

# Sunny Vagnozzi

## Curriculum Vitae

Dipartimento di Fisica  
Università degli Studi di Trento  
Via Sommarive 14, 38123 Povo (TN), Italy  
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🌐 [www.sunnyvagnozzi.com/](http://www.sunnyvagnozzi.com/)



### Academic appointments

- 2022 – present Assistant Professor (tenure-track RTDb), **University of Trento**  
Also affiliated to the Trento Institute for Fundamental Physics and Applications (TIFPA)-INFN
- 2019 – 2022 Newton-Kavli Fellow, **Kavli Institute for Cosmology, University of Cambridge**  
Also affiliated to the Institute of Astronomy (IoA) and the Department of Applied Mathematics and Theoretical Physics (DAMTP), University of Cambridge
- 2019 – 2022 College Research Associate, **Homerton College, University of Cambridge**

### Education

- 2015 – 2019 PhD in Theoretical Physics, **Oskar Klein Centre, Stockholm University**  
*Advisor:* Prof. Katherine Freese
- 2013 – 2014 Master of Science in Physics, **University of Melbourne**  
*Advisor:* Dr. Robert Foot     *Final grade:* H1 (First Class Honours) with *Distinction*
- 2012 – 2013 Erasmus Fellow, **Imperial College London**
- 2009 – 2012 Bachelor of Science in Physics, **University of Trento**  
*Advisor:* Prof. Valter Moretti     *Final grade:* 110/110
- 2009 Violin Diploma (equivalent to BA), **Santa Cecilia Conservatory**

### Professional certifications

- 2023 – 2034 **Italian National Scientific Qualification** for the role of Full Professor in the competition sector 02/A2 - Theoretical Physics of Fundamental Interactions
- 2023 – 2034 **Italian National Scientific Qualification** for the role of Full Professor in the competition sector 02/C1 - Astronomy, Astrophysics, Earth and Planetary Physics

### Publications

- Publications Full lists of publications available on my [INSPIRE](#), [ADS](#), and [Google Scholar](#) profiles  
**Bibliometric metrics:** 67 papers (64 published/accepted for publication), 8501 citations, 133.5 average citations/published paper, h-index=50, m-index $\simeq$ 5.5 (computed from INSPIRE)

### Long-term international visits and other research experiences

- 2016 Visiting researcher, **University of Michigan** (*Host:* Prof. Katherine Freese)
- 2015 – 2016 Affiliated PhD student, **Nordic Institute for Theoretical Physics (NORDITA)**
- 2014 – 2015 Long-term visiting researcher, **Niels Bohr Institute** (*Host:* Prof. Subir Sarkar)

### Prizes, grants, and fellowships (selected)

#### Prizes

- 2023 [SIGRAV Prize](#), *Italian Society of General Relativity and Gravitation*
- 2022 [Buchalter Cosmology Prize](#) (3<sup>o</sup> prize)
- 2021 [Alfredo di Braccio Prize](#), *Accademia Nazionale dei Lincei*
- 2021 [Symmetry Young Investigator Award](#)
- 2020 [Springer Thesis Award](#), *Springer Nature*
- 2019 [Pio Picchi Prize](#), *Società Italiana di Fisica (Italian Physical Society)*
- 2015 Dean's Honours List, *University of Melbourne*

#### Grants

- 2023 UniTrento Internal Call for Research 2023 grant (135,200.00€, funding the research project “*DARKTRACK: Searching for Dark Energy off the beaten track*”)
- 2022 Marie Skłodowska-Curie Fellowship (188,590.08€, funding the research project “*PADOVA: Precision Cosmology and Dark Sector Physics with Gravitational Waves*”) [**declined**]

2021 – 2022 Grant from the *Foundation Blanceflor Boncompagni Ludovisi, née Bildt* (100,000.00 SEK, funding the research project “*DECODE: Direct Detection of Dark Energy*”)

#### Fellowships (selected)

2021 Humboldt Fellowship, *Alexander von Humboldt Foundation* [declined]

2019 [Newton-Kavli Fellowship](#), *KICC, University of Cambridge*

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## Teaching experience

- 2023 – present *Advanced Topics in Theoretical Physics*, University of Trento (main lecturer)
- 2023 – present *General Physics I (Part 2)*, University of Trento (main lecturer)
- 2023 *Tonale Winter School on Cosmology 2023* (Passo del Tonale, Italy; invited lecturer)
- 2023 *Percorso di Approfondimento in Fisica*, University of Trento
- 2017 – 2018 *Programming, numerical methods and statistics for physicists*, Stockholm University (TA)
- 2016 – 2018 *Cosmology and Particle Astrophysics*, Stockholm University (TA)
- 2016 – 2017 *Mathematical Methods for Physicists*, Stockholm University (TA)
- 2014 *Experimental design and data analysis*, University of Melbourne (TA)
- 2014 *Physics for Biomedicine*, University of Melbourne (TA)
- 2014 *Mathematics for Biomedicine*, University of Melbourne (TA)
- 2014 *Physics 2*, University of Melbourne (TA)
- 2013 *Physics 1*, University of Melbourne (TA)

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## Student supervision

### PhD students

2023 – present Davide Pedrotti, main advisor (University of Trento)

2019 – 2022 Isabelle Tanseri, co-advisor (Stockholm University; main advisor: Prof. Katherine Freese) → subsequent position: Jr Data Analyst at Facility Labs AB, Stockholm

### MSc students or equivalent

2024 – present Leonardo Comini, main advisor (University of Trento)

2024 – present Mattia Scotto, main advisor (University of Trento)

2023 – present Giovanni Piccoli, main advisor (University of Trento)

2022 – 2023 Davide Pedrotti, main advisor (University of Trento and University of Tübingen; co-advisor: Prof. Kostas Kokkotas) → subsequent position: PhD student at the University of Trento

2020 – 2021 Alexander Reeves, main advisor (University of Cambridge; co-advisors: Prof. George Efstathiou and Prof. Blake Sherwin) → subsequent position: PhD student at ETH Zürich

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## Languages

<i>Italian</i>	Native/bilingual proficiency	<i>Spanish</i>	Full professional proficiency
<i>English</i>	Native/bilingual proficiency TOEFL: 118/120 (10/2014)	<i>Danish</i>	Limited working proficiency
<i>Swedish</i>	Full professional proficiency	<i>Norwegian (Bokmål)</i>	Elementary proficiency

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## Computer skills

<i>Programming</i>	Python (advanced user)	C++, C, Fortran (upper intermediate user)
<i>Tools</i>	Mathematica, Gnuplot, Minitab, Git, Vi, MPI, OpenMP, L <sup>A</sup> T <sub>E</sub> X, OpenOffice Suite	
<i>Other skills</i>	Machine learning, job management on HPC clusters	

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## Seminars, colloquia, and conference talks

Delivered over 70 talks at seminars/webinars and colloquia at top institutions throughout the world (places where I recently gave invited talks include but are not limited to Cambridge, Fermilab, Perimeter, Imperial, ETH, UCLA, UCL, McGill, Sussex, KCL, Michigan, SISSA, LMU, Berkeley, Harvard), as well as several international conferences and workshops: for a full list of talks with slides and videos (where available) see [www.sunnyvagnozzi.com/en/talks](http://www.sunnyvagnozzi.com/en/talks)

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## Academic service, advisory, membership, outreach (selected)

### Academic service

2023 – present Member of the Physics Teaching Committee, University of Trento

- 2023 – present Member of the Physics Doctoral School Committee, University of Trento
- 2022 – present Member of the Physics Department Board, University of Trento
- 2021 – 2022 Member of the *IoA Equality, Diversity & Inclusion Committee*, University of Cambridge
- 2020 – 2021 Organizer for the *Cosmology Lunch* seminar series at the University of Cambridge
- 2017 – 2018 Convener of the *Cosmology and Gravity Working Group* at the OKC, Stockholm University

#### Work as thesis committee member

- 2023 MSc opponent, Francesco Venturelli (University of Trento)
- 2023 PhD committee member, Tiziano Schiavone (University of Pisa)
- 2023 MSc opponent, Víctor Alexander Torres (University of Trento)
- 2023 BSc committee member, Lavinia Feliciangeli (University of Trento)

#### Advisory and reviewing

- 2023 – present Reviewer for *FONDECYT*, Chile
- 2022 – present Editor of *Physics of the Dark Universe*
- 2021 Scientific consultant for *The Secrets of the Universe*, children popular science book in the *Very Short Introductions for Curious Young Minds* series (Oxford University Press)
- 2016 – present Referee for most of the major journals in cosmology, astrophysics, and high-energy physics, including *Nat. Astron.*, *Nat. Commun.*, *PRL*, *PRD*, *PLB*, *MNRAS*, *ApJ*, *JCAP*, *JHEP*, *CQG*, *PDU*, *EPJC* (see my [Web of Science profile](#) for more information)

#### Membership

- 2023 – present Lifetime member of the *Italian Society of General Relativity and Gravitation*
- 2022 – present Member of the *CosmoVerse* COST Action
- 2022 – present Member of *EuCAPT* (*European Consortium for Astroparticle Theory*)
- 2021 – present Fellow of the *Royal Astronomical Society*
- 2014 – present Member of the *Italian Physical Society*

#### Outreach

- 2023 *Universe Today* outreach interview
- 2023 Organizer and volunteer for *Notte della Ricerca* (European Researchers' Night), Trento
- 2023 *Physics Frontiers* outreach interview (associated [Youtube Random Questions episode](#))
- 2021 Outreach webinar for *Associazione AstronomiAmo* (amateur astronomers association) [[video](#)]
- 2018 Organizer and volunteer for *ForskarFredag* (European Researchers' Night), Stockholm

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## Press coverage and media appearance (10 main articles)

- November 2023 “*If you account for Laniakea, the Hubble tension might be even larger*”, **Phys.org**
- November 2023 “*The universe’s puzzlingly fast expansion may defy explanation, cosmologists fret*”, **Science**
- September 2023 “*It’s going to take more than early dark energy to resolve the Hubble tension*”, **Phys.org**
- November 2022 “*Si può escludere l’inflazione cosmica?*” (in Italian), **Media INAF**
- November 2022 “*Can cosmic inflation be ruled out?*”, **joint Cambridge-Harvard press release** (re-posted by hundreds of news outlets throughout the world, including **Phys.org**, see [Altmetric](#))
- October 2021 “*Signal from the XENON1T experiment may be a hallmark of dark energy*”, **Forbes**
- September 2021 “*Have we detected dark energy? Cambridge scientists say it’s a possibility*”, **University of Cambridge press release** (re-posted by hundreds of news outlets throughout the world, including **Phys.org** and **ScienceDaily**, see [Altmetric](#))
- March 2021 “*Eppur è piatto? Così l’universo torna euclideo*” (in Italian), **Media INAF**
- July 2018 “*What is the Sun made of and when will it die?*”, **Quanta Magazine**
- October 2017 “*Hiding in plain sight: the mystery of the Sun’s missing matter*”, **New Scientist**

Last updated January 5, 2024