Università di Genova

# Agnese Seminara

Full Professor

## EDUCATION AND TRAINING

2007 PhD in physics
**Transport and diffusion in complex flows**
Double-badged PhD
Université de Nice**, France**

2004 B.Sc. and M.Sc. in physics
**Role of turbulence for the microphysics of warm clouds**
Final mark 110/110 cum laude
University of Genoa**, Italy**

## PROFESSIONAL HISTORY

2021-ongoing
**Full Professor**
Teaching and research in fluid dynamics, biology and machine learning
University of Genoa, Italy

2019-2021
**Research Director**
CNRS, Nice, France

2013-2019
**Researcher**
CNRS, Nice, France

2012-2013
**Instructor Applied Mathematics**
Harvard University, Cambridge, USA

2011-2012
**Marie Curie International Outgoing Postdoctoral fellow**
Institut Pasteur, Paris, France

2018-2011
**Marie Curie International Outgoing Postdoctoral fellow**
Harvard University, Cambridge, USA

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# ACADEMIC APPOINTMENTS

2023-ongoing
**Scientific Advisory board Alma Dal Co Foundation and Alma Dal Co Fellowship**
Alma Dal Co Foundation

2024-2028
**Elected member IUTAM**
IUTAM Congress

2024-ongoing
**Elected member Accademia Ligure di Scienze e lettere**
Accademia Ligure di Scienze e Lettere

2021-2022
**Member CNRS National Hiring Committee, section 02**
CNRS, France

2018-
**Scientific Advisory board**
International Research Network “Prediction Adaptation and Navigation”

2018-2023
**Scientific Advisory Board**
Institut d’études scientifiques, Cargèse, France

2015-2017
**Scientific Advisory Board (conseil academique)**
Université Côte d’Azur, Nice, France

# EXPERIENCE

**MAIN SEMINARS**

Gave over 80 invited and 25 contributed talks in international venues and 12 invited courses at advanced schools.

Selected invited lectures at international schools
2025 Mathematics of Machine Learning, IMPA, Rio de Janeiro, Brazil
2023 Theoretical biophysics summer school, Les Houches, France
2023 Learning and navigating dynamical systems, Gran Sasso Science Institute, L’aquila, Italy
2023 Theoretical biophysics advanced school, Boulder, USA
2018 System neurophysics, Quantitative biology School, KITP, Santa Barbara, USA
2018 Multiscale integration in biological systems Advanced course, Institut Curie Paris, France

Selected invited talks
2025 Theory and Concepts in biology, Symposium, EMBL, Heidelberg, Germany
2024 Biophysics of Fungal Spore Dispersal and its relevance to plant disease, Conference, FABI-ICTP, Pretoria, South Africa
2024 Cracking the Olfactory Code, Conference, NSF, ICTP, Trieste, Italy

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2024 American Physical Society APS, March Meeting, Minneapolis, USA
2023 Italian Society of Statistical Physics, Conference, Parma, Italy
2023 Olfactory navigation, Conference, Janelia, USA
2021 SMEEB21 Stochastic Models and Experiments in Ecology, Conference, Venice, Italy
2020 Dutch KNAW biophysics meeting, Conference, Amsterdam, Netherlands
2020 ISOT International Symposium on olfaction and taste, Symposium, Portland, USA
2019 Towards the physics of complex behavior Symposium, CUNY Grad Center, New York, USA
2017 Frontiers in olfaction, Conference, ICTP, Trieste, Italy
2015 Sensing information and decision at the cellular level, Conference, ICTP, Trieste, Italy
2015 Deconstructing the sense of smell Conference, KITP, Santa Barbara, USA
2014 International Mycological Society, International conference, Bangkok, Thailand

## TEACHING OR RESEARCH POSITIONS (FELLOWSHIPS) AT FOREIGN UNIVERSITIES AND RESEARCH INSTITUTES (SELECTED)

2024 — current Turbulence and turbulent modeling
Instructor, Mechanical Engineering M.Sc.
University of Genoa, Italy

2023 — current Fluid Mechanics
Instructor, Mechanical Engineering B.Sc.
University of Genoa, Italy

2022 — current Mechanics of biological tissue
Instructor, Bioengineering M. Sc.
University of Genoa, Italy

2022 A tour of reinforcement learning and applications
Instructor, Environmental Engineering PhD
University of Genoa, Italy

2014 Applied Mathematics AM105
TA, Graduate School of Arts and Sciences
Harvard University, Cambridge, USA

2012 Applied Mathematics AM201
Instructor, Graduate School of Arts and Sciences
Harvard University, Cambridge, USA

2008-2011 Marie Curie postdoctoral fellow
Postdoc
Harvard University, Cambridge, USA & Institut Pasteur, Paris, Francia

Fall 2013 – yearly Visiting Scholar
Visiting scholar
Harvard University, Cambridge, USA

## SCIENTIFIC RESPONSIBILITY FOR RESEARCH PROJECTS ACCEPTED FOR FUNDING ON THE BASIS OF COMPETITIVE CALLS INVOLVING PEER REVIEW

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2021 ERC Consolidator grant RIDING
Physics informed machine learning to sense and navigate turbulent environments
European research council, PI

2020 NIH RO1
Navigation with complex odor dynamics: computational principles and neural circuit implementation in mice
National Institutes of Health, co-PI

2021 European office of aerospace research and development
Machine learning approaches to navigate turbulence
AFOSR, co-PI

2019 ANR DynCelPol
Dynamics of cell polarity establishment
Agence Nationale de la recherche, co-PI

2019 CNRS MITI
Lipid transport in health and disease
CNRS, Mission pour les initiatives transverses et interdisciplinaires, co-PI

2018 CNRS PICS 2FORECAST
Weather forecasting by the fungi: stochastic strategies for spore liberation
CNRS, Projet international de cooperation scientifique, PI

2017 Thomas Jefferson Fund
Olfactory navigation using naturally fluctuating odor cues
FACE Foundation, co-PI

**EDITORSHIP OR PARTICIPATION IN EDITORIAL BOARDS OF JOURNALS, PUBLISHING SERIES, ENCYCLOPAEDIAS AND TREATISES**

2019 – ongoing Editor peer reviewed journal
Reviewing Editor
eLife

2016 – 2019 Editor peer reviewed journal
Reviewing Editor
Fungal Ecology

2013 – ongoing Reviewer peer reviewed jounals: *Nature Physics; Nature Communication; Proceedings of the National Academy of Science; eLife; Physical Review Letters; Physical Review B; Physical Review E; Journ Stat Phys; Scientific Reports; Fungal Ecology; PLOS Computational Biology; Mycologia; Proceedings of the Royal Society B; Fungal Ecology; Ecology; SciPost.*

2013 – ongoing Reviewer international funding schemes: European Research Council; Human Frontiers in Science Program; German Science Foundation; CNRS (PEPS, Momentum, MECANOBIO); IDEX UCAJEDI; Institut Pasteur ACIP; IDEX Sorbonne Universite´.

**SELECTED PRIZES AND ACCOLADES FOR SCIENTIFIC ACTIVITY, INCLUDING MEMBERSHIP OF ACADEMIES**

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2024 Accademia Ligure Scienze e lettere
2020 ERC Consolidator grant
2018 Research and PhD Supervision Award CNRS (PEDR)
2017 Bronze Medal CNRS
2012 Rita Levi Montalcini young investigator award (declined)
2008 Marie Curie International Outgoing Fellowship
2006 L'Oréal Italia–Unesco fellowship for women in science