

Gabriele Micali

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Summary

I am a physicist interested in biological questions and in particular on microbial ecology. My main goal is to understand how microbial communities work: How do bacteria respond to environmental changes? How do they interact with other bacteria? Can we predict properties and functions that emerge in self-organising microbial communities?

- Publications in peer-reviewed journals: 11
- H-index: 7
- Total rised money: 1m € - Early Carrer Fellowship Award 2020 from the Human Technopole

Research Experience

starting 04.22	Young PI , Leading the Microbial Ecology group at IRCCS Humanitas Research Hospital, Rozzano, MI, Italy
03.17 - 02.22	Postdoctoral research fellow , ETH Zürich and Eawag Dübendorf, Switzerland
11.16 - 02.17	Visiting researcher , IFOM, Milan, Italy
05.13 - 08.16	Research assistant , Imperial College London, London, UK
2012	Visiting Researcher , Imperial College London, London, UK
08.11 - 10.11	UROF Project , Visiting student, Imperial College London, London, UK

Education

06.13 - 02.17	PhD in Life Sciences , Imperial College, London, UK
09.10 - 02.13	MSc in Physics , University of Milan, Italy
09.06 - 03.10	BSc in Physics , University of Milan, Italy

Teaching Experience

2018 - 2020	Microbiology practicum , for BSc students in Environmental Systems Science, ETH Zürich
2018 - 2019	Microfluidics for Microbial Ecology , for graduate students, ETH Zürich
2015	MATLAB practicum , for BSc students in Biology and Biochemistry, within Integrative Systems Biology course, Imperial College
2013 - 2014	Mathematics practicum , for BSc students in Biology and Biochemistry, within Integrative Systems Biology course, Imperial College

Awards

2015	Award of a Faculty of Natural Sciences Prize for Excellence in the Support of Teaching and Learning
2007 & 2008	Honorable student. Partial funding of tuition fee (Italian state grant)

Scientific Outreach

Referee | for Phys Rev E, FEMS Microb. Rev., Comm. Phys., ISME J., and Front. in Microbiol.

Additional Skills

IT Skills | C++ (proficient user), Matlab (proficient user), R (proficient user), Mathematica (proficient user), Java (good user)
Languages | Italian (native language), English (fluent), Spanish (fluent), German (basic)

Selected Presentations and Seminars

Invited Talks

Jul 2019 | Center for Physics, Aspen, CO, United States
Mar 2016 | Institute for Advanced Study, Princeton, NJ, United States
Mar 2016 | New York University, New York, NY, United States
Dec 2015 | Eawag-ETH, Zürich, Switzerland
Aug 2014 | UC Davis, CA, United States

Contributed Talks

Sep 2018 | *EMBO workshop: cell size and shape*, Bangalore, India
Mar 2016 | *APS March meeting*, Baltimore, Maryland, US
Aug 2014 | *The Eighth q-Bio Conference*, Santa Fe, New Mexico, USA

Referees

Martin Ackermann

Department of Environmental Systems Science,
ETH Zürich
Überlandstrasse 133, 8600 Dübendorf, CH
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Marco Cosentino Lagomarsino

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IFOM and Milan University,
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Robert G. Endres

Department of Life Sciences,
Imperial College London
303 Sir Ernst Chain Building, SW7 2AZ London, UK
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Extended Informations: Research Experience

- starting 04.22 **Young PI**, IRCCS Humanitas Research Hospital, Rozzano, MI, Italy
- Leading the Microbial Ecology group
 - Initial funding from the Early Career Fellowship Award from the Human Technopole
 - Project title: '*Individual behaviors matter: understanding colonization resistance in the human gut from a bacterial single-cell perspective*'
 - Designed for two PhD students and one postdoc
- 03.17 - 02.22 **Postdoctoral research fellow**, ETH Zürich, Switzerland and Eawag Dübendorf
- Working in the Microbial Ecology group led by Prof. Martin Ackermann
 - Leading research, corresponding author in 2 manuscripts (draft stage)
 - Involved in internal collaborations, co-author in 2 manuscripts (draft stage)
 - Involved in independent external collaborations, 3 published and 2 draft stage manuscripts without Prof. Martin Ackermann
 - Teaching Microbiology practicum and course for Microfluidics for Microbial Ecology
 - From the beginning of the COVID-19 pandemic: (i) representing the group at Departmental meetings, (ii) organizing social and scientific group activities
 - 2019 group retreat organizer
 - Funded by SNF grants to Martin Ackermann
 - Keywords: Mathematical modelling / Image analysis / Microfluidics / Fluorescent microscopy / Ecology / Single cell behaviors
- 11.16 - 02.17 **Visiting researcher**, IFOM, Milan, Italy
- Working in Prof. Marco Cosentino Lagomarsino group
 - Keywords: Cell division and size control / DNA replication / Theoretical Modelling / Experimental collaborations
- 05.13 - 08.16 **Research assistant**, Imperial College, London, UK
- Working in Prof. Robert G Endres group
 - Teaching Mathematics and MATLAB practicums
 - Funded by ERC starting grant to Robert Endres
 - Keywords: Information theory / Bayesian inference / Bacterial chemotaxis / Stochastic thermodynamics / Experimental collaborations
- 2012 **Visiting Researcher**, Imperial College, London, UK
- Working in Prof. Robert G Endres group
 - Keywords: Limits of sensing / Amplitude and frequency modulation of signals
- 08.11-10.11 **UROP Project**, Visiting student, Imperial College, London, UK

Extended Informations: Education

- 06.13 - 02.17 **PhD in Life Sciences**, Imperial College, London, United Kingdom
- Thesis title: *Bacterial chemotaxis: from information processing to behaviour*
 - Supervisor: Prof. Robert Endres
 - Reviewers: Prof. Micheal PH Stumpf and Prof. Peter Swain
- 09.10 - 02.13 **MSc in Physics**, University of Milan, Italy. Grade: 109/110
- Thesis: *Amplitude and Frequency Modulation in Gene Expression*
 - Supervisors: Prof. Robert Endres (Imperial College, London) and Prof. Guido Tiana (University of Milan)
 - Main subjects: quantum field theory, complex systems, statistical mechanics and biological physics
- 09.06 - 03.10 **BSc in Physics**, University of Milan, Italy. Grade: 107/110
- Thesis: *A Model of Evolution by Duplication and Innovation of transcriptional networks*
 - Supervisors: Dr. Bruno Bassetti (University of Milan), Prof. Marco Cosentino Lagomarsino (at the time at Université Pierre et Marie Curie, Paris)