

Curriculum vitae

Laura Bruno obtained her degree in Biological Sciences with honours in 1995 and the Ph.D. in Evolution Biology and Ecology in 2004. Since 2008 she has a permanent position as Researcher in Botany (SSD BIO/01) at the Department of Biology, University of Rome "Tor Vergata".

Since 2012 she is the responsible of the Laboratory of Biology of Algae.

In 2017 she obtained the National Scientific Qualification at the level of Associate Professor in Botany (SSD BIO/01).

Teaching activity

2004-: Teacher of the courses *Systematic of Phytobenthos, Plant evolution, Botany and Plant biotechnology applied to the Cultural Heritage* in courses for bachelor and master degree in Biological Sciences and Industrial Biotechnology at the University of Rome 'Tor Vergata';

2015-: Teacher in the International Master 'Biology for the knowledge and conservation of cultural heritage' at the University of Roma Tre.

-Since 2012 to present she supervised many students of bachelor, master and Ph.D. thesis; she is the supervisor of many Erasmus students. In 2015 she supervised and hosted in her lab a student from the School of Doctorate in 'Agricultural Engineering and Soil Sciences' of the University of Teheran (Iran).

2011-: she is a member of the School of Doctorate in 'Evolutionary Biology and Ecology', University of Rome 'Tor Vergata'.

-Member of various commission for the evaluation of final PhD defence (University of Rome Tor Vergata, University of Florence, University Sapienza di Roma), selection of foreign students for the admission to the PhD course of University of Rome Tor Vergata, selection for fellowships, evaluation commission for the internship of teacher of higher school TFA A060.

Current scientific activity

-Selection and characterization of cyanobacteria and microalgae as potential producers of biodiesel and other valuable compounds; optimization of culture conditions in order to improve the production of biomass and lipid content; biotechnological applications of microalgal biomass in the field of energy, environment, nutraceutical and nanotechnologies; diatom frustule photonics for random lasing and dye trapping applications.

-Studies for microalgae application for the bioremediation of wastewaters by removal of nitrogen, phosphorous and heavy metals

-Characterization of epilithic cyanobacterial strains and biofilms biodeteriorating cultural heritages in indoor and outdoor environments, acclimation and adaptation to different light conditions, systematics and phylogeny.

-Development of non-invasive and non-destructive techniques against biological colonization as conservation strategies of Cultural Heritages.

Responsibility in national and international projects

-PI of the Unit Roma Tor Vergata of the project POR FESR LAZIO 2014-2020 'MICROBE'

-PI of the project Mission Sustainability 2017, University of Rome 'Tor Vergata', title: 'GETPOWER- GrEen Technologies: water cleanup of Pollutants with plants and microalgae and recycling of biOmass for reneWable Energy pRoduction'

-Head of the Unit Roma 'Tor Vergata' in the project PRIN2015 of the Italian Ministry of University and Research – title: *The evolution of phytochelatin synthase (PCS) from cyanobacteria to basal tracheophytes: Is the regulation of Fe and other metal micronutrient homeostasis a primeval and ubiquitous PCS function?*

-Coordinator and scientific responsible of the research activity of the 'Pontificia Commissione di Archeologia Sacra' in the *Catacombs of Marcellino and Pietro* in Rome in collaboration with the University of Messina and the Consejo Superior de Investigaciones Científicas of Madrid, 2015-2016

-Participant in the project PON03PE_00214_1 as a member of the 'COIRICH (Italian Research Infrastructure for Cultural Heritage) - *Nanotechnologies and nanomaterials for Cultural Heritage – TECLA*' 2014-2018

-one of the three Principal Investigator of the project Uncovering Excellence 2014, University of Rome 'Tor Vergata' - '*PHANTOM – PHotonics ApplicatioN in diaTOM frustules*';

-Italian Responsible of the project '*Biotechnology and nanotechnology for Cultural Heritage*' in the frame of the International Cooperation Program between the University of Rome "Tor Vergata" and the Visva-Bharati University, Santiniketan (West Bengal, India), 2012-2013

-Principal Investigator of the Italian project (Regione Lazio) for the transfer of knowledge from research centres to SMEs: '*DICO-BEN, Diodes for the control of Cultural Heritage*', 2012-2013

-Head of the Unit Roma 'Tor Vergata' in the project C.U.I.A. 2011 '*Technologies for the production of biofuels from plant biomasses*' - Italian Universities and Argentine Universities (Patagonia, Sur)

- Researcher participant in the project PNRA2009 of the Italian Ministry of University and Research, title '*Extremophilous cyanobacteria of sub-glacial Antarctic lakes*'

-Participant in the OU of the Engineering Department of University of Rome 'Tor Vergata' in the Italian project PRIN2009 of the Italian Ministry of University and Research - '*Utilization of last generation biofuels in diesel engines*' and Responsible of the biological aspects of the project

-Participant as contract researcher in the European project EU-EESD Programme (contract n° EVK4-CT2000-00028) – '*CATS-Cyanobacteria attack rocks: control and preventative strategies to avoid damage by cyanobacteria and associated microorganisms in Roman hypogean monuments*' 2001-2003

-Principal Investigator in the Young Researcher Grant 2000 of the University of Rome 'Tor Vergata', title: '*Biodiversity of Cyanobacteria in biofilms that develop in Roman Hypogea*'

Other activities

-Visiting professor at the University of Cergy-Pontoise (France), June 25-July 02

-Grant reviewer of proposal submitted to the ISF-Israel Science Foundation, 2018

-Invited co-organizer of the ECBSM2018, the European Conference on Biodeterioration of Stone Monuments, which will be held in Cergy-Pontoise (France), November 8-9, 2018.

-External reviewer of thesis submitted for the award of Degree of Doctor of Philosophy (Ph.D.) by the University of Roma Tre, 2018

-Grant reviewer of proposal application for the University of Padua 'Bando Giovani 2013-2015'

-In 2017 she has been invited to join the Editorial Board of Phycology International, a new open access scientific journal

-2013-2017 Editorial Board of 'Frontiers in Green and Environmental Chemistry'.

-Project Coordinator in a submission of a proposal at the European call Environment Programme (Including Climate Change) Call ID "FP7-ENV-2013-Two-stage" with the involvement of 16 Research Centres and 7 SME, and the pre-proposal successfully passed all thresholds, 2014

-Reviewer for scientific international journals such as *Plant Biosystems*, *Biofouling*, *International Biodeterioration and Biodegradation*, *Acta Physiologiae Plantarum*, *Arabian Journal for Science and Engineering*, *European Journal of Phycology*, *Environmental pollution*, *FEMS Microbiology Ecology*, *Journal of Applied Phycology*, *Journal of Industrial Microbiology & Biotechnology*, *Journal of Photochemistry and Photobiology*, *Marine Drugs*, *Protoplasma*, *Science of Total Environment*, *Applied and Environmental Microbiology*

-Invited speaker at the XIII International Symposium of University Professor. 7th -11th September 2016 Roma, Italia

- Invited speaker at the conference ‘Energy and Water towards a sustainable future’ organized by Lazio Innova at the ARA Pacis of Roma, 23/10/2015
- Invited speaker at the International Workshop on Conservation of Subterranean Cultural Heritage. March 25-27, 2014 Seville, Spain
- Invited speaker at 53rd Annual Conference of Association of Microbiologists of India (Ami) - International Conference On “Microbial World: Recent Innovations And Future Trends”. November 22-25, 2012 Bhubaneswar, Odisha (India)
- Member of the Scientific organizer committee of the ‘Annual meeting of the group of Cellular and molecular biology’ SBI, Roma, 15-17 June 2011
- 2005 participated as ‘local organiser’ of the European workshop “The PHOBIA Project”, Villa Mondragone, Monteporzio Catone (RM) 17 September 2005
- The publication Moro I., Rascio N., La Rocca N., Sciuto K., Albertano P., Bruno L., Andreoli C., 2010. Polyphasic characterization of a thermo-tolerant filamentous cyanobacterium isolated from the Euganean thermal muds (Padua, Italy). *European Journal of Phycology* 45:143 received the Award FoRST 2011
- An image from the publication 'L. Krakova, F. De Leo, L. Bruno, D. Pangallo and C. Urzì. 2015. Complex bacterial diversity in the white biofilms of St. Callistus Catacombs in Rome evidenced by different investigation strategies. *Environmental Microbiology* 17 (5):1738-1752' has been selected for the cover page of *Environmental Microbiology* Volume 17, May 2015

Society membership

Società Botanica Italiana - SBI

Gruppo di lavoro dell’Algologia

Gruppo di Lavoro della Biologia Molecolare e Cellulare

International Association for Cyanophyte Research-IAC

-Federation of European Phycological Societies- FEPS

-International Association of Applied Algology

-Member of ‘CoIRICH – Consortium of Italian Research Infrastructure for Cultural Heritage’

-Member of the centre ‘NAST: Nanoscience, Nanotechnology, Innovative Instrumentation’

Scientific productivity

She is the author of 60 publications in international journals or as book chapters, and 95 participations in national and international meetings.

Knowledge transfer: since 2009 to present she is the promoter of the University Spinoff AlgaRes srl and Member of the Scientific and Technical Board. As a member of the Spin off she participated to different projects:

-PI in the project ‘*SPECTRA - Sperimentazione Di Tecnologie Conservative Non Distruttive In Siti Archeologici Ipogei*’ Provincia di Roma 2009

-2009 ‘PROALGA – Production and commercialization of algal biomass’ Call Spinover of the Scientific Park of the University of Rome Tor Vergata

2011-2014 ‘ACQUASENSE’ Industria 2015, (MISE);

2015 PI in the action ‘Call4Innovator’ in the frame of the activity organized by Lazio Innova for EXPO 2015;