

# HERNÁN E. NORIEGA

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## EDUCATION

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**Instituto de Física, Universidad Nacional Autónoma de México (UNAM)** *2022 - Present*  
PhD in Science (Physics) *CDMX, Mexico*

*Advisors:* Dra. Mariana Vargas-Magaña & Dr. Alejandro Aviles

**Grants:** CONACYT Scholarship

**Instituto de Física, Universidad Nacional Autónoma de México** *2020 - 2021*  
Master in Science (Physics) *CDMX, Mexico*

**Thesis:** ‘Effects of massive neutrinos on the Large Scale Structure of the Universe’

*Thesis Advisors:* Dra. Mariana Vargas-Magaña & Dr. Alejandro Aviles

**Distinctions:** Graduated with honors; Score 100 %

**Grants:** CONACYT Scholarship, PAEP-UNAM

**Universidad del Atlántico (UA)** *2014 - 2019*  
BA in Physics *Barranquilla, Colombia*

**Thesis:** ‘Constant-roll inflation driven by a scalar field with nonminimal derivative coupling’

*Thesis Advisor:* Dr. Alexander Oliveros

**Distinctions:** Graduated with honors; 1<sup>st</sup> Class (Rank 1/55, 90 %)

**Grants:** UA Scholarship

## LANGUAGES

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**Spanish** Native

**English** Fluent

## LONG-TERM ACADEMIC VISITS

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**Instituto Nacional de Investigaciones Nucleares (ININ)** *2022 - Present*  
*Visiting Graduate Student with Dr. Alejandro Aviles* *La Marquesa, Mexico*

**Instituto de Ciencias Físicas, UNAM** *Jan. - April, 2021*  
*Visiting Graduate Student with Dr. Sebastien Fromenteau* *Cuernavaca, Mexico*

## PUBLICATION LIST

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**Profile:** [arXiv](#), [INSPIRE](#)

\* = Author list alphabetized

1. **Hernán E. Noriega**, Alejandro Aviles, Sebastien Fromenteau, Mariana Vargas-Magaña, “Fast computation of non-linear power spectrum in cosmologies with massive neutrinos”, *JCAP* 11 (2022) 038 ([arXiv](#)).
2. \*DESI Collaboration • B. Abareshi (incl. **Hernán E. Noriega**), “Overview of the Instrumentation for the Dark Energy Spectroscopic Instrument”, *Astron.J.* 164 (2022) 5, 207 ([arXiv](#)).

3. A. Oliveros, **Hernán E. Noriega**, “Constant-roll inflation driven by a scalar field with nonminimal derivative coupling”, *Int. J. Mod. Phys. D* **28** (2019) 12, 1950159 ([arXiv](#)).

## MENTIONS

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1. Alejandro Aviles, Arka Banerjee, Gustavo Niz, Zachary Slepian, “Clustering in massive neutrino cosmologies via Eulerian Perturbation Theory”, *JCAP* **11** (2021) 028, ([arXiv](#))

## SELECTED TALKS

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\* = Virtual Talk

2022

- *DESI Collaboration Meeting, Breakout 3a: Compressed Statistics (joint KP57+GQC) - Updates on FOLPS*, Cancun, Mexico, Dec.
- *VIII Essential Cosmology for the Next Generation*, Cancun, Mexico, Dec. - *Contributed Talk*.
- *\*Celebration for the Physicist day and the 20 year of the physics program*, Universidad del Atlantico, Barranquilla, Colombia, Nov. - *Invited Talk*.
- *\*DESI Collaboration Meeting, Breakout 7a: Update on GQC projects – Bayview*, Berkeley, California, USA, June.

2021

- *Short course: FFTLog formalism in cosmological perturbation theories*, Instituto Avanzado de Cosmología (IAC), CDMX, Mexico, Aug. - *Invited Talk*.
- *\*Celebration for the day of light*, SCOP (OSA & SPIE), Barranquilla, Colombia, May - *Invited Talk*.

2018

- *VIII Regional Physics Meeting*, SUE Caribe & Sociedad Colombiana de Física, Barranquilla, Colombia, Nov.
- *II Workshop on Current Challenges in Cosmology*, UAN, Univalle, UNAL y COLCIENCIAS, Bogotá, Colombia, Nov.
- *XV Departmental Meeting of Research*, RedCOLSI, Barranquilla, Colombia, May.

## ACADEMIC EXPERIENCE

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**Vera C. Rubin Observatory ([LSST](#))**

2022 - Present

*LSST member*

**Dark Energy Spectroscopic Instrument ([DESI](#))**

2021 - Present

*DESI member*

Galaxies Quasars Clustering (GQC) working group

**Institución Educativa Distrital Ciudadela Estudiantil**

2019 - 2020

*High School teacher in Physics and Mathematics*

*Barranquilla, Colombia*

**Universidad del Atlántico**

2019 - 2020

*Administrative staff: Physics labs*

*Barranquilla, Colombia*

**Universidad del Atlántico**

2016 - 2018

*Assistant teacher*

*Barranquilla, Colombia*

## TECHNICAL STRENGTHS

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Computing Languages	Python, C/C++ MATHEMATICA, MATLAB
Codes Developed	FOLPS $\nu$
Supercomputer	Miztli, Atocatl, NERSC

## REFERENCES

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**Dra. Mariana Vargas-Magaña**  
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**Dr. Sebastien Fromenteau**  
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