



Supercomputing and Distributed Systems Camping School 2023

Carlos Jaime Barrios Hernandez, PhD

General Co-Chair

[@carlosjaimebh](https://twitter.com/carlosjaimebh)

[@SuperCCam](https://twitter.com/SuperCCam)

[#SCCAMP2023](https://twitter.com/SCCAMP2023)

Cartagena de Indias, Colombia May 14th 2023



Universidad
de Cartagena
Fundada en 1827



Universidad
Industrial de
Santander



Super Computación y
Cálculo Científico UIS



UNIVERSITÉ DU
LUXEMBOURG

Supporting by:

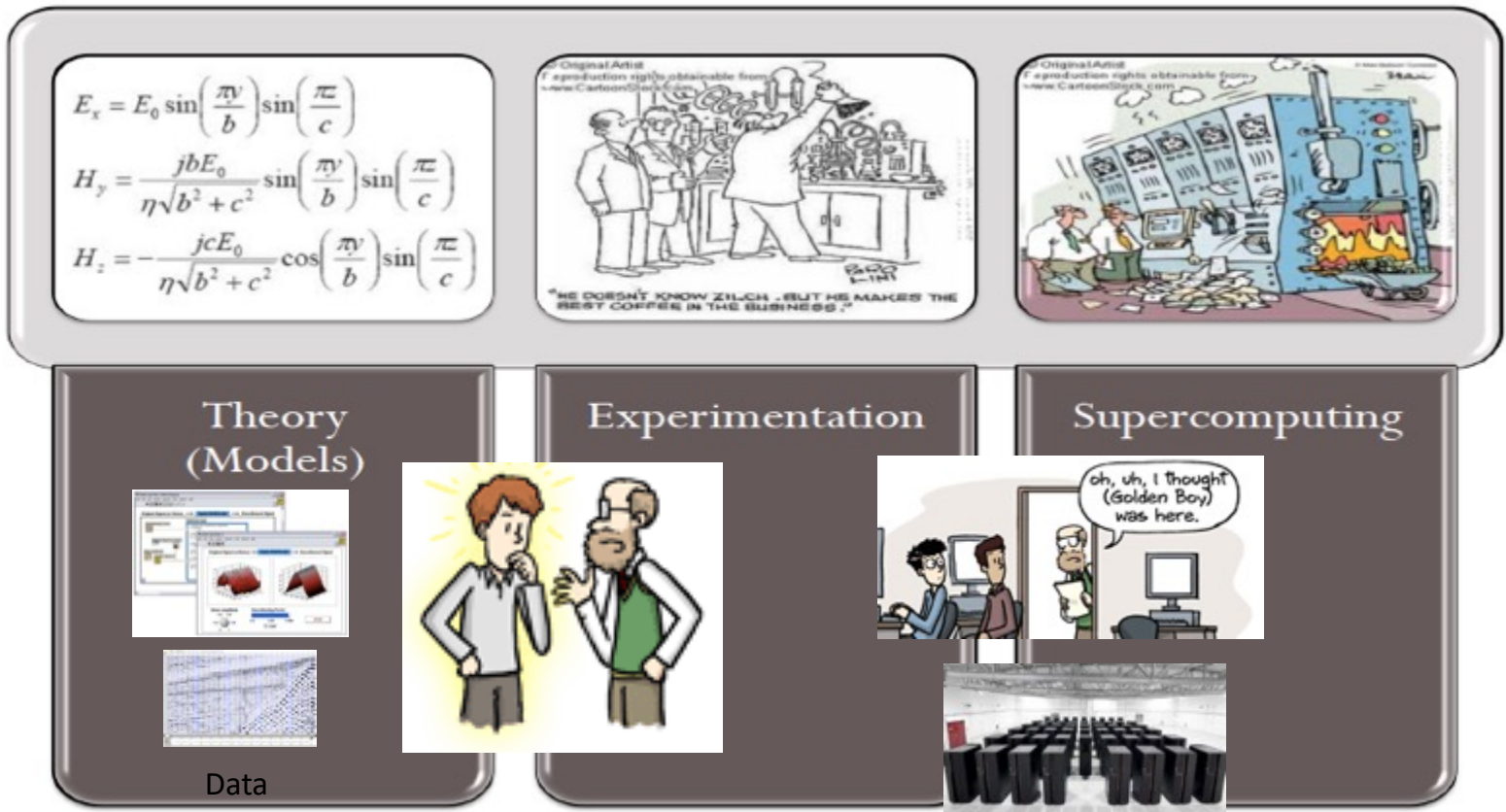
RISC2



RENATA
COLOMBIA

Red Nacional
Académica
de Tecnología
Avanzada

SONDA
make it easy



Experts- Scientists
(Biologists, Architects, Pysiciens)

Experts Scientists – Computer and Informatics
Informatic, Math Applied

Technology - Infrastructure



Decision Takers



Citizens, All



SC-CAMP Spirit



SC-Camp is a **summer school** and **non-profit event** about **Super Computing and Distributed Systems**. It proposes a series of courses around the thematic of High Performance Computing (HPC) with an important focus on **practical sessions**.

SC-Camp exploit HPC infrastructures from **anywhere**, even located in the middle of the **nature**.



SC-Camp is an initiative of **researchers** from **different countries** inspired by share the **HPC knowledge** as an itinerant event to a different place every year.

HPC Outreach since 2010...



- 2010- Catay (Piedecuesta), Colombia
- 2011- Universidad de Costa Rica, Turrialba, Costa Rica
- 2012- Universidad de los Andes, Vegasol (Mérida), Venezuela
- 2013- Instituto Tecnológico de Colima , Colima, México
- 2014- Centro Colombiano de Biología Computacional y Bioinformática (BIOS), Manizales, Colombia
- 2015- Centro de Investigación Avanzada, Abacus-CINVESTAV, Toluca (Edo. De México), México
- 2016- Centro de Investigación e Innovación en Bioinformática y Fotonica, Universidad del Valle, Cali, Colombia
- 2017- Escuela Superior de Ingeniería, Cadiz, Spain
- 2018- Đại học Công nghệ Thông tin Hữu nghị Việt Nam - Hàn Quốc
- 2019- Madrid, Spain – CIEMAT
- 2020- SCCAMPV (RedCLARA)
- 2021- SCCAMPV2 (RENATA, Colombia)
- 2022- SCCAMPH (SC3UIS, Colombia and CADS, México)
- 2023 – Universidad de Cartagena, Colombia (May)
- 2024 – University of Luxembourg, Luxembourg (Summer)
- 2025 – 3 Candidatures: Senegal, Thailand and Vietnam

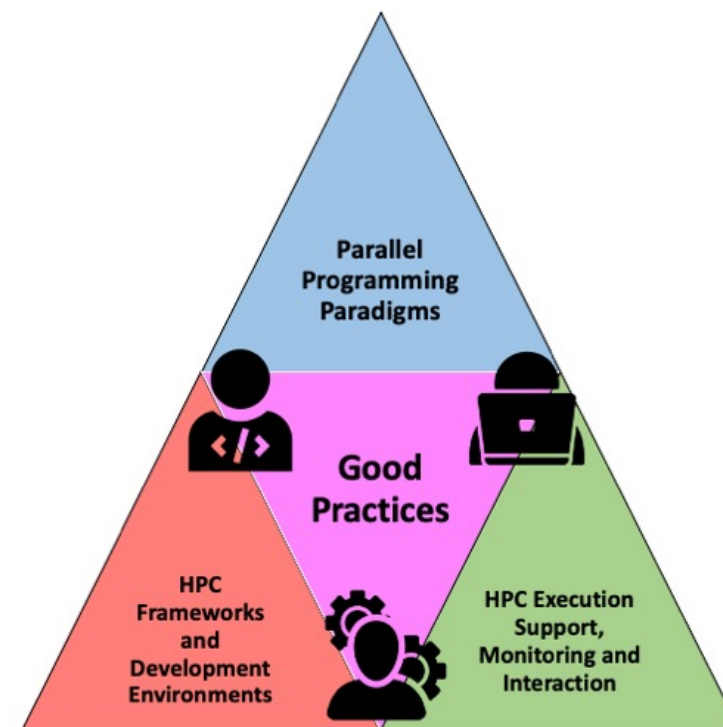
Some Numbers



- More than 500 students in 10 years participated at #SCCAMP
- Participants from 26 Countries (Alger, Colombia, Cuba, Greece, Panama, China, EAU, India, Venezuela, Japan, France, Ecuador, Germany, México, Costa Rica, Niger, Guatemala, Nicaragua, Spain, Belgium, USA, Switzerland, Italy, Luxembourg, Brazil, and Vietnam)
- 6 Countries hosted #SCCAMP (Colombia, México, Venezuela, Costa Rica, Spain and Vietnam)
- 3 Education Networks Involved: RedCLARA, CUDI and RENATA
- 2 Advanced Computing Collaborations involved: RISC2 and SCALAC
- 3 Continents at world (America, Europe, and Asia)
- Inclusivity (20% of participants are women)
- 37 Instructors from 10 Countries among 15 versions (France, Brazil, Colombia, Chile, México, Luxembourg, Germany, Czech Republic, Spain, USA, Costa Rica, Greece, Serbia, Venezuela, and Italy)
- International Governments and non-centralized institutions support SCCAMP
- Private Industry is involved in the support.
- Local Institution Hosting of each SCCAMP are a strong partnership with us!
- **All instructors and speakers are volunteers!**

#SCCAMP2023 Special Topics

- Good Practices in HPC Ecosystems Interaction
 - Including Parallel Programming Technics for Scientific Simulations
- Towards in Advanced Computing Platforms
- Acceleration
- Quantum Computing
- Deep Learning





#SCCAMP2023 Agenda

SC-Camp 2023 Program								
Day	Sunday 14/05/2023	Monday 15/05/2023	Tuesday 16/05/2023	Wednesday 17/05/2023	Thursday 18/05/2023	Friday 19/05/2023	Saturday 20/05/2023	
Topic	Introduction to HPC Ecosystems	HPC Platforms and Environments	Parallel Programming Models	Parallel Programming Patterns	Advanced Patterns in Scientific Computing	Towards Advanced Scientific Computing	SC-Camp Conclusion	
9:00 - 10:00		Keynote I	Keynote II	Keynote III	Adv. Computing Architectures: HPC + AI + QC	Keynote IV	Collaborative Project Results	
10:00 - 10:30		Coffee Break						Closing of SC-Camp & Presentation of SC-Camp 2024
10:30 - 12:30		HPC Platforms Interaction	Introduction to OpenMP and MPI	Introduction to GPU Computing	Quantum Computing Simulation	HPC for the Simulation of Particles		
12:30 - 14:00		Lunch Break						
14:00 - 15:00		Welcome	HPC Platforms Interaction Hands-on	Parallel Programming Hands-on	GPU Computing and Deep Learning Hands-on	Collaborative Project Introduction	Cultural Activity	
15:00 - 16:00						Collaborative Project Development		
16:00 - 17:00								Introduction to HPC
17:00 - 18:00			Day 1 Q&A	Day 2 Q&A	Day 3 Q&A			



#SCCAMP2023 Recommendations

1. **Enjoy all the courses**, and please, ask questions to the instructors. Please ask the instructors and staff if you have problems, doubts, or technical issues.
2. **Be respectful**: Treat all participants, speakers, organizers, and event staff respectfully and kindly. Avoid making offensive comments or disrespecting other people.
3. **SCCAMP seeks to promote collaboration**, academic networking, and friendship. Take advantage of networking opportunities at the event. Introduce yourself to other participants, exchange contact information, and follow up with people you meet after the event.
4. Please, follow the rules in the Universidad de Cartagena, San Agustín Claustro and the hotel Bahía.
5. **Be punctual**: Arrive at the event on time (Starts at 8:45 a.m., after the lunch break and 2:00 p.m. Attendees in the hotel, transportation leaves the hotel at 8:15 am and returns at 5:15 p.m.)
6. Please observe www.sc-camp.org for any changes.
7. Cartagena de Indias is one of the safest cities in Colombia. However, it is a very touristic city. Pay special attention to possible scammers and be careful with your belongings.
8. Create social media content using **#SCCAMP2023**



#SCCAMP2023 Instructors

Xavier Besson, PhD (France-Luxembourg)

Co-Chair SCCAMP

Research Engineer , Université du Luxembourg

International Instructor on HPC Development

Research Areas: HPC, HPC Applications Development,
Large Scale Architectures, Performance Evaluation and
Data Analytics

Extreme Sports (Snowboard, Surf) - Nature

Alvaro Estupiñan Donoso, PhD (Colombia-Luxembourg)

Invited Speaker

Research Scientist , Université du Luxembourg

Researcher in Chemical engineering / Energy /
Materials science & engineering / Mechanical
engineering / Modelling, Thermal Engineering, Grain
Size Distribution, Tungsten oxides, Powder
metallurgy

Music, Art - Nature



#SCCAMP2023 Instructors



Esteban Meneses, PhD (Costa Rica)

Invited Speaker

Director, CENAT – Costa RICA

International Instructor on HPC Development

Research Areas: HPC, HPC Applications Development,
Large Scale Architectures, Performance Evaluation and
Data Analytics

Sports, Arts, Culture- Nature

Gilberto J. Diaz , MSc (Colombia-Venezuela)

SCCAMP Instructor and Co-Founder

Engineer, Universidad Industrial de Santander

Researcher, System Administrator in High
Performance Computing, Distributed Systems,
Scientific Applications and Quantum Computing

Music, Food, Culture - Nature



#SCCAMP2023 Instructors



Robinson Rivas, MSc. Pr. (Venezuela)

Co-founder SCCAMP and Co-Chair SCCAMP

International Instructor on HPC

Head of the Informatics Department of Universidad Central de Venezuela

Research Areas: HPC, Distributed and Scalable Architectures, Blockchain, HPC Teaching and Outreach, Artificial Intelligence

Music, Art, Nature and « jodedera »

Carlos J. Barrios H., PhD (Colombia)

Co-Chair and Co-Founder SCCAMP

Faculty, Universidad Industrial de Santander, Bucaramanga, Colombia

Director High Performance and Scientific Computing Center – Universidad Industrial de Santander, Colombia

Research Areas: High Performance and Scientific Computing, Performance Evaluation, Advanced Computing

Music – Extreme Sports - Nature



#SCCAMP2023 Local Committee



Name	Affiliation	Country	
<u>Javier Antonio Montoya Martinez</u>	Universidad de Cartagena	Colombia	
<u>Amaury Cabarcas Alvarez</u>	Universidad de Cartagena	Colombia	
<u>Plinio Puello Marrugo</u>	Universidad de Cartagena	Colombia	
<u>Damaris Mendoza Hinojosa</u>	Universidad de Cartagena	Colombia	

Very Special Acknowledgment to Sugey Vilarreal, Professional Assistant of Universidad de Cartagena and the volunteer's students.





#SCCAMP23 Special Acknowledgments



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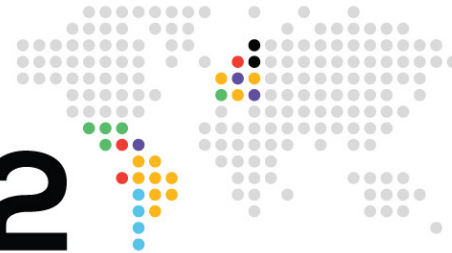


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Red
CLARA

RISC2



Red Nacional
Académica
de Tecnología
Avanzada





Thanks!



- Follow us in twitter: [@SuperCCamp](https://twitter.com/SuperCCamp)
- Or visit us: www.sccamp.org
- Share your experiences using the Hashtag: [#SCCAMP23](https://twitter.com/hashtag/SCCAMP23)