

# Leonardo PACCIANI-MORI

## PERSONAL DATA

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ADDRESS: Department of Physics and Astronomy “Galileo Galilei”  
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## RESEARCH EXPERIENCE

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APR 1<sup>ST</sup> 2019 – SEP 30<sup>TH</sup> 2019 Fellow of the Department of Physics, **Harvard University**, Cambridge (MA)  
**Supervisors:** Dr. Andrea GIOMETTO, Prof. Andrew MURRAY, Prof. David NELSON  
*I have worked as a visiting graduate student in the groups of Andrew Murray and David Nelson, supervised by Andrea Giometto*



## EDUCATION

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OCT 1<sup>ST</sup> 2017 – DEC 16<sup>TH</sup> 2020 Ph.D. student in *Physics*, **University of Padua**, Padua (Italy)  
**Thesis:** *Two improved approaches to the study of competition in microbial communities*  
**Formal supervisor:** Prof. Flavio SENO  
**Supervisor:** Prof. Amos MARITAN  
**Co-supervisor:** Prof. Samir SUWEIS  
**FINAL EVALUATION:** Excellent



OCT 1<sup>ST</sup> 2015 – SEP 26<sup>TH</sup> 2017 Master's Degree in *Physics*, **University of Padua**, Padua (Italy)  
Theoretical course of study  
**Thesis:** *A physics approach to ecosystem dynamics*  
**Advisor:** Prof. Amos MARITAN  
**FINAL GRADE:** 110/110 *cum laude*



OCT 1<sup>ST</sup> 2012 – JUL 22<sup>ND</sup> 2015 Bachelor's Degree in *Physics*, **University of Padua**, Padua (Italy)  
**Thesis:** *Curvature effect on patterning dynamics on spherical membranes*  
**Advisor:** Prof. Enzo ORLANDINI  
**FINAL GRADE:** 108/110



## PUBLICATIONS

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- Pacciani-Mori L., SUWEIS S., MARITAN A. AND GIOMETTO A. (2021) Constrained proteome allocation affects coexistence in models of competitive microbial communities, *The ISME Journal*. DOI: [10.1038/s41396-020-00863-0](https://doi.org/10.1038/s41396-020-00863-0)
- Pacciani-Mori L., GIOMETTO A., SUWEIS S. AND MARITAN A. (2020) Dynamic metabolic adaptation can promote species coexistence in competitive microbial communities, *PLOS Computational Biology*, 16(5): e1007896. DOI: [10.1371/journal.pcbi.1007896](https://doi.org/10.1371/journal.pcbi.1007896).

## ATTENDED CONFERENCES, WORKSHOPS AND SCHOOLS

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NOV 30<sup>TH</sup> – DEC 18<sup>TH</sup> 2020 **Winter School on Quantitative Systems Biology: Quantitative Approaches in Ecosystem Ecology**  
Online school  
**Lectures held:** TUTORIAL ON NONLINEAR DYNAMICS  
[Website](#)

- NOV 12<sup>TH</sup> – 13<sup>TH</sup> 2020 **Paris Biological Physics Community Day**  
Online conference  
**Contributed talk:** CONSTRAINED PROTEOME ALLOCATION AFFECTS COEXISTENCE IN MODELS OF COMPETITIVE MICROBIAL COMMUNITIES  
[Website](#)
- JAN 7<sup>TH</sup> – 10<sup>TH</sup> 2020 **English for Academic Writing**  
Forlì campus, *University of Bologna*  
[Website](#)
- MAR 6<sup>TH</sup> – 10<sup>TH</sup> 2019 **Quinta Conferenza Italiana degli Studenti di Fisica**  
(5<sup>th</sup> Italian Conference of Physics Students)  
Department of Physics, *University of Milan*  
**Contributed talk:** STRATEGIE METABOLICHE ADATTIVE: UNA RISPOSTA (APPARENTEMENTE) SEMPLICE ED EFFICACE A MOLTI PROBLEMI IN ECOLOGIA E MICROBIOLOGIA  
(*Adaptive metabolic strategies: an (apparently) simple and effective answer to many challenging problems in ecology and microbiology*)  
**Contributed poster:** ADAPTIVE CONSUMER-RESOURCE MODELS CAN EXPLAIN DIAUXIC SHIFTS AND THE VIOLATION OF THE COMPETITIVE EXCLUSION PRINCIPLE  
[Website](#)
- DEC 20<sup>TH</sup> 2018 **The physics of complex systems IV: from Padova to the rest of the world and back**  
Department of Physics and Astronomy, *University of Padua*  
**Invited talk:** ADAPTIVE METABOLIC STRATEGIES: AN (APPARENTLY) SIMPLE AND EFFECTIVE ANSWER TO MANY CHALLENGING PROBLEMS IN ECOLOGY AND MICROBIOLOGY
- SEP 23<sup>RD</sup> – 28<sup>TH</sup> 2018 **Conference on Complex Systems 2018**  
Vellidio Convention Center, Aristotle University of Thessaloniki  
**Contributed talk:** ADAPTIVE METABOLIC STRATEGIES EXPLAIN DIAUXIC SHIFTS AND PROMOTE SPECIES COEXISTENCE  
[Website](#)
- SEP 17<sup>TH</sup> – 21<sup>ST</sup> 2018 **104<sup>o</sup> Congresso della Società Italiana di Fisica**  
(104<sup>th</sup> Congress of the Italian Physical Society)  
Department of Physics, University of Calabria  
**Invited talk:** FISICA ED ECOSISTEMI: IL DILEMMA DEL RAPPORTO STABILITÀ-BIODIVERSITÀ  
(*Physics and ecosystems: the dilemma of the stability-biodiversity relationship*)  
[Website](#)
- APR 20<sup>TH</sup> – 23<sup>RD</sup> 2018 **Quarta Conferenza Italiana degli Studenti di Fisica**  
(4<sup>th</sup> Italian Conference of Physics Students)  
Department of Physics, University of Pisa  
**Contributed talk:** FISICA ED ECOSISTEMI: IL DILEMMA DEL RAPPORTO STABILITÀ-BIODIVERSITÀ  
(*Physics and ecosystems: the dilemma of the stability-biodiversity relationship*)  
[Website](#)
- APR 5<sup>TH</sup> – 7<sup>TH</sup> 2018 **Stochastic Models in Ecology and Evolutionary Biology**  
Venetian Institute of Sciences, Letters and Arts, Venice  
**Contributed talk:** THE ROLE OF METABOLIC TRADE-OFFS IN THE ESTABLISHMENT OF BIODIVERSITY
- FEB 19<sup>TH</sup> – MAR 16<sup>TH</sup> 2018 **Spring College on the Physics of Complex Systems**  
International Centre for Theoretical Physics, Trieste  
[Website](#)
- AUG 7<sup>TH</sup> – 13<sup>TH</sup> 2017 **32<sup>nd</sup> International Conference of Physics Students**  
University of Turin  
Attended as *national delegate* of the Italian Association of Physics Students  
[Website](#)

- MAY 11<sup>TH</sup> – 13<sup>TH</sup> 2017 **Terza Conferenza Italiana degli Studenti di Fisica**  
(3<sup>rd</sup> Italian Conference of Physics Students)  
Department of Physics, University of Bari  
Attended as *spokesperson of the Local Committee of Padua of the Italian Association of Physics Students*  
[Website](#)
- OCT 3<sup>RD</sup> – 6<sup>TH</sup> 2016 **Venice meeting on fluctuations in small complex systems III**  
Venetian Institute of Sciences, Letters and Arts, Venice
- APR 22<sup>ND</sup> – 24<sup>TH</sup> 2016 **Seconda Conferenza Italiana degli Studenti di Fisica**  
(2<sup>nd</sup> Italian Conference of Physics Students)  
Department of Physics, University of Turin  
[Website](#)

## HONORS AND AWARDS

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**Best contributed talk** at the 4<sup>th</sup> Italian Conference of Physics Students.

**Best poster** at the 5<sup>th</sup> Italian Conference of Physics Students.

## ORGANIZED CONFERENCES, WORKSHOPS AND SCHOOLS

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- OCT 2016 - MAY 2017 **Sei Spritz Facili**  
University of Padua, *Department of Physics and Astronomy*  
*Series of six informal lectures held by professors for the students of Physics and Astronomy, covering the areas over which research is carried out in the Department.*  
*Activity of the Padua Local Committee of the Italian Association of Physics Students.*

## TEACHING EXPERIENCE

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- NOV 30<sup>TH</sup> – DEC 1<sup>ST</sup> 2020 **Tutorial on nonlinear dynamics**  
*International Centre for Theoretical Physics*  
*Introductory online lectures on nonlinear dynamics, part of the Winter School on Quantitative Systems Biology*  
[Website](#)
- DEC 6<sup>TH</sup> – 13<sup>TH</sup> 2018  **$\LaTeX$  for dummies: guida di sopravvivenza per fisici**  
( $\LaTeX$  for dummies: a survival guide for physicists)  
Department of Physics, *University of Padua*  
*Introductory 4-lecture course on  $\LaTeX$  for complete beginners, organized with the Padua Local Committee of the Italian Association of Physics Students.*  
[Website](#)

## SERVICE AND MEMBERSHIPS

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- OCT 22<sup>ND</sup> 2019 – PRESENT DAY **Member of the Association of PhD students and graduates in Italy**
- OCT 20<sup>TH</sup> 2018 – SEP 30<sup>TH</sup> 2019 **Vicepresident of the Italian Association of Physics Students**
- SEP 23<sup>RD</sup> 2018 – PRESENT DAY **Member of the Complex Systems Society**
- OCT 1<sup>ST</sup> 2017 – SEP 30<sup>TH</sup> 2019 **Secretary of the Italian Association of Physics Students**  
Elected during the 3<sup>rd</sup> Italian Conference of Physics Students
- MAY 2<sup>ND</sup> 2016 – SEP 30<sup>TH</sup> 2017 **President of the Local Committee of Padua of the Italian Association of Physics Students**
- FEB 26<sup>TH</sup> 2016 – PRESENT DAY **Member of the Italian Association of Physics Students**

## LANGUAGE SKILLS

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ITALIAN: Native

ENGLISH: Fluent

SPANISH: Intermediate

**Other languages studied (mainly for personal interest and at basic or elementary level):**  
Japanese, Chinese (Mandarin), Esperanto, Greek (modern), German.