

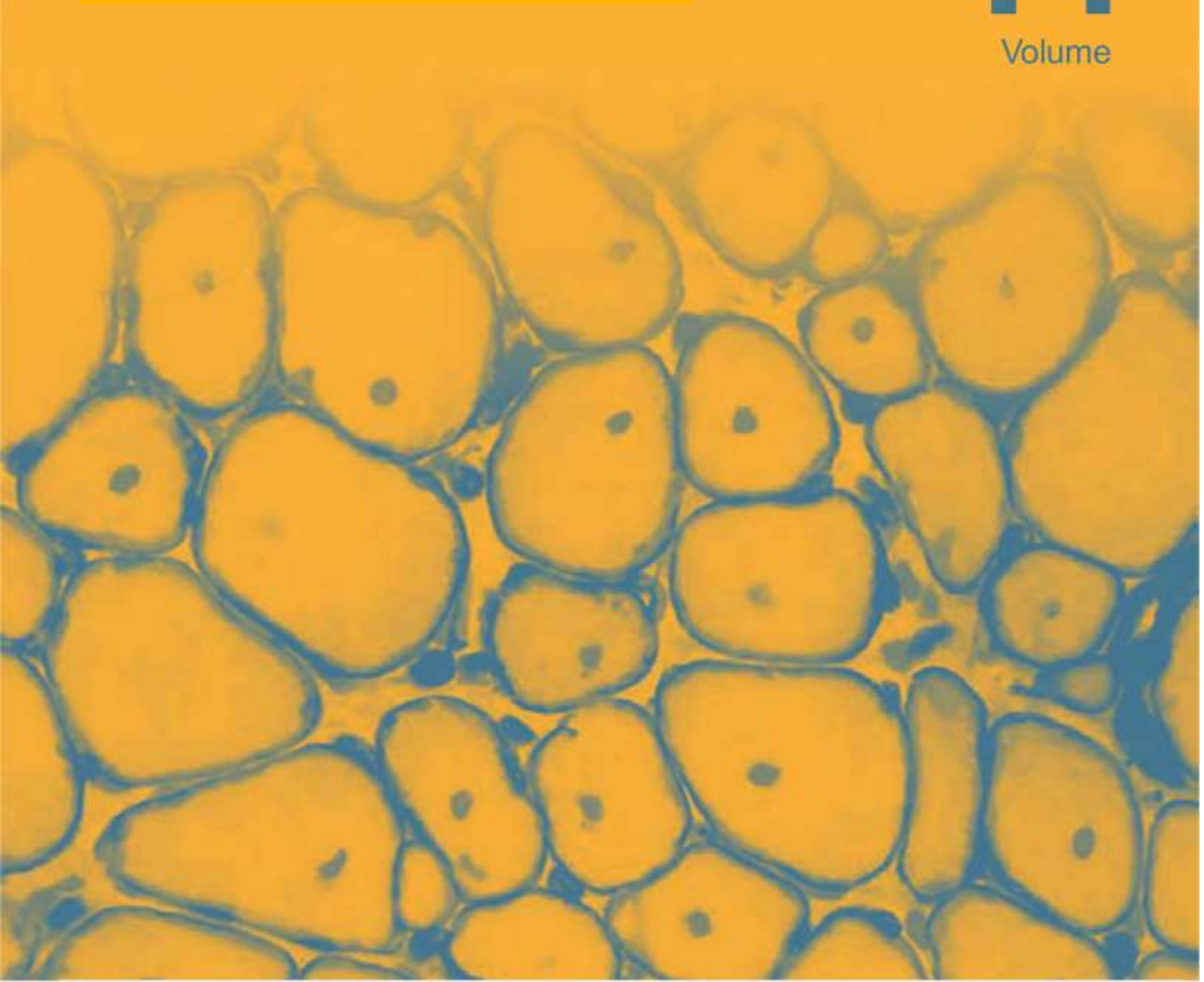
# Physiological Mini Reviews

Special Issue

Echoes of the Joint meeting SAFIS-ALACF 2021  
October 20-22, 2021

# 14

Volume



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Sociedad Brasileira de Fisiología (SBFis)

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Sociedad Mexicana de Ciencias Fisiológicas (SMCF)

Sociedad Peruana de Ciencias Fisiológicas (SCPCF)

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# Physiological Mini-Reviews

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Physiological Mini-Reviews is a scientific journal, publishing brief reviews on "hot" topics in Physiology. The scope is quite broad, going from "Molecular Physiology" to "Integrated Physiological Systems". As indicated by our title it is not our intention to publish exhaustive and complete reviews. We ask to the authors concise and updated descriptions of the "state of the art" in a specific topic. Innovative and thought-provoking ideas are welcome.

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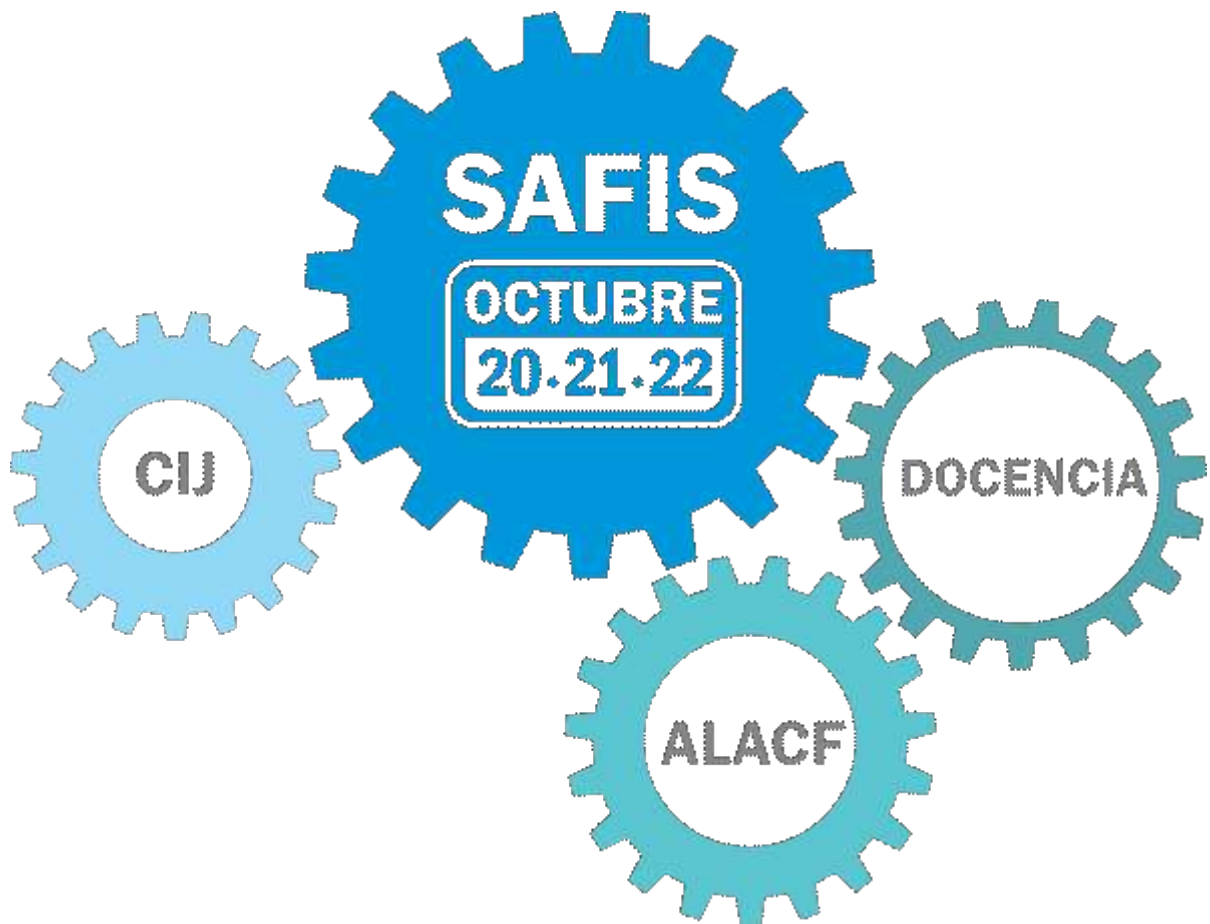
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Echoes of the joint meeting  
SAFIS - ALACF 2021  
October 20-22, 2021

# ECHOES of the ANNUAL MEETING SAFIS-ALACF 2021

Discovering the physiologic gears that link evolution with translation  
October 20-22, 2021





## ECHOES OF THE ANNUAL MEETING SAFIS-ALACF 2021 Reflections and Images

**Verónica De Giusti, Luis Gonano and Martin Vila Petroff •**

Centro de Investigaciones cardiovasculares “Dr. Horacio Cingolani”

In February 2021 with wishful eyes, we started planning our annual reunion of the Argentinean Society of Physiology (SAFIS). The goal ahead was a fully face-to-face meeting in La Plata in October. However, the devil shook his tail and what seemed a declining phase in the Covid-19 pandemic resulted in further outbreak and major lockdown. Under this situation, and without a clear prospective, we decided to switch to a totally virtual meeting, taking advantage of this new tool of communication and learning that we all experienced and have become familiar with during the last 2 years. With no delay, we began planning our SAFIS 2021 virtual meeting with excitement, anxiety and hard work. Our main goal now was to break the stigma of virtuality, that is: long tedious hours in front of the monitor listening to recorded videos without the possibility of a fluid discussion. To achieve this objective, we took the risky decision of having only synchronous sessions with no prerecorded videos. Each symposium or plenary conference would have all the invited speakers together in a zoom session assisted with two chairmen to help with the discussion. These activities would be retransmitted via streaming in real-time for the congress assistants to follow and open the chat rooms for questions. Of course, nothing is sufficient to keep the viewers' attention if the program isn't worthy. For this we put together an attractive, innovative and provocative scientific program focused on fostering new knowledge, networking and training, mixed with tablets of more distended talks and short videos to sit back and enjoy. We also concentrated on a program that included internationally as well as locally recognized senior physiologist with a history of cutting-edge research as well as the most promising investigators from early, mid and established investigator levels. In addition, this year, the SAFIS Education Committee organized a workshop on virtual teaching of physiology and for the first time we had a prominent spot in our program for two symposia organized entirely by the Committee of Early Career Investigators. As a hallmark of our annual meeting the highlights were centered in the poster and Award sessions which spotlighted the SAFIS Prize to best work in general physiology, the Camilión de Hurtado Prize to the best study in cardiovascular physiology and the María de los Angeles Costa Prize to the best poster in the area of education.

Last but not least, this year and as a warmup to the Pan-American Congress of Physiological Sciences, to be held in Chile in 2023, SAFIS joined with the Latin American society of Physiological Sciences (ALACF) to host a congress of international reach with focus on the advances of physiological sciences of the region. This virtuous association was embodied in the program with symposia organized by ALACF as well as mini-conferences and a poster award competition to grant the “2021 Elsevier Excellence in Physiology Research Award”. We are convinced this initiative will encourage regional collaboration and expand the outreach of Latin American Physiology.



### Our virtual experience

Who would have thought, at the beginning of 2020 that a viral infection so called COVID-19 would have our lives on hold for so long? Our personal and professional goals were turned upside down and we had to elaborate a new paradigm to adapt to this new reality. Although all crises can be seen as an opportunity to develop new skills, and indeed we did, (Zoom birthdays, Zoom lab meetings, Zoom congresses etc.), Zoom experiments were still not available. Our labs were frozen and so were our research projects. While this was an enormous drawback for the scientific community as well as for us planning the congress, we noticed that as vaccination advanced in the region and the groups returned to their labs, there was a renovated interest and effort to retrieve the lost time and more so, a necessity to start sharing research progress among peers. So, the time finally came to face all our fears and kick off with abstract submission, registration, and to begin the scientific activities. Luckily, our prediction on the eagerness of researchers to share their results was on target and we received the outstanding number of 106 abstracts. 80 scientific abstracts, 30 of which came from ALACF and 26 education abstracts 6 of which were from ALACF. We were even more at awe when we learned that we had the unprecedented number of over 350 registrations, including assistants from Chile, Uruguay, Brazil and Mexico. Moreover, during the meeting itself all sessions were crowded with peaks of between 150 and 180 views per activity and crowned by very busy moderated poster session with more than 50 attendants listening to each poster presentation. Thus, we can conclude that the virtual format has indeed numerous advantages that we should acknowledge for the organization of future meetings of our society. First the possibility of having a scientific program that can include internationally recognized scientists that due agenda and/or cost of travel would not be able to attend. Second, the possibility of reaching a broader scientific regional audience as the one accomplished here by the association with ALACF and third, registrants, with no further cost than their annual membership fees, that is, no travel delays, no accommodation complications, no rushing from one conference room to the other to attend a session located at the other end of the conference center, etc., enabling them to focus on the scientific content of the congress. Another key aspect of the virtual congress was the friendly congress platform where every session was only one click way and the extended availability of all presentation for the participants to watch during 30 days after the congress. Overall, we think this was an extremely positive, formative and successful experience and we were happy to share this appreciation with many attendees and invited speakers who reached us with comments on how they had enjoyed the program, the interaction and the collegial atmosphere.

### Opening session

On Wednesday, October 20, 2021, the Opening session of the Congress, was carried out by the president of the Argentinian Physiological Society (SAFIS), *Dr. Martín Vila Petroff* accompanied by the vice-president of the Society, *Dr. Graciela Cremaschi* and the president of the Latin-American Association of physiological sciences (ALACF), *Dr. Luis Sobrevía*. The authorities gave the welcome to the congress, presenting the different activities that the scientific committee had organized and exposing some of the advantages of performing a virtual congress.





**Figure 1: Opening Session.** Words from the president and vice-president of SAFIS, Martin Vila-Petroff and Graciela Cremaschi, and from the president of ALACF, Luis Sobrevía.



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## EDUCATION WORKSHOP E-POSTER SESSION

 **SAFIS**  
Sociedad Argentina de Fisiología

# VI Encuentro de Docentes de Fisiología y Física Biológica

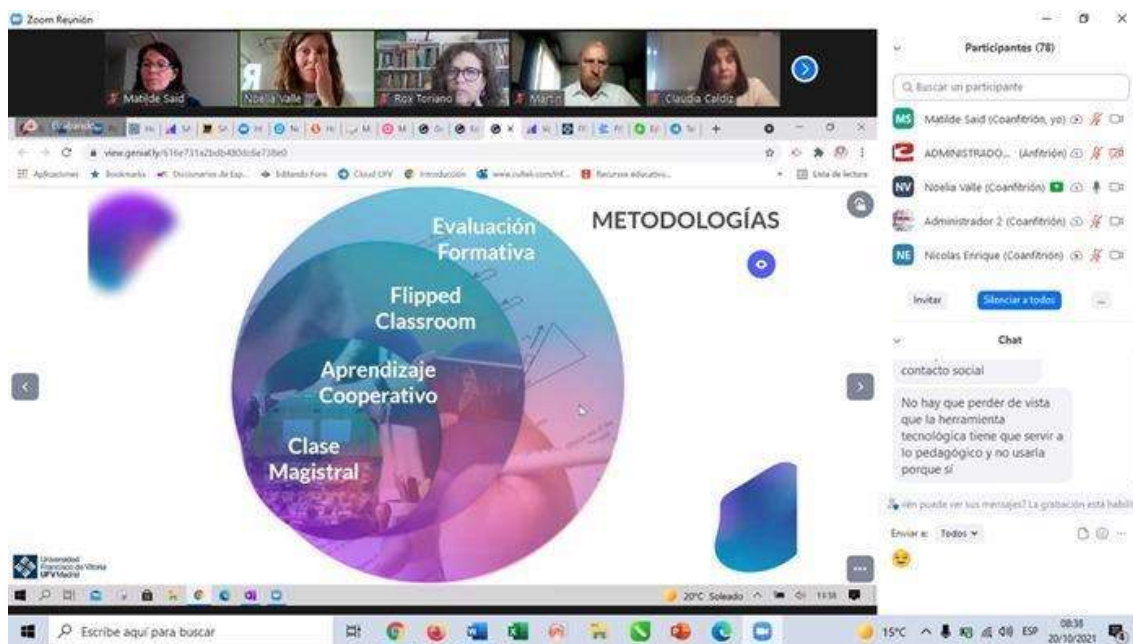
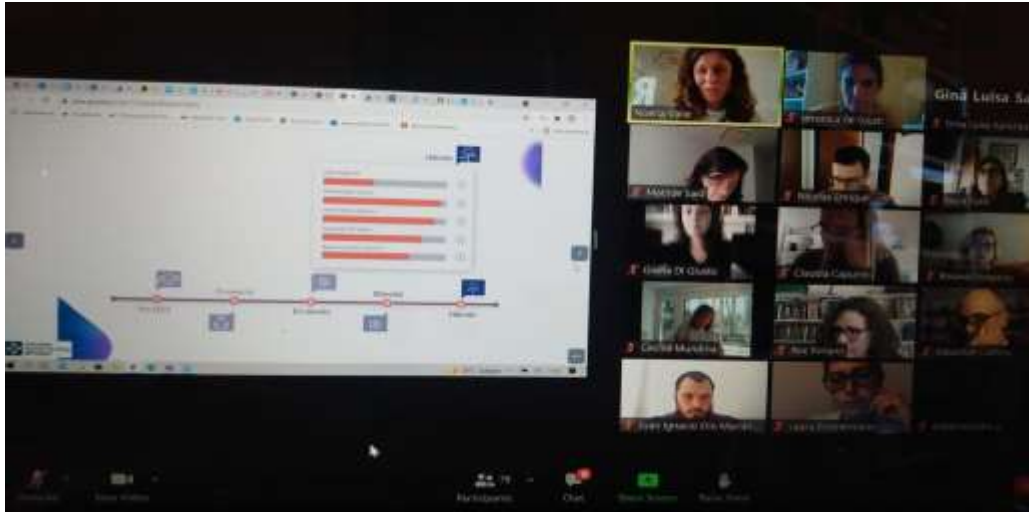
Organizado por la Comisión de Docencia de la Sociedad  
Argentina de Fisiología (SAFIS)  
en el marco de la Reunión Anual de SAFIS que se realizará  
del 20 al 22 de octubre del 2021





## WORKSHOP ON EDUCATION

Workshops are a great opportunity to have focused discussions. In this regard, the Education Committee of SAFIS organized an Interactive Educational Workshop named Hybrid Teaching dictated by *Dr. Noelia Valle* and moderated by *Drs. Matilde Said* and *Sebastian Caffera*. The activity was attended by approximately 80 people, who were able to interact orally and by completing a shared document.



**Figure 2:** Two different aspects of Noelia Valle presentation at the education the workshop. In the picture are Matilde Said and Sebastian Caffera as coordinators, as several assistants.



Figure 3: Participation of the audience at the workshop. Roxana Troiano speaking.

### Education E-Posters

In addition, an education e-poster session was performed where more than 20 abstracts were presented. During this e-poster session, the Education Committee of SAFIS selected the best work on Education to be recognized with the traditional “*María de los Angeles Costa Award*”. This year the first place went to: “*Fisio-Box: Experiencia de la Cátedra de Fisiología del Departamento de Bioquímica de la Universidad Nacional de la Patagonia San Juan Bosco*” presented by Nickels N. The second place to: “*FisioMed una aplicación para teléfono inteligente, para aprender fisiología resolviendo problemas clínicos*”, presented by García Tello V (UNAM). Moreover, there was a special mention to a third work presented by Toriano R, titled “*Zambulléndonos en las herramientas y recursos TICs para una modificación del paradigma: de cómo la dificultad se transformó en oportunidad en la cursada de Fisiología y Biofísica*”.

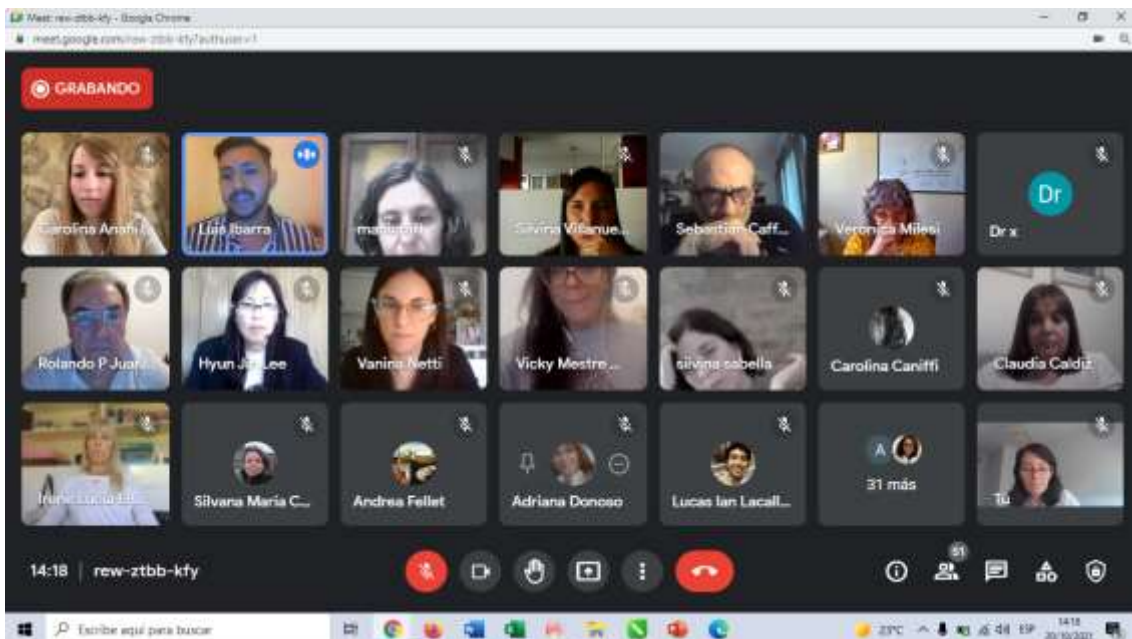


Figure 4: Listening Luis Ibarra explanation of his poster.



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### Early career activities:

Early career scientists are the driving force of our society. Last year a group of enthusiastic young researchers created the *Young Investigators Committee (YIC)* of SAFIS. During 2021, the YIC organized two open virtual satellite activities: the first one took place in June and covered the topic of *international fellowships*; the second activity was in August and addressed *new techniques for the study of physiology*. Both activities had more than fifty people connected synchronically, and more than two hundred reproductions in the YouTube channel.

During the SAFIS Annual Meeting, the YIC organized two different activities. On Wednesday 20 a workshop regarding Professional development and Labor continuity took place. The session was moderated by the fellow *Juan Ignacio Mariángelo* and *Dr. Cecilia Larocca*, past president of the Society, and the panelists were *Alicia Mattiazzi*, *Pedro Martín*. and *Verónica Livore*, representing three different steps in the research career. We enjoyed an outstanding discussion about the role of mentors in research and how to overcome different obstacles and challenges in the research and academic life. During the discussion the online chat box was very active with comments from the audience.



**Figure 4:** Juan Ignacio Mariángelo and the past president of SAFIS, Cecilia Larocca, moderating the workshop: “Professional development and Labor continuity”





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HALL PRINCIPAL WEB DEL CONGRESO MESA DE AYUDA LOGOUT



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Figure 5: Panelists of the workshop in action. From top to bottom: Alicia Mattiazzi, Pedro Martín and Verónica Livore



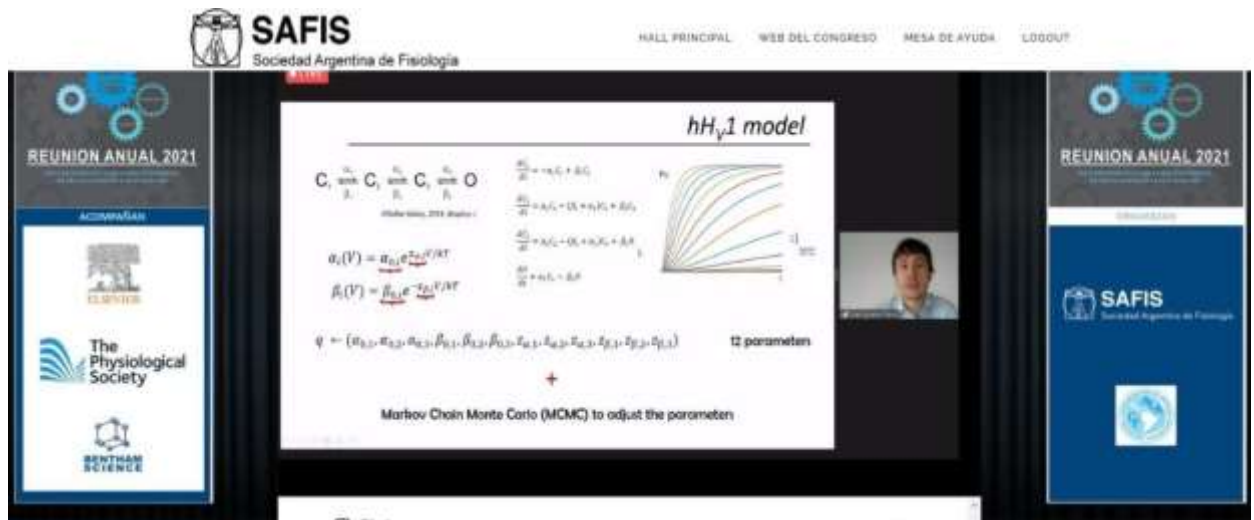
### Symposium Dr. Jorge Negroni: Experimental Models for studying physiology

The YIC organized a second activity related to *Experimental Models for studying physiology*. The activity was moderated by *Manuela Santalla and Rocío Cantero*. The opening of this session was very special and emotive because it was dedicated to the memory of *Dr. Jorge Negroni* who passed away last year. Jorge was an active member of our society, outstanding human being and prominent researcher, pioneer in the use of mathematical models as a necessary tool for the research in Physiology.



**Figure 6: To the left:** different images of Jorge, Negroni. Left panel: Jorge portrait, middle panel: the “modeling group”, at the Cardiovascular research Center: Alejandra Cely-Ortiz, Juan Felice, Alicia Mattiazzi, Jorge Negroni, Elena Lascano, Carlos Valverde, with Luciana Sapia, right panel: Jorge with the “silver myocyte” at the end of the year's party of the Cardiovascular Research Center. **To the right:** Manuela Santalla, moderating the symposium.

The presentations introduced novel approaches and a diversity of models.



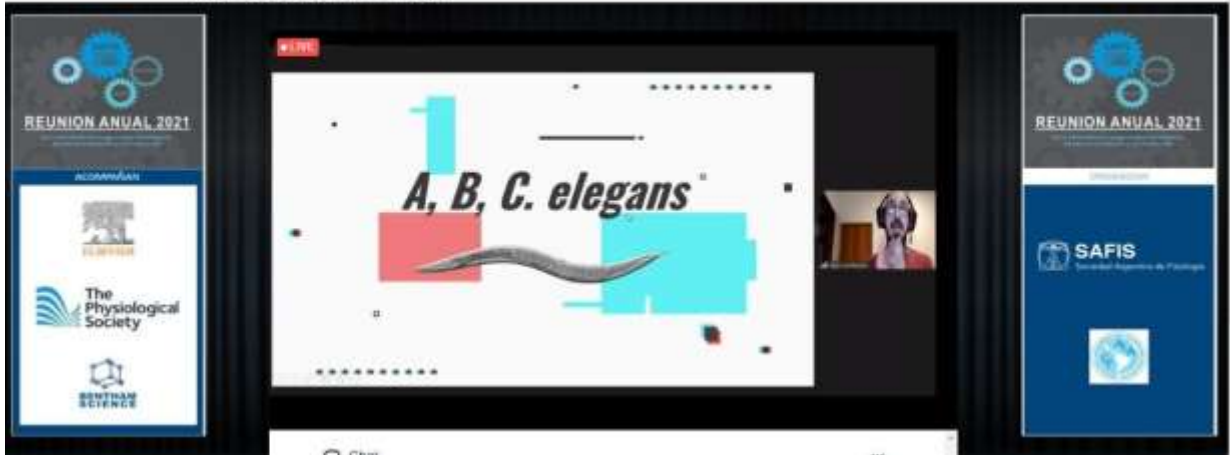


Figure 7: Upper panel: Juan I. Felice during his presentation “Approach to experimental problems through the use of mathematical models. Lower panel: José Lombardo during his presentation “A, B, C. elegans”.



Figure 8: Upper panel: Juan I. Romero during his presentation: “Drosophila melanogaster as a model of lipid metabolism: Identification of a new human ortholog in the regulation of metabolism. Lower panel: María Victoria Gavazzi during her presentation: and “Analysis of Hydra as biological model in physiology”.





## Conferences

Possibly, the highlight for many of the participants were the four lectures. The Opening Conference SAFIS by Professor *Jack Feldman* from the Department of Neurobiology, UCLA, California. This outstanding conference named "Breathing Matters: preBotzinger Complex and beyond" dazzled the audience by his clarity and advances on a subject of vital importance in physiology. The chair was Professor *Martín Vila Petroff* from Cardiovascular Research Center Horacio Cingolani UNLP-CONICET and the co-chair was



*Eduardo De Vito* from Alfredo Lanari Medical Research Institute, Buenos Aires, Argentina.

**Figure 9:** Professor Jack Feldman during the conference.



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### Debate on Science

During the second day of the Congress, on Thursday 21, a special and relaxed debate was developed on “The equilibrium between the science for the paper and the science for the press”, by *Dr. Diego Golombek*. The debate was moderated by Drs. *Alejandro Aiello* and *Carlos Davio*, where all the participants took the time to reflect on the need of science diffusion in our society and the necessary involvement of researchers on this particular task.



Figure 10: Diego Golombek talking about the need of science diffusion.

### SAFIS CONFERENCE

Finally, on Friday 22 took place the SAFIS Conference by *Dr. Qinchuan Wang* presenting on “Evolutionary Physiology: oxidation of CaMKII a treaty between God and the devil”. This provocative conference gave a complete novel insight about the role of CaMKII oxidation in promoting the evolutionary fitness of organisms while conferring detrimental consequences as a trade-off.

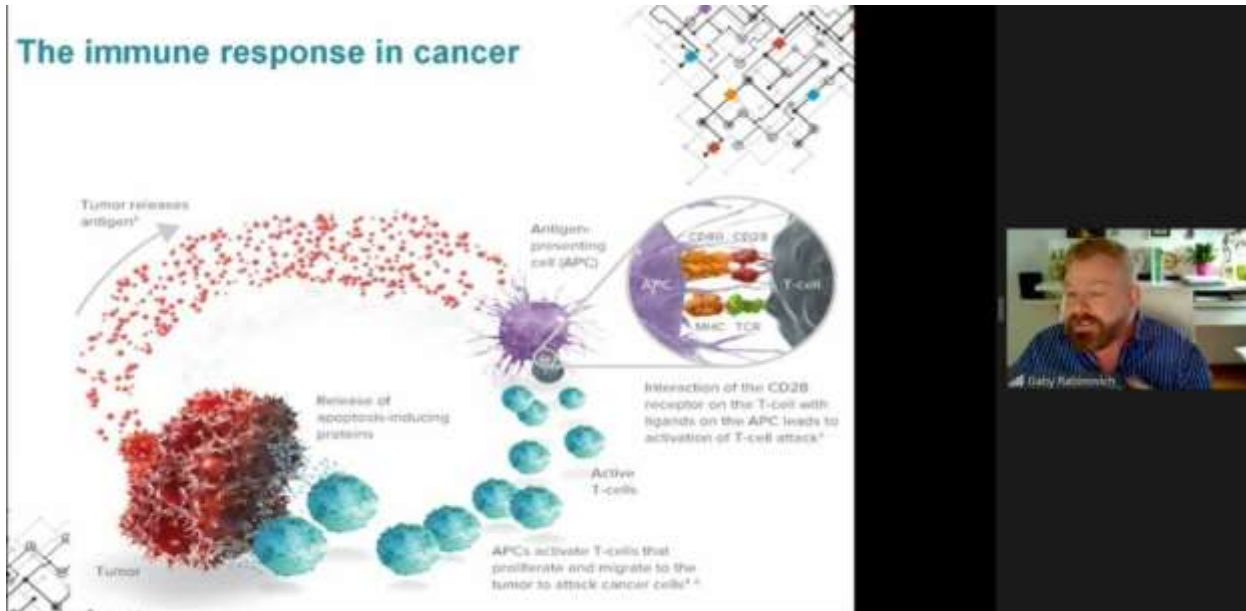


Figure 11: Qinchuan Wang, talking about the evolutionary role of CaMKII.



### Closing Conference

The closing conference SAFIS, given by *Dr. Gabriel Rabinovich*: "Glycans and galectins: new therapeutic targets in cancer, autoimmunity and infections", constitutes superb scientific closure of the Congress.



**Figure 12:** Dr Gabriel Rabinovich in his conference: The immune response in Cancer.



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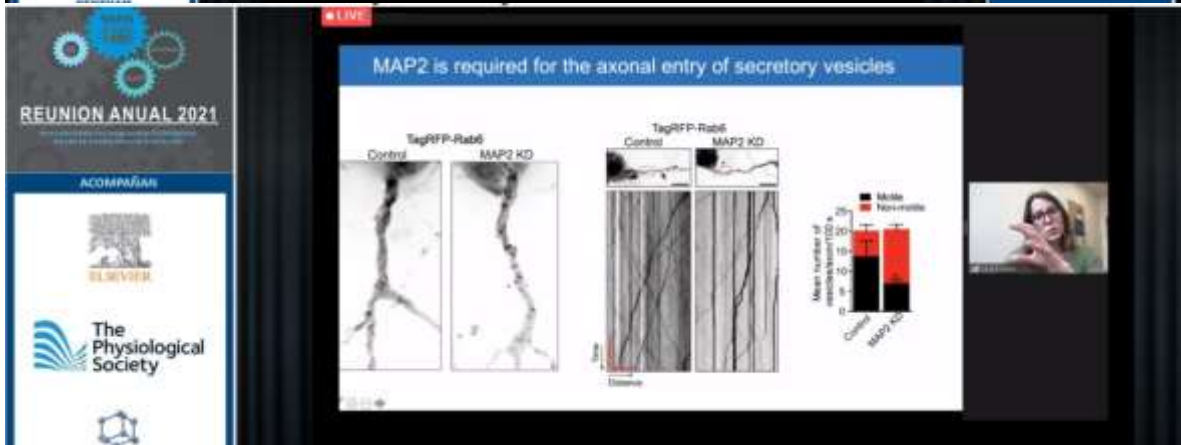
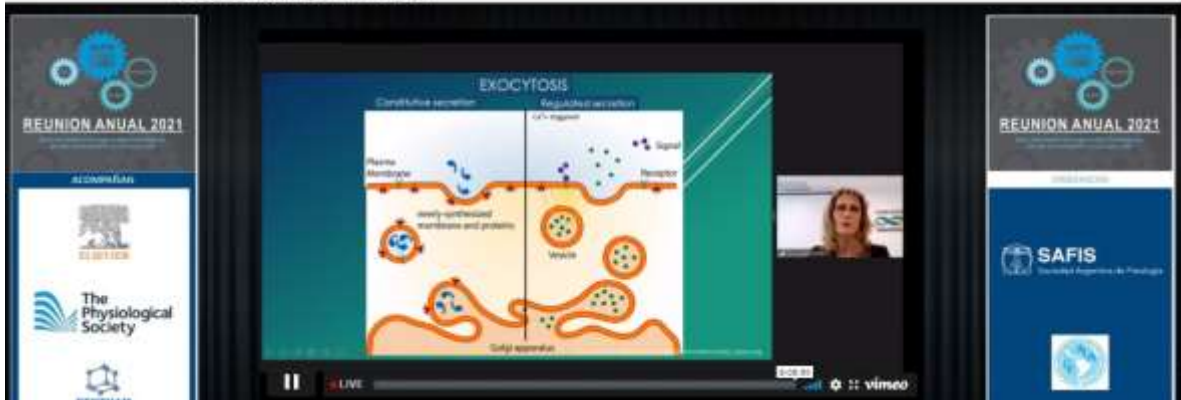
### Symposia:

The symposia were a mix of two formats: some of them followed a specific physiological topic and explored it from different points of view. Examples of this were the following symposia: “Two key moments to understand women pathophysiology: pregnancy and menopause” and “Digestive system: an organism inside our organism”.



**Figure 13:** Upper panel: Sarah Lindsay participating in the symposium “Two key moments to understand women pathophysiology: pregnancy and menopause”. Lower panel: Guillermo Docena talking at the symposium “Digestive system: an organism inside our organism”.

On the other hand, other symposia were organized around particular cellular messengers or intracellular mechanism, and exciting basic research coming from different tissues was presented. Examples of this were the following symposia: “Calcium signaling: impact in the physiopathology of tissues and cells” and “Metabolism, trafficking and cellular signaling: focusing on cellular physiology”.



**Figure 14: Upper panel:** Silvia Belmonte talking at the symposium “Calcium signaling: impact in the physiopathology of tissues and cells”. **Lower panel:** Laura Gummy in her presentation at the symposium “Metabolism, trafficking and cellular signaling focusing on cellular physiology”.

### SAFIS-ALACF symposium

The most current research topic that the entire scientific community is talking about is Covid-19. In this regard, a SAFIS-ALACF symposium was organized, entitled: Physiopathology and Covid-19 in Latino America and moderated by the Drs. Martín Abba and Alejandro Orlowski, who led the diagnostic platform of Covid-19 at the School of Medicine of La Plata University.



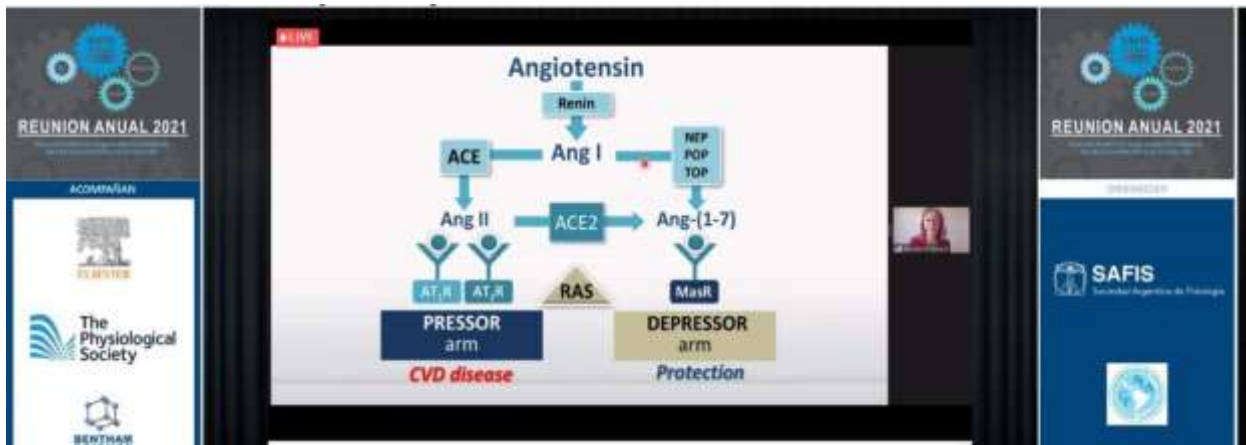
**Figure 15:** Alejandro Orlowski, speaking at the Covid-19 symposium





### Symposium ALACF

ALACF organized another attractive symposium based on the renin angiotensin aldosterone system, which highlighted the importance of understanding and investigating novel mediators of this exciting system.



**Figure 16:** Mariela Gironacci speaking at the ALACF symposium

Beyond the structure, the common characteristic of the symposia was the scientific high standard exhibited by local and international speakers, followed by exciting discussions which emerged from the session moderators, the presenters themselves and the audience who interacted using the online chat.





## E-posters

The E-poster sessions are exciting events at the SAFIS-ALACF Congress as they provide the possibility to interact and discuss in a relaxed atmosphere. The meeting featured 80 scientific abstracts. They were organized in five concurrent sessions each day, divided according to the nature of their research area (immunity and cancer, cardiovascular system, digestive system, endocrine system and neurophysiology). Each session had 8 to 12 e-poster presentations with a 10-minute presentation. E-posters were selected based on the top scores through the abstract review process in each subject category. Two moderators were assigned for each e-poster session. During the e-poster sessions, a special session was for ELSEVIER ALACF 2021 Award, where the works presented by P Mendoza-Soto (Instituto de Bioquímica, Facultad de Ciencias, Universidad Austral de Chile) “The Adenosine receptor A2B regulates the cytoskeletal remodeling of podocytes” and by C.A Sánchez-Navarro (Autonomous University of Aguascalientes, Ciudad Universitaria, Aguascalientes, Mexico) “Involvement of the P2X3 receptor in neuronal hyperexcitability in a colitis model in C57BL6 mice” were the winners.

The accepted abstracts were published in *Physiological Mini Reviews* in a special issue.

Alejandro Bañez está presentando

**TÍTULO AUTORES**  
Pharmacological and non pharmacological therapies to prevent NfκB1 impaired activity in ovariectomized heart cardiomyocytes  
Ibañez AM; Godoy Coto J; Yeves A; Ennis IL; Lofeudo JM; Aiello EA; De Giusti VC.  
Centro de Investigaciones Cardiovasculares, UNLP-CONICET, La Plata

REUNION ANUAL 2021

**Methods**

10 weeks old female Wistar rats

Sham operation

Ovariectomy

8 weeks of pharmacological treatment: G1

8 weeks of Aerobic Exercise: swimming

\*OVXG1  
\*OVXvh (placebo)

\*OVXsedentary (OVXsed)  
\*OVXexercised (OVXex)

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SAFIS

Video call participants: Alejandro Bañez, Carlos A. Valverde, Andrea Rabot, Faniella Cavali, Maitte Zavala, Giovanna Castillo, Carlos A. Valverde, 25 min.

JAZMIN EMERALDA SOTO HERNANDEZ está presentando

**TÍTULO AUTORES**  
The expression of insulin-like growth factors in A549 cells with neuroendocrine-like phenotype induced  
Soto J.P., Mendilaharsu I., Pineda-Castro J.P., García-Rodríguez G., Salazar J. C.

REUNION ANUAL 2021

**INTRODUCTION**

Lung cancer is one of the most common types of cancer and the leading cause of cancer-related mortality worldwide [1]. Neuroendocrine-like (NE-like) phenotype is present in lung cancer which is more aggressive [2-4]; the main characteristic of NE-like is the presence of granules that contain neuroendocrine markers and neuropeptides like growth factors, which promote proliferation, migration, inhibition of apoptosis and resistance to therapies [5-8].

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SAFIS

Video call participants: JAZMIN EMERALDA SOTO HERNANDEZ, María Fernanda..., María Mondibio, Valeria Rivasola, María Celeste Di..., Graciela Cremaschi, 11 min.



Verónica Lombardi está presentando

TÍTULO AUTORES "Analysis of cardiac looping morphogenesis in the zebrafish model" Lombardi V.A., Armesto R., Heise M., Abdellah-Seyfried S.

REUNION ANUAL 2021

Figure 2. Position of the heart within the embryo at 54 hpf. Right lateral view, cranial to the left. Vnt: ventricle; Atr: atrium; DV: dorsal-ventral axis; L/R: left-right axis; CR/CA: cranial-caudal axes.

Figure 3. Quantification of heart bending extension. (A) Scheme shows the looping angle ( $\alpha$ ) (red angle) method. (B) Looping angle ( $\alpha$ ) (n=10) and the looping overlap (index  $\alpha/b$ ) (n=7) measured for WT hearts at 54 hpf.

SAFIS

Figure 17: From top to bottom: Alejandro Ibañez, Jazmin E. Soto and Verónica Lombardi explaining their posters.

Yolanda Prado está presentando

Latin American Association of Physiological Sciences (ALACF) Meeting  
October 2021

### P-selectin and vWF mediates platelet adhesion to endothelial cells induced by oxidized high-density lipoprotein through LOX-1/NOX-2/ROS pathway

Prado Y.<sup>1,2</sup>, Pérez L.<sup>1</sup>, Simon F.<sup>1,2</sup>

<sup>1</sup>Laboratory of Integrative Pathophysiology, Department of Biological Sciences, Faculty of Life Sciences, Andrés Bello University, Chile. <sup>2</sup>Millennium Institute in Immunology and Immunotherapy, Chile.

Figure 18: Yolanda Prado explaining her e- poster.



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### SAFIS and Camili3n de Hurtado Awards:

Our Society is proud to offer two awards: the SAFIS award and the Cardiovascular “Cristina Camili3n de Hurtado Award”. The last one is a donation from Cristina’s family to honor the memory of this outstanding woman and researcher.

This year, SAFIS award winner was: “Availability of a rich source of sodium during the perinatal period programs the cardiovascular response after Nitroprusside infusion in adult offspring”, presented by Cintia Porcari from the Instituto de Investigaci3n M3dica Mercedes y Mart3n Ferreyra, CONICET-UNC.



Figure 19: Porcari Cintia exposing her work.

The Cristina Camili3n de Hurtado Award was for the work “Beneficial consequences on myocardial mitochondrial network dynamics and function of one-month oral treatment with cannabis oil to spontaneously hypertensive rats (SHR)”, presented by Erica Pereyra from the Centro de Investigaciones Cardiovasculares "Horacio E. Cingolani", FCM, UNLP-CONICET).

### Conclusions:

Saturday 23<sup>rd</sup> 9:00 Am was the time for the General Assembly of the Argentinean Society of Physiology. It is a time where members come together to express their views on present and future endeavors of the society. The society’s annual activities were summarized, the positive financial balance was shared and approved, new members were presented and the 2022 SAFIS Annual meeting to be organized together with the Argentinean Society of clinical investigation was announced to be held in-person in Mar del Plata from the 16<sup>th</sup> to 19<sup>th</sup> of November. Members were truly excited on the prospect of going back to the possibility of a face-to-face meeting next year and being able to bring together once again physiology research scientists and recover the corridor or the coffee break discussions as well as the social activities which are essential to promote collaboration, dissemination of ideas and ambitious projects. However, there was a unanimous call not to lose what we have learned from the virtual world. The prevailing thoughts were to consider the possibilities of a hybrid congress in 2022, sharing in-person and virtual activities, to consolidate virtual activities during the year through the SAFIS YouTube channel and to transmit via this way of communication interviews organized by Physiological Mini-Reviews and seminars organized by sibling societies of SAFIS. All in all, after this experience we can say we have crumbled the stigma of virtuality and understood it has come to stay so it’s in our hands to take advantage of the possibility it gives us to grow.



Echoes of the joint meeting  
SAFIS - ALACF 2021  
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**Figure 20:** A view of the General Assembly of SAFIS

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