

# LASF4RI Updates

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## Latin American Strategy Forum for Research Infrastructure

*Developing a strategy to strengthen Latin American Scientific Collaborations and their impact.*



# Main Goals of the Process

- To chart the landscape of existing infrastructure and expertise already developed in the region.
- To build consensus and support a strategy-based approach for the participation in, and development of, large-scale research infrastructure projects in Latin America.
- To make a call to Latin American scientific communities to establish a strategic scientific forum in order to coordinate Latin American activities in the area.
- To set-up the LA scientific roadmap based on actual participation in large-scale research infrastructures and the inherent need for long term planning and funding implementing an open call for input from the scientific communities.
- To enable a more effective development of Latin American research groups, facilitating multilateral participation in regional and global research infrastructures, increasing their impact.
- To inform the Ministerial meetings of the development, implementation and impact of the strategy for HECAP.

# 1<sup>st</sup> Strategic Planning in Latin America

Based on 39 white papers submitted by the community. Finished in 2021.

Three main documents produced:

- LA-HECAP Physics Briefing Book
- Strategy Document with recommendations
- Endorsement letter from HLSG

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# Latin American Strategy for Research Infrastructures for High Energy, Cosmology, Astroparticle Physics LASF4RI for HECAP

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## LATIN AMERICAN HECAP PHYSICS BRIEFING BOOK

### Preparatory Group

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Reina Camacho Toro- LPNHE/CNRS  
Marcela Carena - Fermilab/U. of Chicago  
Juan Carlos D'Olivo - UNAM  
Thiago Goncalves - Valongo Observatory  
Diana López Nacir - DF/IFIBA UBA-CONICET  
Jorge Molina - Universidad Nacional de Asunción  
Diego Restrepo - Universidad de Antioquia,  
Arturo Sánchez- ICTP/INFN/ U. of Udine  
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Harold Yepes Ramirez - YTU

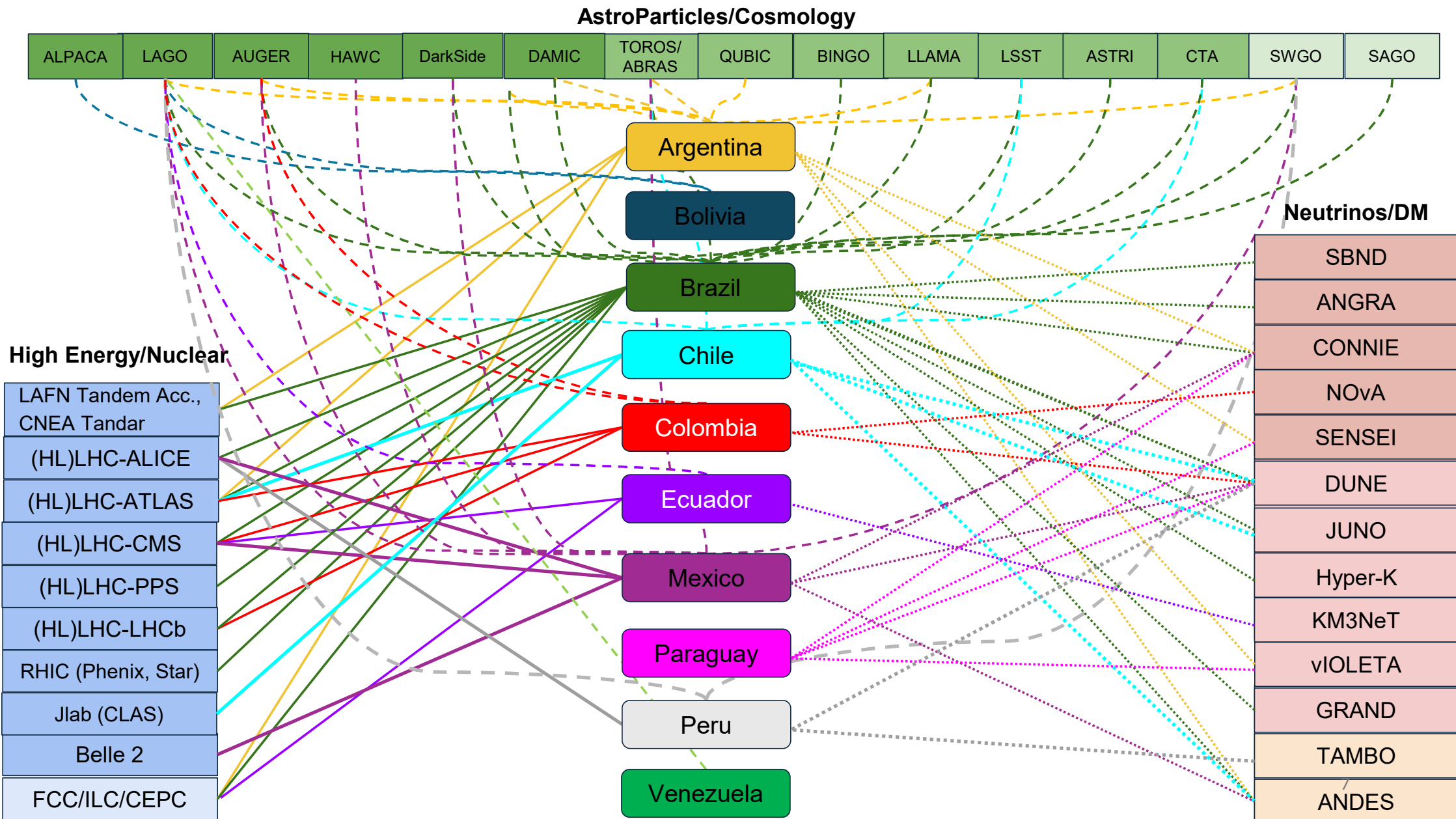
arXiv:2104.06852v1 [hep-ex] 14 Apr 2021



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# Very complex landscape revealed:



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## **Latin American Strategy Forum for Research Infrastructures for High Energy, Cosmology, Astroparticle Physics LASF4RI for HECAP**

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### **Latin American Strategy for HECAP** Proposal submitted to the High Level Strategy Group

#### **Strategy Document Committee**

Alfredo Aranda, Diana López Nacir, Marta Losada, Rogerio Rosenfeld,  
Arturo Sánchez, Federico Sánchez, Harold Yepes Ramirez

#### **Preparatory Group**

ARGENTINA: Diana López Nacir, Hernán Wahlberg, Federico Sánchez  
ASIA-JAPAN: Hiroaki Aihara  
BOLIVIA: Martin Subieta  
BRAZIL: Thiago Goncalves, Rogerio Rosenfeld  
CHILE: Mauro Cambiaso, Alfonso Zerwekh  
COLOMBIA: Marta Losada, Diego Restrepo  
ECUADOR: Edgar Carrera, Harold Yepes Ramirez  
EUROPE-CERN: Martijn Mulders  
MEXICO: Alfredo Aranda, Juan Carlos D'Olivio, Gerardo Herrera  
PERU: Alberto Gago  
PARAGUAY: Jorge Molina  
USA: Marcela Carena, Marcelle Soares-Santos  
VENEZUELA: Reina Camacho Toro, Arturo Sánchez

Date: October 1, 2020



# Summary of Recommendations

Four major recommendations with regard to HECAP research infrastructures:

- Ensure a rich program of astro/astroparticle/cosmo experiments in the region *with enhanced participation of LA*.
- Develop on >10 year scale new facilities and areas of expertise in the region (underground physics, gravity, neutrino astronomy).
- Continue strong links and participation in major international projects in collider and neutrino physics *via a more focused, coordinated and impactful approach*.
- Maintain a balanced approach including smaller scale regional projects to drive new ideas and technological developments.

Five recommendations to strengthen the HECAP science program as a whole:

- R&D technologies
- Advanced training program
- Connections between theorists and experimentalists
- Computing and network infrastructures
- Societal engagement

**One major recommendation** for stability and continuity mechanisms in funding and cooperation across funding agencies in LA.

# Endorsement by the High-Level Strategy Group

The **LASF4RI-HECAP Strategy Document** addresses several aspects that need to be simultaneously developed to sustain a thriving research environment which includes fostering R&D for key technologies, enhancing the computing and network infrastructures, advanced training of the younger generations, and broad dissemination of knowledge with increased initiatives for citizen science. The importance of reinforcing connections between theorists and experimentalists to advance the research questions posed and the exploration of answers through experimentation is clearly stated and is considered of great value by the HLSG.

The recommendation for stable and continuous mechanisms for funding and coordination at the level of funding agencies and research councils for HECAP is of paramount importance and this HLSG endorses it enthusiastically.

Finally, the HLSG strongly recommends that the HECAP community put in place a robust structure and mechanisms that would allow the community to come together, on a periodic basis, ideally about every five years, to examine progress and consolidate community input to develop and/or update the strategic plan for the region. The European Particle Physics Strategy Update and the United States “Snowmass” processes are examples of successful national/regional models. Such sustained and recurring community engagement in the strategy development process will ensure regional coordination in the participation, as well as in developing leading roles, in regional and global scientific research infrastructures. This would also facilitate funding agencies in their decision-making process to adequately support the HECAP efforts in Latin America.

**Given the above considerations the High Level Strategy Group expresses its endorsement of the 2020 LASF4RI-HECAP Strategy Document.**

## **LASF4RI-HECAP Preparatory Group 2021-2023 (extended until November 2024)**

**Chair: Rogerio Rosenfeld; Co-chair: Diana López Nacir**

### **Argentina**

Diana López Nacir  
Federico Sánchez  
Hernán Wahlberg

### **Bolivia**

Martín Subieta

### **Brazil**

Jailson Alcaniz  
Ignácio Bediaga  
Rogerio Rosenfeld

### **Chile**

Alfonso Zerwekh  
Mauro Cambiaso

### **Colombia**

Nicolás Bernal  
José David Ruiz Álvarez

### **Ecuador**

Francisco Yumiceva  
Dennis Cazar Ramírez,  
Harold Yepes

**Marta Losada (ex-officio)**

### **Central America**

Maria Eugenia Cabrera - Guatemala  
Melissa Cruz Torres - Honduras  
Federico Muñoz - Costa Rica

### **Mexico**

Alfredo Aranda  
Juan Carlos D'Olive  
Gerardo Herrera

### **Paraguay**

Jorge Molina

### **Peru**

Alberto Gago

### **Uruguay**

Lucía Duarte

### **Venezuela**

Reina Camacho Toro  
Arturo Sánchez Pineda  
José Antonio López

### **International**

Marcela Carena (Fermilab)  
Martijn Mulders (CERN)

# HIGH-LEVEL STRATEGY GROUP MEMBERS

Luciano Maiani – Chair  
Fernando Quevedo - Co-Chair

## **Country/Regional Scientific Representatives**

**Argentina:** Maria Teresa Dova

**Brazil:** Joao dos Anjos

**Chile:** Claudio Dib

**Ecuador:** Bruce Hoeneisen

**Mexico:** Jacobo Konigsberg

**Venezuela:** Jose Ocariz

**Europe/CERN:** Peter Jenni

**Asia:** Hesheng Chen

**US:** Francis Halzen/Gabriela  
Gonzalez

**ICFA/Fermilab:** Pushpa Bhat

**Asia Pacific:** Geoffrey Taylor

## **Institute Directors**

Nathan Berkovits, ICTP-SAIFR

Daniel de Florian, ICAS

Alvaro Ferraz, IIP

Jose Roque, LNLS

Ignacio Bediaga, CLAF

Luis Felipe Rodriguez, MAIS

**Under renewal process**

# Start of the update process of the HECAP Strategic Planning in Latin America

- Call for new or updated white papers was issued in November 2023 with a deadline for submission of July 26, 2024.
- The submitted contributions will be presented at the “III LASF4RI for HECAP Symposium: Update of the Strategic Plan“, held at ICTP-SAIFR in São Paulo in August 26-29, 2024, with the participation of the Preparatory Group, High Level Strategy Group, Funding Agencies and representatives of similar efforts around the globe.

# III LASF4RI for HECAP Symposium: Update of the Strategic Plan



August 26 – 29, 2024

ICTP-SAIFR, São Paulo, Brazil

Slides and videos are available on the website [www.ictp-saifr.org/hecap2024](http://www.ictp-saifr.org/hecap2024)



# Invited speakers:

- **Luciano Maiani** – chair of the LASF4RI High Level Strategy Group
- **Ricardo Galvão** – Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq, Brazil)
- **Sylvio Canuto** – Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP, Brazil)
- **Rafael Anta** – Banco Interamericano de Desenvolvimento (BID)
- **Sharapyia Kakimova** – Agencia Nacional de Investigación y Desarrollo (ANID, Chile)
- **Ana Patricia Torres** – Consejo Nacional de Humanidades, Ciencias y Tecnología (CONAHCYT, Mexico)
- **Federico Sanchez** – Comisión Nacional de Energía Atómica (CNEA, Argentina)
- **Enrique Pazos** – Secretaría Nacional de Ciencia y Tecnología (SENACYT, Guatemala)
- **Martijn Mulders** (CERN)
- **Yifang Wang** (Institute of High Energy Physics – Beijing)
- **Christophe Grojean** (DESY & CERN)
- **Hitoshi Murayama** (University of California – Berkeley)
- **Paris Sphicas** – chair of European Committee for Future Accelerators
- **Kétévi Assamagan** (Brookhaven National Laboratory)
- **Marta Losada** (New York University Abu Dhabi)

	Monday 26	Tuesday 27	Wednesday 28	Thursday 29
8:30 - 9:00	<b>Registration</b>			
9:00 - 9:25	Opening	Y. Wang	SESSION VIII	SESSION XII
9:30 - 9:55	R. Galvão	C. Grojean	WHITE PAPERS	WHITE PAPERS
10:00 - 10:25	S. Canuto	H. Murayama		
10:30 - 11:00	<b>Coffee break</b>	<b>Coffee break</b>	<b>Coffee break</b>	<b>Coffee break</b>
11:00 - 11:25	R. Anta	P. Sphicas	SESSION IX	SESSION XIII
11:30 - 11:55	S. Kakimova	K. Assamagan		
12:00 - 12:25	A. P. Torres	M. Losada	WHITE PAPERS	WHITE PAPERS
12:30 - 14:00	<b>Lunch</b>	<b>Lunch</b>	<b>Lunch</b>	<b>Lunch</b>
14:00 - 14:25	F. Sanchez	SESSION VI	SESSION X	SESSION XIV
14:30 - 14:55	E. Pazos			
15:00 - 15:25	M. Mulders	WHITE PAPERS	WHITE PAPERS	WHITE PAPERS
15:30 - 15:55	L. Merminga			
16:00 - 16:30	<b>Coffee break</b>	<b>Coffee break</b>	<b>Coffee break</b>	<b>Coffee break</b>
16:30 - 17:30	Open discussions	SESSION VII WHITE PAPERS	SESSION XI	Closing

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2024-08-28

- 09:00 - Thiago Tomei (IFT - UNESP): [Update of the Brazilian Participation in the Next-Generation Collider Experiments](#)  
[Attachment](#)
- 09:20 - Andre Sznajder (UERJ): [Machine Learning in HEP](#)  
[Attachment](#)
- 09:40 - Bruno El-Bennich (Universidade Federal de São Paulo): [The glue that binds us all – Latin America and the Electron-Ion Collider](#)  
[Attachment](#)
- 10:00 - Pietro Chimenti (Universidade Estadual de Londrina): [Latin American Contribution to JUNO](#)  
[Attachment](#)
- 11:00 - Odylio Aguiar (INPE): [The South American Gravitational Wave Observatory \(SAGO\) White Paper](#)
- 11:20 - Claudia Moreno (Physics department of Universidad de Guadalajara): [Mexican group in Astrophysical Sources of Gravitational Wave Detection via Data Analysis](#)  
[Attachment](#)
- 11:40 - Riccardo Sturani (IFT): [Gravitational Wave Science](#)  
[Attachment](#)
- 14:00 - Carla Bonifazi (ICAS–ICIFI–UNSAM & IF - UFRJ): [Coherent Neutrino-Nucleus Scattering Experiment \(CONNIE\)](#)  
[Attachment](#)
- 14:20 - Ricardo Gomes (Other): [Latin American Contributions to the NOvA Experiment](#)
- 15:00 - Deywis Moreno (Universidad Antonio Narino): [DUNE in the context of LASF4RI - the Colombian case - an update](#)
- 15:20 - Ernesto Kemp (Universidade Estadual de Campinas - UNICAMP): [From Safeguards Application to Fundamental Physics: Advancements in Reactor Neutrino Detection with the Brazilian v-Angra Experiment](#)  
[Attachment](#)
- 15:40 - Rafael Batista (OTHER): [GRAND: Giant Radio Array for Neutrino Detection](#)
- 16:30 - Luciano Maiani (CERN): [The puzzle of Exotic Hadrons: and the revival of Charm-Tau factories](#)  
[Attachment](#)

The process for the update of the Latin American Strategic Plan (details and documents can be found in [lasf4ri.org](https://lasf4ri.org)) will continue with the preparation of updates of the landscape of LA participation in different experiments, of the Physics Briefing Book and the Recommendations by the Preparatory Group (PG), all based on the received white papers (36) and with consultation with the High Level Strategy Group.

The PG will collect the material and may ask for additional information from the community in order to write a more comprehensive report. We plan to finish the work in the first semester of 2025.

**Renewed Preparatory Group appointed:**

## LASF4RI-HECAP Preparatory Group 2024-2026

### **Argentina**

Diana López Nacir  
Belén Andrada  
Fernando Monticelli

### **Bolivia**

Martín Subieta

### **Brazil**

Sandro Fonseca  
Farinaldo Queiroz  
Rogerio Rosenfeld

### **Chile**

Alfonso Zerwekh  
Mauro Cambiaso

### **Colombia**

Deywis Moreno

### **Costa Rica**

Esteban Jimenez Moya

### **Ecuador**

Andrés Baquero Larriva  
Edgar Carrera

### **Guatemala**

Juan Ponciano

### **Honduras**

Melissa Cruz Torres

### **Mexico**

Malena Tejeda Yeomans  
Alexis Aguilar Arévalo  
TBC

### **Paraguay**

Diego Stalder

### **Peru**

Alberto Gago

### **Uruguay**

Lucía Duarte

### **Venezuela**

Luiz Nuñez  
Arturo Sánchez Pineda  
José Antonio López  
**International**  
Juan Estrada (Fermilab)  
Martijn Mulders (CERN)

## Next steps:

- Meeting of the renewed Preparatory Group
- Propose a timeline for finishing the Update in first semester of 2025
- Ask for further inputs from the community
- Form Working Groups with different physics topics (may need help from outside the PG)
- Start the work!