



**XXXVI Annual Meeting - Sociedad Chilena de Ciencias Fisiológicas (SChCF)
November 29th to December 3rd, 2021 (online)**

Please note that all the times are referred to the Chilean Time Zone (GMT -3)

Program at a glance

Monday, Nov 29	Tuesday, Nov 30	Wednesday, Dec 1	Thursday, Dec 2	Friday, Dec 3
<p>9:00 - 10:00 Inaugural Lecture Claus Behn, Chile "Blood volume centralization in space and at high altitude. Possible genitourinary consequences"</p>	<p>9:00 - 10:00 Symposium 2 (Coord. S. Buvinic) "Advances in the physiology and cell biology of the musculoskeletal system"</p>	<p>9:00 - 10:00 Symposium 4 (Coord. C. Escudero, S. San Martín) "Artificial intelligence applied to biomedical sciences"</p>	<p>8:30 – 9:30 Symposium 6 (Coord. A. González) "The intra-renal renin angiotensin system: regulatory mechanisms and functions of tubular renin, the (pro)renin receptor and the angiotensin converting enzyme"</p>	<p>9:00 - 10:00 Symposium 7 (Coord. S. MartínezH.) "Skeletal muscle, metabolism and physical exercise"</p>
<p>10:15 - 11:15 Symposium New Members (Coord. D. Valladares)</p>	<p>10:15 - 11:15 Oral Presentations 1</p>	<p>10:15 - 11:15 Oral Presentations 2</p>	<p>9:45 – 10:45 Symposium Young Physiologists (Coord. M.C. Díaz-Vesga y M. Troncoso) "Advances in cardiac pathophysiology"</p>	<p>10:15 - 11:15 Symposium 8 (Coord. V. Parra, R. Troncoso) "Metabolism, mitochondria, and disease"</p>
<p>11:30 - 12:30 Symposium 1 (Coord. P. Casanello) "Developmental origins of health and disease- How to promote a healthy start to life"</p>	<p>11:30 - 12:30 Invited Lecture (Coord. L. Sobrevia) Sicco Scherjon, The Netherlands "Immunological maladaptation of pregnancy"</p>	<p>11:30 - 12:30 Invited Lecture (Coord. P. Donoso) Alicia Mattiazzi, Argentina "Activity of ryanodine receptors, contractility and arrhythmias triggered by Ca²⁺"</p>	<p>11:00 – 12:00 Meet the Editors (Coord. L. Sobrevia) A. Azzi (USA) A. Mattiazzi (Argentina) G. Grinstein (Canada) K. Barret (USA) "Editorial process tips & hints"</p>	<p>11:30 – 12:30 Oral Presentations 4</p>
	<p>12:45 – 13:45 Symposium 3 (Coord. M. Raín Gajardo) "Respiratory exercises as a non-pharmacological treatment of COVID-19 in the acute stage: from physiology to the clinic"</p>	<p>12:45 – 13:45 Symposium 5 (Coord. R. Iturriaga) "Pulmonary arterial hypertension induced by hypoxia: Translational models and novel therapeutic strategies"</p>	<p>12:15 – 13:15 Oral Presentations 3</p>	<p>12:45 – 13:45 Closing Lecture (Coord. V. Parra, R. Troncoso) Antonio Zorzano, Spain</p>
	<p>18:00 - 19:00 Science outreach activity Cristina Dorador "Challenges of Knowledge Systems, Science and Technology in the new Constitution"</p>	<p>18:00 - 19:00 Science outreach activity Juan G. Reyes & Manuel Espinoza "Fats, Oils, and Carbohydrates: Why the Bummer?"</p>	<p>18:00 - 19:00 SChCF general assembly</p>	



Symposia

Symposium New Members

Coordinator: Dr. Denisse Valladares

- Dr. Valeska Ormazabal, **Chile**. "Profile of small extracellular vesicles in fetal circulation of pregnancies with gestational diabetes mellitus and their association with fetal metabolism"
- Dr. Gabriel Marzuca, **Chile**. "Strategies for fighting skeletal muscular atrophy"
- Dr. Marcelo Cornejo, **Chile**. "AP1 activity is required for arsenic trioxide-increased MDCK cells proliferation"

General symposia:

1) Developmental origins of health and disease- How to promote a healthy start to life

Coordinator: Dr. Paola Casanello

- Dr. Claudia Torres-Farfan, **Chile**. "Gestational light pollution: impact in the offspring"
- Dr. Gloria Barbosa-Sabanero, **Mexico**. "Expression of placental transporters of glucose, amino acids and fatty acids and newborn's weight"
- Dr. Torsten Plösch, **The Netherlands**. "Long-term consequences of preeclampsia: lessons from a double-hit mouse model"

2) Advances in the Physiology and Cell Biology of the Musculoskeletal System

Coordinator: Dr. Sonja Buvinic

- Dr. Cristina Mammucari, **Italy**. "Mitochondrial calcium signalling regulates skeletal muscle homeostasis in adulthood and aging"
- Dr. Andrea Bonetto, **USA**. "Targeting RANKL for the treatment of muscle and bone defects in cachexia"
- Dr. Julián Balanta-Melo, **Colombia/USA**. "Musculoskeletal consequences of botulinum toxin intervention in the masticatory muscles"

3) Respiratory exercises as a non-pharmacological treatment of COVID-19 in the acute stage: from physiology to the clinic

Coordinator: Manuel Rain Gajardo

- Mael Rain Gajardo, **Chile**. "Microatelectasis as an inflammatory focus within the pathophysiology of mild COVID-19"
- Camilo San Martín Vásquez, **Chile**. "Physiological Effects of Breathing Exercises in COVID-19"
- Joaquín Agurto Orellana, **Chile**. "Respiratory exercises as a therapeutic alternative to COVID-19: clinical implications"

4) Artificial intelligence applied to biomedical sciences

Coordinator: Dr. Carlos Escudero & Dr. Sebastián San Martín

- Dr. Julio Sotelo Parraguéz, **Chile**. "Artificial intelligence and its application in medical imaging: searching for a better diagnosis"
- Dr. Andrés Rodríguez Morales, **Chile**. "Artificial intelligence, application in clinical data and animal models: ischemic CVA and neonatal pulmonary hypertension"
- Dr. Juan Araya, **Chile**. "Machine learning: Experiences of an analytical chemistry-to-biomedicine transition"

5) Pulmonary arterial hypertension induced by hypoxia: Translational models and novel therapeutic strategies

Coordinator: Dr. Rodrigo Iturriaga

- Dr. Germán Ebersperger, **Chile**. "Vascular inflammation as a possible remodeling agent in neonatal hypoxic pulmonary hypertension"
- Dr. Sebastián Castillo-Galán, **Chile**. "New insights of pulmonary hypertension induced by intermittent hypoxia"
- Dr. Emilio A Herrera, **Chile**. "Perinatal hypoxia and oxidative stress: in the search of therapeutic approaches to prevent cardiopulmonary programming"

6) The intra-renal renin angiotensin system: regulatory mechanisms and functions of tubular renin, the (pro)renin receptor and the angiotensin converting enzyme

Coordinator: Dr. Alexis González

- Dr. Lucienne da Silva Lara Morcillo, **Brazil**. "The Janus face of Renin"



- Dr. Dulce Elena Casarini, **Brazil**. "Angiotensin converting enzyme: modulation of physiological processes along the rat nephron"
- Dr. Alexis A. Gonzalez, **Chile**. "The (pro)renin receptor and its role in the pathogenesis of hypertension and diabetes"

7) Músculo esquelético, metabolismo y ejercicio físico

Coordinator: Dr. Sergio Martínez Huenchullán

- Dr. Mauricio Castro Sepúlveda, **Chile**. "Role of the mitochondrial-sarcoplasmic reticulum interaction in skeletal muscle metabolism"
- Dr. Gabriel Rojas Rojas, **Chile**. "Effects of Air Pollution Exposure on Skeletal Muscle"
- Dr. Sergio Martínez Huenchullán, **Chile**. "Relevance of fibroblast growth factor 21 (FGF21) in skeletal muscle metabolic function during obesity and exercise"

8) Metabolismo, mitocondria y enfermedad

Coordinator: Dr. Valentina Parra & Dr. Rodrigo Troncoso

- Dr. Alicia Kowaltowski, **Brazil**. "Mitochondria, diets and metabolic regulation"
- Dr. César Vásquez, **Chile/USA**. "Cardiac adaptation to Frataxin deficiency: Alteration in substrate metabolism and activation of the integrated stress response"
- Dr. Camila López-Crisosto, **Chile**. "Endoplasmic reticulum-mitochondria communication during mitochondrial stress and its implications in pulmonary hypertension"

Symposium Young Physiologists

Advances in cardiac pathophysiology

Coordinator: Magda C. Días-Vesga & Mayarling Troncoso

- Ximena Calle, **Chile**. "17- β estradiol regulates the mitochondrial protein MUL1 in a model of cardiomyocyte hypertrophy induced by norepinephrine in primary culture of neonatal rats"
- Mayarling Troncoso, **Chile**. "Role of VCAM-1 in obesity-induced diabetic cardiomyopathy"
- Magda Carolina Díaz V, **Chile**. "Polycystin-1 regulates BIN1 expression and transverse tubule remodeling in cardiomyocytes"
- Carolina Hernández, **Chile**. "Angiotensin 1-9 retroenantiomer prevents lipotoxic stress-induced hypertrophy in cardiomyocytes"

Oral presentations:

Oral presentation 1

- Andrea González: "Estudio preclínico comparativo del efecto de entrenamientos físico de resistencia y de fuerza sobre los parámetros de sarcopenia secundaria a enfermedad hepática crónica".
- Juan Carlos Bórquez: "Efecto del ejercicio físico en la interacción hepática entre gotas lipídicas y mitocondrias en un modelo animal de Enfermedad de Hígado Graso no Alcohólico".
- Ma. Fernanda Castillo: "Papel de la disfunción mitocondrial río abajo de la activación del Receptor Sensor de Calcio en preadipocitos humanos"
- Alexis Gonzalez: "Uso de recursos con tecnologías inmersivas para la visualización de mecanismos de contracción cardíaca, respiración y función renal en estudiantes de pregrado del área de la biomedicina".

Oral presentation 2

- Constanza Cáceres: "Binge-like ethanol exposure alters skeletal muscle function on rats by mechanism that involves fibrosis and atrophy".
- Jessica Mella: "Wnt3a overexpression in muscle cells alters pre and postsynaptic organization and acetylcholine receptor stability at the neuromuscular junction"
- Esteban Quezada: "Role of apoptosis and autophagy in masseter muscle atrophy evoked by Botulinum Toxin injection"
- Noelia Blanco: "Botulinum toxin injection in masseter muscle evokes musculoskeletal impairment of the masticatory system".

Oral presentation 3

- Hugo Alves-Figueiredo: "Upregulation of the mitochondrial calcium uniporter is a critical feature in the energetic dysfunction and hypertrophy in human heart failure"



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- Diego Varela: "TRPC6 assembly impediment prevents AngII-induced cardiomyocyte hypertrophy"
- Felipe Salazar: "The antiarrhythmic effect of inhibition of the mitochondrial calcium uniporter under catecholamine overload is partly dependent on mitochondrial function preservation".
- Judith Bernal-Ramirez: "Characterization of the cardioprotective properties of nanoencapsulated resveratrol in a poly(lactic-co-glycolic acid) formulation"

Oral presentation 4

- Marcelo González: "Higher expression of NADPH oxidase 4 (Nox4) in placenta from pregnant women with severe COVID-19"
- Daniel Nuñez: "Regulación de la expresión de deidinasas por D-glucosa en células endoteliales de microvasculatura humana (HMEC-1)".
- Daniel López: "Análisis histopatológico de la corteza temporal e hipocampo en la descendencia de madres con preeclampsia"
- Hector Vega Cruz: "Enseñanza de la física orientada a la fisiología".