

# La Serena School for Data Science: Applied Tools for Data-Driven Sciences

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Live from NOIRLab @ AAS237

## Outline:

- The LSSDS
- Regular On-site program
- 2021 School
- Questions



# The La Serena School for Data Science

## Motivation:

- The volume and complexity of scientific data continue to grow incredibly rapidly.
- The current generation of wide-area astronomical surveys and the next generation of time-domain surveys will result in peta-scale datasets.
- *New opportunities for interdisciplinary research in applied mathematics, statistics, machine learning, and other related topics.*

*Astronomy provides a sandbox where scientists can come together from diverse fields to address common challenges within the "Big Data" paradigm.*

**As a response, the AURA Observatory started the LSSDS in 2013, together with other Chilean organizations.**





# The La Serena School for Data Science



**Since 2013, the school has taken place in 2014, 2015, and currently between years 2017-2022 under a NSF grant for students in US institutions, and diverse sources of funding students in Chilean and Latin American institutions.**



# The La Serena School for Data Science

## Some important aspects:

- The school seeks to promote diversity in several aspects. For example:
  - Gender
  - Background
  - Disciplines
  - Institutions
- To achieve this, a diverse international Scientific Organization Committee evaluates all applications received.
- Additionally, the school is organized by a Local Organizing Committee, coordinated between AURA and NOIRLab.

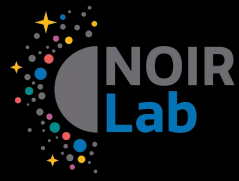
# The La Serena School for Data Science

## Regular program:

On-site school consists of a 9-day program (including weekend) with:

- $\sim 1/3$  hands-on lessons from discipline experts. Higher load on first days.





# The La Serena School for Data Science

**Usual Subjects covered by School program:**

- **Statistical tools applied to large data sets**
- **Machine Learning**
- **Image Analysis**
- **Databases**
- **High Performance Computing**
- **Deep Learning**





Regular program:

- Then, school transitions to Group Projects, where interdisciplinary, international, diverse groups of 4 students and 1 professor work on applying Data Science/Big Data tools to a specific problem.





# The La Serena School for Data Science

## Regular program:

- A full tour to AURA telescopes in Chile (CTIO, Gemini, SOAR and Vera Rubin Observatory), including dinner and stargazing at CTIO.
- All costs, including tickets US-La Serena-US, school costs, room and board (except for dinners) are covered.





# The La Serena School for Data Science



*Discovering Our Universe  
Together*



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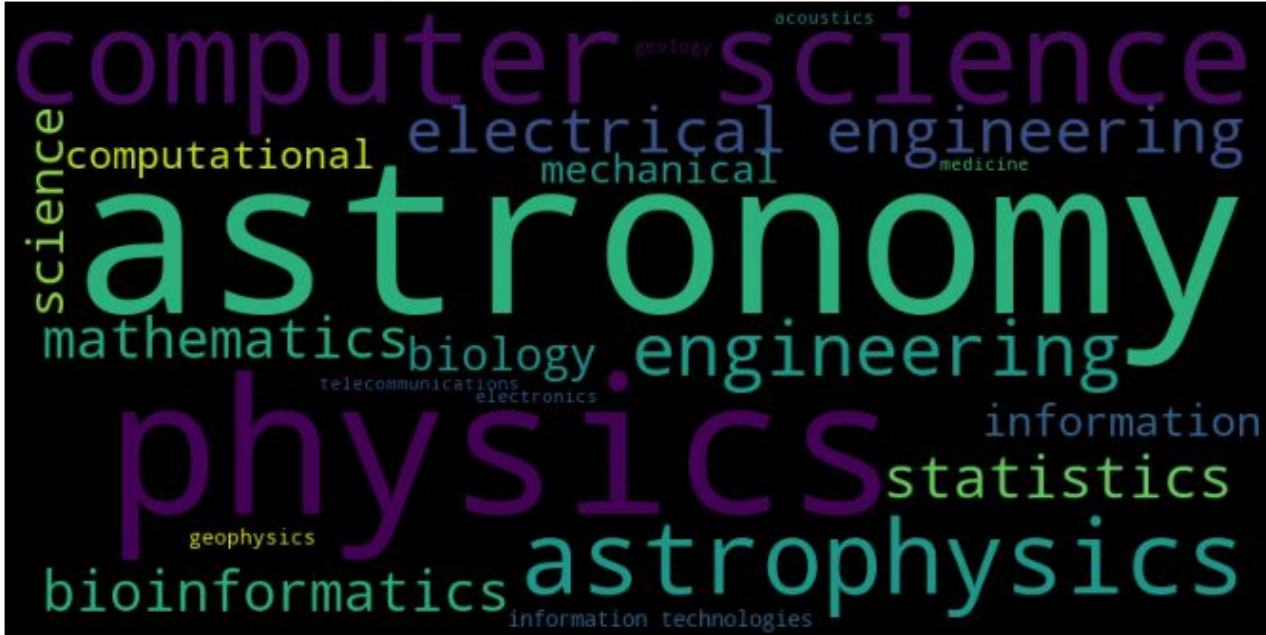
## Regular program:

- School ends with Group Project Presentations.

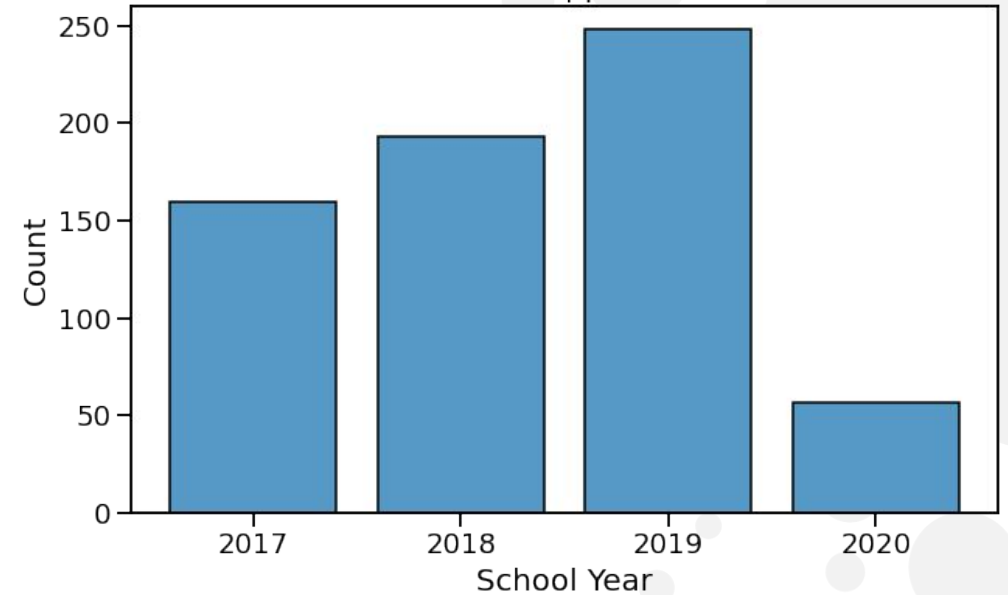


# The School in Numbers: applicants

Applicants' Majors 2017-2020

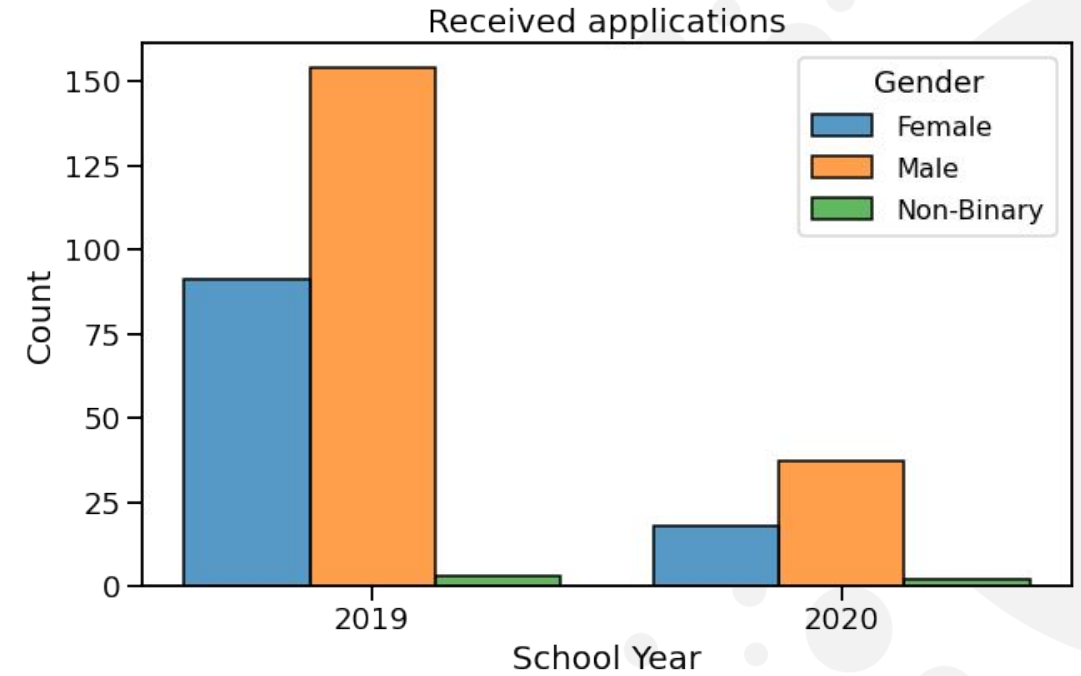
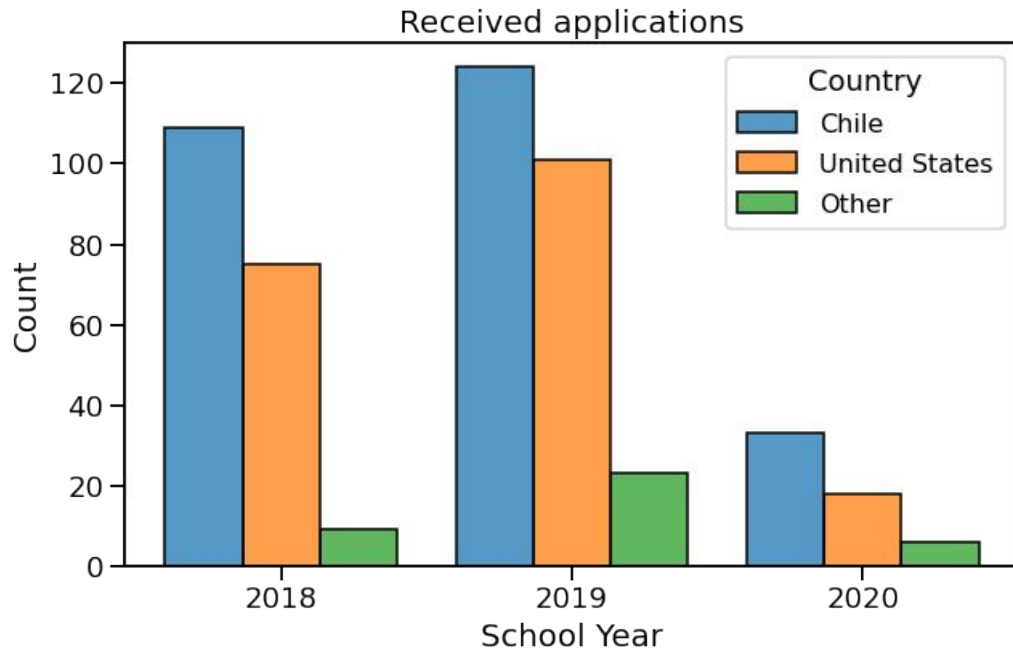


Received applications



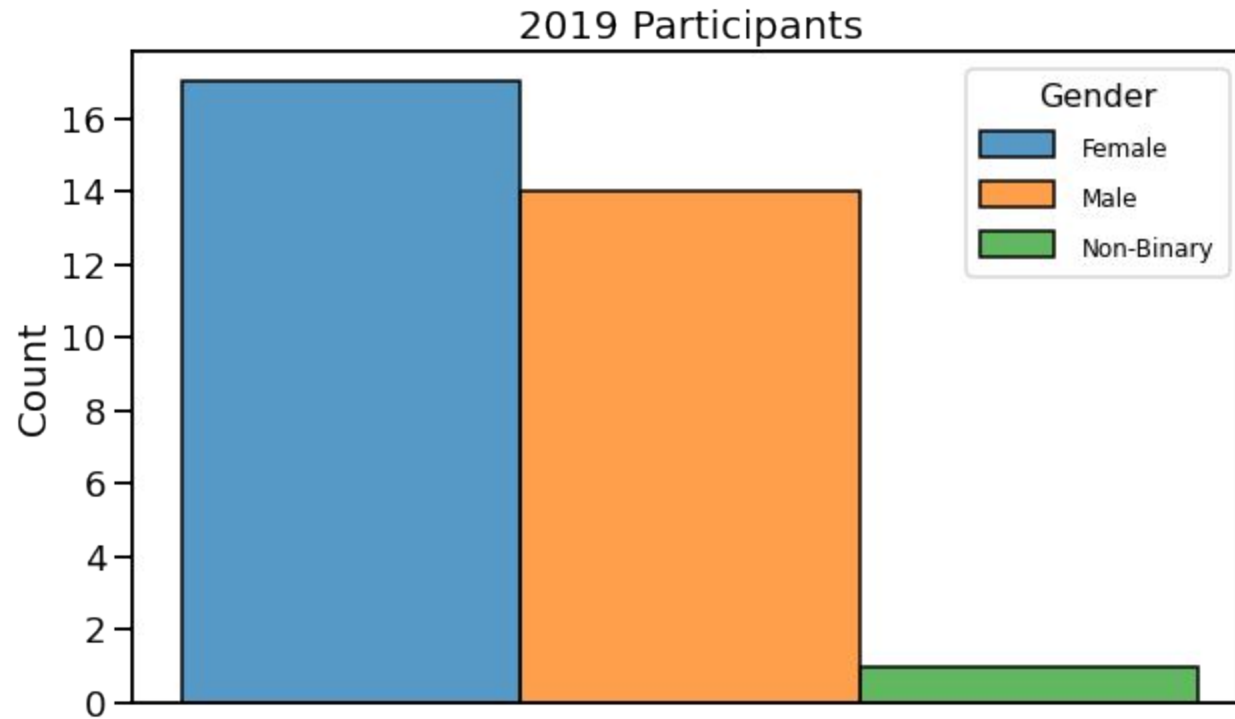


# The School in Numbers: applicants





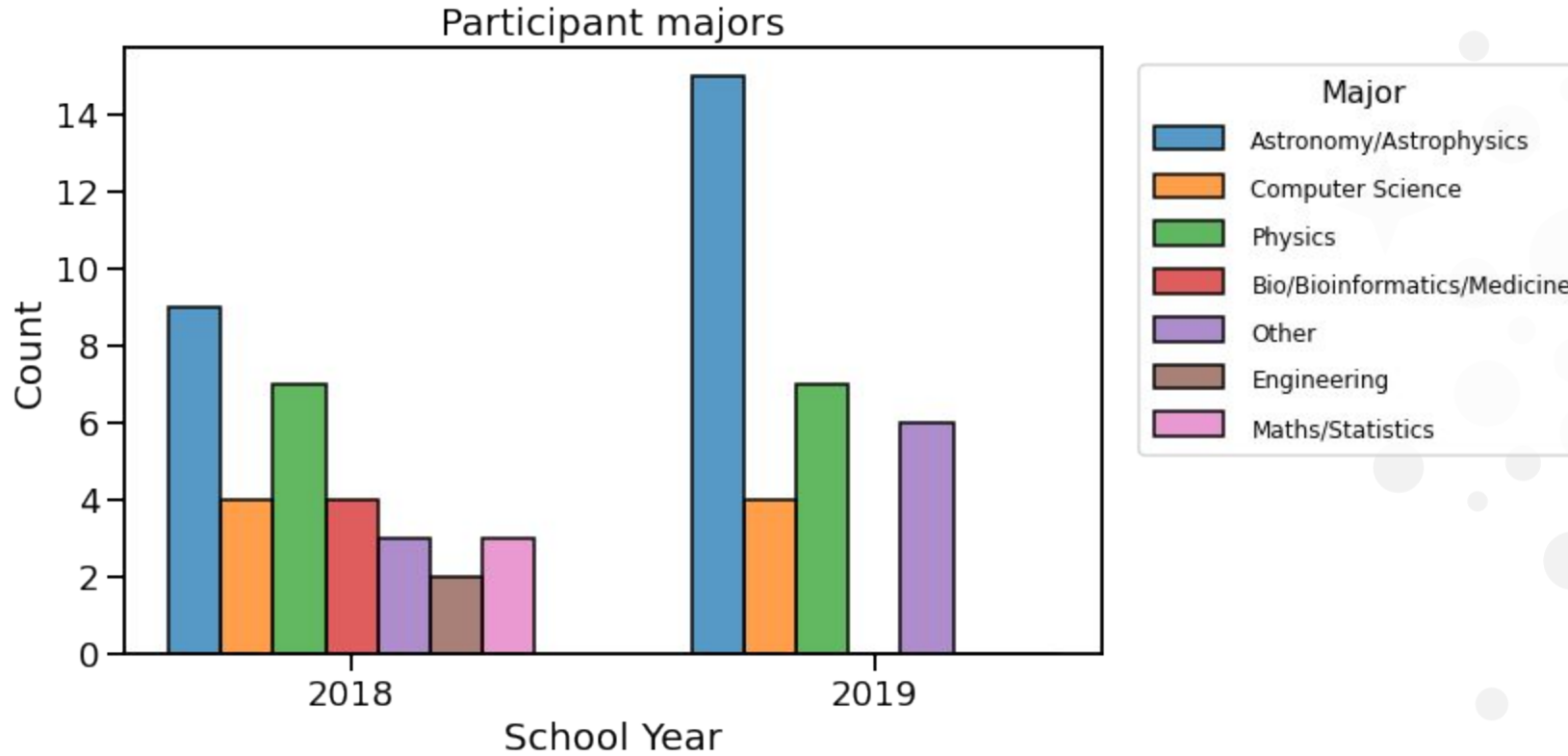
# The School in Numbers: participants





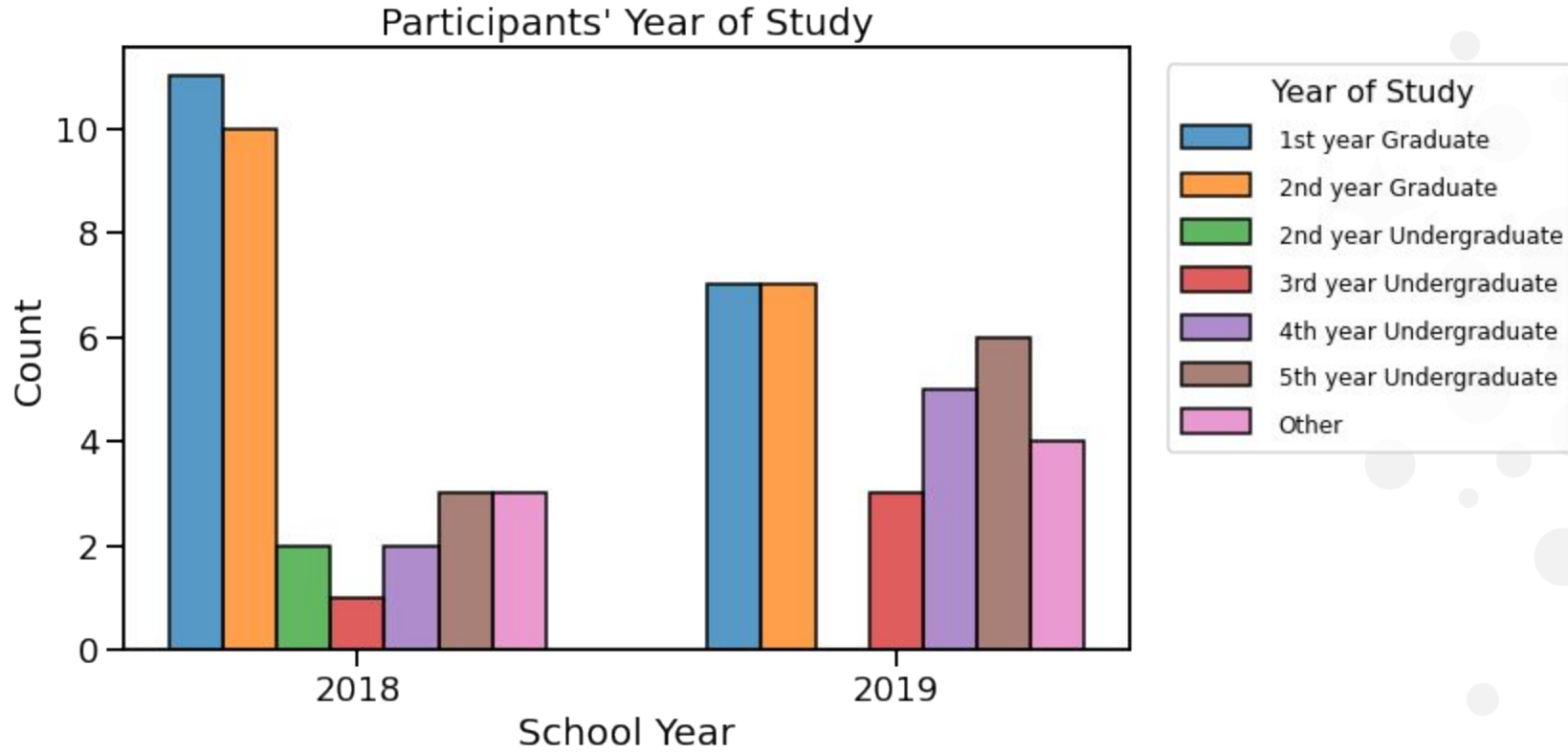


# The School in Numbers: participants





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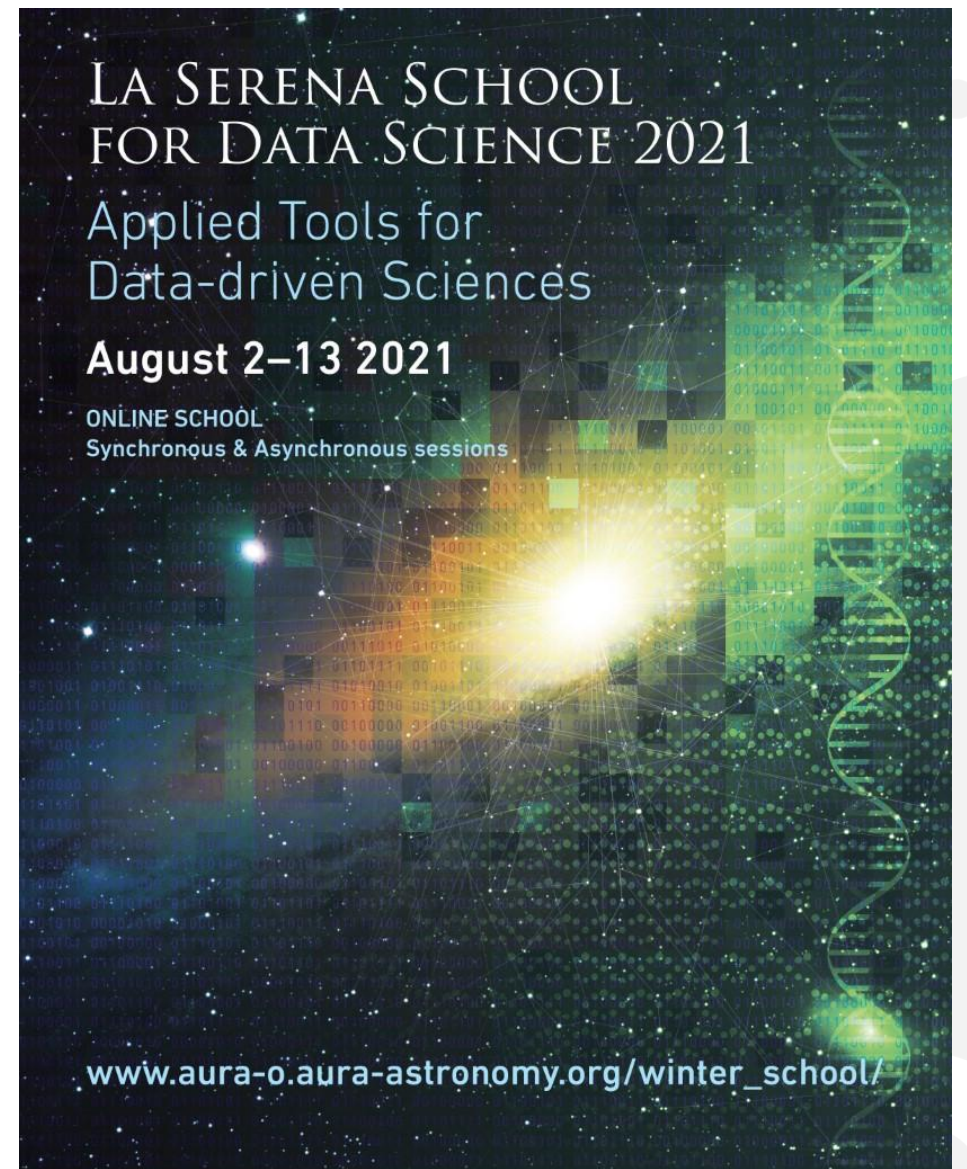




# REGISTRATION FOR 2021 IS OPEN!

- The 2021 program will be **FULLY ONLINE**
- The program will include Synchronous and Asynchronous sessions
- Preliminarily Synchronous load estimated ~3 hours / day.
- 10 days program
- Registration deadline: 2 April 2021

[http://www.aura-o.aura-astronomy.org/winter\\_school/](http://www.aura-o.aura-astronomy.org/winter_school/)

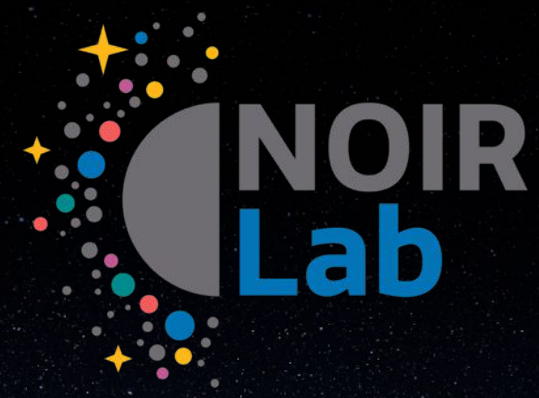


Sponsors:



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LA SERENA SCHOOL  
FOR DATA SCIENCE 2021

Applied Tools for  
Data-driven Sciences

**August 2–13 2021**

ONLINE SCHOOL  
Synchronous & Asynchronous sessions

[www.aura-o.aura-astronomy.org/winter\\_school/](http://www.aura-o.aura-astronomy.org/winter_school/)



Questions?

[http://www.aura-o.aura-astronomy.org/winter\\_school/](http://www.aura-o.aura-astronomy.org/winter_school/)