade Federal de Minas Gerais Minas Gerais (UFMG), Brazil

*Viral Inhibition Mechanism Mediated by Surface Modified Silica Nanoparticles*

**Matheus B. Cardoso**

Brazilian Synchrotron Light Source (LNLS), Brazil

*Lipid based Delivery Systems Designed for Alleviating Pain*

**Eneida de Paula**

Unicamp, Universidade de São Paulo, Brazil

12:00 - 14:00 **POSTER SESSION**

14:00 - 15:00 **HILTON HALL 1:**

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**S08: Young Initiative Talks**

Chair: Macarena Siri - Galo Ezequiel Balatti

*An In Silico Approach towards a Better Understanding of GABA A Receptors Structure/Function Relationship*

**María Julia Amundarain**

Universidad Nacional del Sur, Bahía Blanca, Argentina

*Physiological States of Yeast Assessed by Zeta Potential*

**Lucía María Lavaisse**

Laboratory of Biointerphases and Biomimetic Systems, CITSE-UNSE-CONICET, Santiago del Estero, Argentina

*Deconstructing the Role of Key Residues of the Iron-Binding Motif EExxED Using Unstructured Peptides and a Grafted Protein Scaffold*

**Diego Sebastián Vazquez**

Instituto de Química y Físicoquímica Biológicas "Prof. Alejandro Paladini", UBA-CONICET, Buenos Aires, Argentina

15:00 - 15:30 **Interval**

15:30 - 17:30 **HILTON HALL 1:**

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**S09: Mathematical Modeling and Computational Biophysics (LAFeBS)**

Chair: Luis González Flecha - Air Zeida

*Affordable Viral Particle's Simulations Using SIRAH Force Field*

**Matías Machado**

Grupo de Simulaciones Biomoleculares, Institut Pasteur de Montevideo, Uruguay

*Lipid-protein Interactions in the Plasma Membrane: A Simulation Approach*

**Valentina Corradi**

Department of Biological Sciences, Centre for Molecular Simulation, University of Calgary, Canada

*Cell Surface Receptors Modify their Signaling Properties when Working far from Steady-state: a Mathematical/Computational Study*

**Juan Pablo Di Bella**

Instituto de Fisiología, Biología Molecular y Neurociencias, Universidad de Buenos Aires CONICET, Argentina

*Modeling Signaling of Proliferation and Survival from Ligand /Receptor Systems using Pathway Logic based in Rewriting Logic*

**Javier De Las Rivas**

Bioinformatics and Functional Genomics Group, Cancer Research Center (CiC-IBMCC, CSIC/USAL) Universidad de Salamanca, España

*Modelling the Organization and Function of Circadian Clocks: from Cells to Tissue*

**Paula Nieto**

Instituto de Física Enrique Gaviola, Universidad Nacional de Córdoba - CONICET, Argentina

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**HILTON HALL 2:**

## **S10: Calcium Signaling (SOBLA)**

*in memoriam R. Dipolo*

Chair: Ariel Escobar – Alan Neely

*Is the Coupling between the Voltage-sensing Domains and the Pore of High Voltage Calcium Channels Allosteric?*

**Alan Neely**

Instituto de Neurociencias, Universidad de Valparaiso, Chile

*Slow Force Response to Myocardial Stretch: Mechanical Expression of a Redox-triggered Increase in Intracellular Ca<sup>2+</sup> Transient*

**Néstor Gustavo Pérez**

Centro de Investigaciones Cardiovasculares, CONICET, Universidad de La Plata, Argentina

*Ionic Bases of Epicardial Ventricular Action Potentials*

**Ariel L Escobar**

University of California, Merced, USA

**Selection Young Researcher #1**

*Novel CaV2.1-inhibitors with Potential to Treat Hemiplegic Migraine*

**Mercè Izquierdo-Serra**

Laboratory of Molecular Physiology, Department of Experimental and Health Sciences, University Pompeu Fabra, Barcelona, Spain

**Selection Young Researcher #2**

*Direct Quantification of the Ca<sup>2+</sup> free Diffusion Coefficient in Xenopus laevis Oocytes*

**Cecilia Villarruel**

Instituto de Física de Buenos Aires (IFIBA), Facultad de Ciencias Exactas y Naturales, UBA, Buenos Aires, Argentina

17:30 - 18:30 **C07: Conference SAB**

Chair: Gabriela Amodeo

*Allosterism and Structure in Thermal Transient Receptor Potential Channels*

**Ramon Latorre**

Centro Interdisciplinario de Neurociencia de Valparaíso, Universidad de Valparaiso, Chile

18:30 - 19:00 **Closing Ceremony & Awards**



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## SCIENTIFIC COMMITTEE

Marcelo Morales (Sociedad Brasileira de Biofísica, Brazil)  
Juan Carmelo Gómez Fernández (Sociedad Española de Biofísica, Spain)  
Manuel Prieto (Sociedad Portuguesa de Biofísica, Portugal)  
Daniel Peluffo (UdeLaR, Uruguay)  
Silvia del Valle Alonso (LAFEBs – UNQuilmes, Quilmes)  
Gerardo Fidelio (CIQUIBIC UNC, Córdoba)  
Luis González Flecha (FFYB UBA, Buenos Aires)  
Mauricio Sica (IEDS, CNEA, Bariloche, Río Negro)  
Florencia Martini (FFYB UBA, Buenos Aires)  
Karina Alleva (FFyB UBA, Buenos Aires)  
Rodolfo Rasia (IBR, Rosario)  
Rosana Chehín (UNT, Tucumán)  
Nadia Chiaramoni (GBEyB-IMBICE, Quilmes)  
Soledad Celej (CIQUIBIC UNC, Córdoba)

## ORGANIZING COMMITTEE

Gabriela Amodeo (BBE FCEN UBA, Buenos Aires)  
Lía Pietrasanta (DF FCEN UBA, Buenos Aires)  
Gerardo Fidelio (CIQUIBIC UNC, Córdoba)  
Silvia del Valle Alonso (LAFEBs, UNQuilmes, Quilmes)  
F. Luis González Flecha (FFYB UBA, Buenos Aires)  
Florencia Martini (FFYB UBA, Buenos Aires)  
Mauricio Sica (IEDS, CNEA, Bariloche, Río Negro)  
Rosana Chehín (UNT, Tucumán)  
Karina Alleva (FFyB UBA, Buenos Aires)  
Rodolfo Rasia (IBR, Rosario)  
Nadia Chiaramoni (GBEyB-IMBICE, Quilmes)  
Soledad Celej (CIQUIBIC UNC, Córdoba)

## LOCAL COORDINATION TEAM

Rosana Chehín (CONICET-UNT)  
César Avila (CONICET-UNT)  
Augusto Bellomio (CONICET-UNT)  
Carlos Minahk (CONICET-UNT)  
Fernando Dupuy (CONICET)  
Silvina Chaves (CONICET)  
Esteban Vera Pinguitore (CONICET)  
Benjamín Socias (CONICET)