



Federica Mirabella

Date of birth:

Nationality:

Gender:

Skype: r

WORK EXPERIENCE

01/01/2021 – CURRENT – Catania

LAB VISITOR – UNIVERSITY OF CATANIA, DEPARTMENT OF BIOMEDICAL AND BIOTECHNOLOGICAL SCIENCES

I followed the laboratory activities, giving a contribution to write new research proposals.

01/11/2017 – 31/12/2020 – Catania, Italy

PHD STUDENT IN TRANSLATIONAL BIOMEDICINE – UNIVERSITY OF CATANIA, DEPARTMENT OF BIOMEDICAL AND BIOTECHNOLOGICAL SCIENCES

During the three-year PhD, I worked on two research projects based on miRNA profiling in body fluids of patients affected by Autism Spectrum Disorder, Tourette syndrome and Arnold-Chiari syndrome.

I applied many basic and advanced biomolecular techniques, along with the managing of the experimental plan, statistical analysis, graphical presentation and interpretation of results.

22/09/2020 – 21/12/2020 – Liège, Belgium

RESEARCH INTERNSHIP IN NEUROSCIENCE – UNIVERSITY OF LIÈGE, GIGA-STEM CELLS - MOLECULAR REGULATION OF NEUROGENESIS

I joined the Nguyen's lab and I was involved in two projects: the study of the contribution of mechanical forces to cortical interneuron behavior and migration during cortical development, by using a 3D scaffold model; the study of the role of CCP1 gene in the morphogenesis and interneuron migration in the context of human brain development and neural disorders, by using human brain organoids and assembloids.

06/02/2017 – 06/08/2017 – Dublin, Ireland

POST-GRADUATE RESEARCH INTERNSHIP IN BIOMEDICAL ENGINEERING – CONWAY INSTITUTE OF BIOMOLECULAR AND BIOMEDICAL SCIENCE- UCD CENTRE FOR BIOMEDICAL ENGINEERING

I joined the Raynaud's lab, as part of the biology team, dealing with additive manufacturing (3D printing), light sheet microscopy applications, advanced sample preparation, 3D CAD design and 3D printing models and files.

I was involved in a collaboration with members of Carl Zeiss Microscopy GmbH for a project aimed to establish protocols for light sheet microscopy applications.

The internship was established by an international internship agreement between the University of Catania and the University College Dublin (UCD), referred as the "Hosting Institution", from which I received an allowance for performing the work during the internship.

02/11/2015 – 23/09/2016 – Catania, Italy

RESEARCH INTERNSHIP IN MOLECULAR AND CELLULAR BIOLOGY – UNIVERSITY OF CATANIA, DEPARTMENT OF BIOMEDICAL AND BIOTECHNOLOGICAL SCIENCES

I joined the Purrello's lab, as an intern, learning and applying many basic and advanced biomolecular techniques.

I was involved in a project aimed to identify alterations of long non-coding and circular RNAs profiles in colorectal cancer cells after inhibition of ERK.

07/09/2015 – 06/11/2015 – Catania, Italy

RESEARCH INTERNSHIP IN MICROBIOLOGY – UNIVERSITY OF CATANIA, DEPARTMENT OF BIOMEDICAL AND BIOTECHNOLOGICAL SCIENCES



I learned the basic microbiology techniques related to the study of expression of virulence in *S. pyogenes*.

08/07/2013 – 13/08/2013 – Catania, Italy

RESEARCH INTERNSHIP IN MOLECULAR GENETICS – UNIVERSITY OF CATANIA, DEPARTMENT OF BIOLOGICAL, GEOLOGICAL AND ENVIRONMENTAL SCIENCE

I learned the basic molecular and genetic techniques, deepening the study of molecular and immunogenetic of *Pemphigus vulgaris* disease.

● EDUCATION AND TRAINING

21/04/2021 – Catania, Italy

PHD – University of Catania, Department of Clinical and Experimental Medicine

Field(s) of study

- Translational Biomedicine

MicroRNA profiling in body fluids of patients affected by ASD, TS and AC syndrome

09/01/2017 – Catania, Italy

TITLE OF PROFESSIONAL BIOLOGIST, SECTION A – University of Catania

29/09/2016 – Catania, Italy

MASTER'S DEGREE – University of Catania

Field(s) of study

- Cellular and Molecular Biology

110/110 cum laude | Alterations of Long Non-Coding and Circular RNAs profiles in Colorectal Cancer Cells

27/03/2014 – Catania, Italy

BACHELOR'S DEGREE – University of Catania

Field(s) of study

- Biological science

Patologia molecolare e immunogenetica del *Pemphigus vulgaris*

06/07/2009 – Catania, Italy

HIGH-SCHOOL DIPLOMA – Principe Umberto Di Savoia School

● PUBLICATIONS

The GAUGAA Motif Is Responsible for the Binding between circSMARCA5 and SRSF1 and Related Downstream Effects on Glioblastoma Multiforme Cell Migration and Angiogenic Potential

<https://doi.org/10.3390/ijms22041678> – 2021

Barbagallo D*[†], Caponnetto A*, Barbagallo C, Battaglia R, Mirabella F, Brex D, Stella M, Broggi G, Altieri R, Certo F, Caltabiano R, Barbagallo GMV, Anfuso CD, Lupo G, Ragusa M, Di Pietro C, Hansen TB, Purrello M. The GAUGAA Motif Is Responsible for the Binding between circSMARCA5 and SRSF1 and Related Downstream Effects on Glioblastoma Multiforme Cell Migration and Angiogenic Potential. *Int J Mol Sci*. * = Equal Contribution. [†]Corresponding Author.



Enrichment and correlation analysis of serum miRNAs in comorbidity between Arnold-Chiari and Tourette syndrome contribute to clarify their molecular bases

<https://doi.org/10.3389/fnmol.2020.608355> - 2021

Mirabella F*, Gulisano M, Capelli M, Lauretta G, Cirnigliaro M, Palmucci S, Stella M, Barbagallo D, Di Pietro C**, Purrello M**, Ragusa M***, Rizzo R**. Enrichment and correlation analysis of serum miRNAs in comorbidity between Arnold-Chiari and Tourette syndrome contribute to clarify their molecular bases. *Frontiers in Molecular Neuroscience*. * = First author. **Senior Author. ***Corresponding Author.

LINC00483 has a potential tumor-suppressor role in Colorectal Cancer through multiple molecular axes

<https://doi.org/10.3389/fonc.2020.614455> - 2021

Brex D*, Barbagallo C, Mirabella F, Caponnetto A, Battaglia R, Barbagallo D, Caltabiano R, Memeo L, Di Pietro C, Purrello M, Ragusa M***. LINC00483 has a potential tumor-suppressor role in Colorectal Cancer through multiple molecular axes. *Frontiers Oncology*. * = First author. ***Corresponding Author.

Potential Associations Among Alteration of Salivary miRNAs, Saliva Microbiome Structure, and Cognitive Impairments in Autistic Children

<https://doi.org/10.3390/ijms21176203> - 2020

Ragusa M*, Santagati M*, Mirabella F*, Lauretta G, Cirnigliaro M, Brex D, Barbagallo C, Domini CN, Gulisano M, Barone R, Trovato L, Oliveri S, Mongelli G, Spitale A, Barbagallo D, Di Pietro C**, Stefani S**, Rizzo R**, Purrello M***. Potential Associations Among Alteration of Salivary miRNAs, Saliva Microbiome Structure, and Cognitive Impairments in Autistic Children. *International Journal of Molecular Sciences*. * = Equal Contribution. **Senior Author. ***Senior Corresponding Author.

CircSMARCA5 Regulates VEGFA mRNA Splicing and Angiogenesis in Glioblastoma Multiforme Through the Binding of SRSF1

<https://doi.org/10.3390/cancers11020194> - 2019

Barbagallo D*, Caponnetto A, Brex D, Mirabella F, Barbagallo C, Lauretta G, Morrone A, Certo F, Broggi G, Caltabiano R, Barbagallo GM, Spina-Purrello V, Ragusa M**, Di Pietro C**, Hansen TB***, Purrello M***. CircSMARCA5 Regulates VEGFA mRNA Splicing and Angiogenesis in Glioblastoma Multiforme Through the Binding of SRSF1. *Cancers*. * = First author. **=Senior Author. ***= Senior Corresponding Author.

Upregulated microRNAs in membranous glomerulonephropathy are associated with significant downregulation of IL6 and MYC mRNAs

<https://doi.org/10.1002/jcp.27851> - 2018

Barbagallo C*, Passanisi R*, Mirabella F, Cirnigliaro M, Costanzo A, Lauretta G, Barbagallo D, Bianchi C, Pagni F, Castorina S, Granata A**, Di Pietro C**, Ragusa M**, Malatino LS**, Purrello M**. Upregulated microRNAs in membranous glomerulonephropathy are associated with significant downregulation of IL6 and MYC mRNAs. *J Cell Physiol*. * = Equal Contribution. ** = Senior Corresponding Author.

● **CONFERENCES AND SEMINARS**

19/04/2021 - Online

Mechanisms and mechanics of tube morphogenesis

29/03/2021 - Online

The evolutionary origin of synapses and neurons

29/03/2021 - Online

L'innovazione e il ruolo delle Biotecnologie nella medicina translazionale: l'esempio dello sviluppo del vaccino contro Covid-19



24/03/2021 – Online

Disease modeling using Induced Pluripotent Stem Cells (iPSC)-derived brain organoids

22/03/2021 – Online

The mRNA epitranscriptome and how it regulates gene expression

04/10/2019 – 05/10/2019 – Milano (Italy)

XIX AIBG National Conference

Speaker of the project with the title "Alterations of circulating miRNAs and microbiome structure in saliva of autistic children are associated with cognitive impairments: potential cross-talking and diagnostic applications"

<https://congressi.laan.it/frontend/web/index.php?r=evento%2Fview&id=9>

01/02/2019 – Torre Biologica, Catania (Italy)

3rd Etnean Occupational Medicine Workshop - Tumore alla mammella e lavoro

24/11/2018 – 25/11/2018 – Castiglione di Sicilia, Catania (Italy)

Retreat - Biometec meeting

Speaker of the project with the title "Potential Associations Among Alteration of Salivary miRNAs, Saliva Microbiome Structure, and Cognitive Impairments in Autistic Children"

12/04/2018 – 14/04/2018 – Troina, Enna (Italy)

13th Troina Meeting on Genetics of Neurodevelopmental Disorders

09/05/2017 – 10/05/2017 – Royal College of Surgeons in Ireland (RCSI), Dublin (Ireland)

Applied Biomedical Imaging Module Workshops and training sessions focusing on advanced microscopy and flow cytometry techniques

● PRESENTATIONS

04/10/2019 – 05/10/2019

XIX AIBG National Conference

Speaker of the project with the title "Alterations of circulating miRNAs and microbiome structure in saliva of autistic children are associated with cognitive impairments: potential cross-talking and diagnostic applications"

http://users.unimi.it/triplet/AIBG_ABSTRACT_ORAL/6.pdf

24/11/2018 – 25/11/2018

Retreat - Biometec meeting

Speaker of the project with the title " Potential Associations Among Alteration of Salivary miRNAs, Saliva Microbiome Structure, and Cognitive Impairments in Autistic Children"

20/06/2017

Meeting with the Company Supervisor of Carl Zeiss Microscopy GmbH

Presentation of the technical results about the 3D printing project titled "Adaptive sample preparation toolkit using additive manufacturing"



● JOB-RELATED SKILLS

Job-related skills

- Use of many biomolecular and bicellular techniques as sample collection and processing, RNA and DNA extraction, end-point and Real-time PCR, protein analysis through gel electrophoresis, NanoString nCounter system assays, TaqMan microRNA reverse transcription assays, Single TaqMan assays, preparation of chemical solutions, organ clearing, advanced samples preparation for Light Sheet microscopy, mouse brain dissection, genotyping, MGE isolation and dissociation, cell culture, 3D scaffold preparation, immunocytochemistry and immunohistochemistry
- Use of lab equipment such as pipettes, centrifuges, thermocyclers, chemical and biological hoods, machineries for electrophoresis, spectrophotometer, vacuum desiccator. Also, use of biomedical imaging instruments as advanced microscopy and flow cytometry techniques, Light Sheet Microscopy applications and the technology of 3D printing
- Ability to examine the results: analysis of RNA expression data, analysis of imaging data, computational analysis, statistical analyses of experimental data, graphical presentation
- Scientific writing and oral communication
- Use of 3D printing models

● LANGUAGE SKILLS

Mother tongue(s): ITALIAN

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B1	B2
SPANISH	B2	B2	B2	B1	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● DIGITAL SKILLS

Microsoft Office: Word, Excel, Access, Power Point, Outlook. | Google Suite (Drive, Sheets, Docs) | Ultimaker cura 3D printing | Video Conferencing (Zoom Skype Google Hangout) | Sketch-Up | Adobe paket (Illustrator, Photoshop, Premiere) | MeV 4.9 software | nSolver | SPSS Statistical Tool | GraphPad PRISM | miRNet 2.0 | metaboanalyst 4.0 | Fiji-ImageJ | miRTarBase | Reference Management software [Zotero, EndNote, Mendeley]

● ORGANISATIONAL SKILLS

Organisational skills

- Good organisational skills gained by working both in a team and alone with high sense of responsibility, delivering data on time, able to foresee and plan upcoming issues
- Good organisational skills gained by working in collaboration with external individuals and groups on the same projects



● **COMMUNICATION AND INTERPERSONAL SKILLS**

Communication and interpersonal skills

- Good oral communication skills gained by working with many people from different countries and workplaces and by oral expositions of job projects in public contexts
- Good non-verbal communication skills gained by writing and editing scientific articles

● **DRIVING LICENCE**

Driving Licence: B

● **RECOMMENDATIONS**

References are available on request

Autocertificazione - Dichiarazione sostitutiva di certificazione (art. 46 e 47 D.P.R.28 dicembre 2000 n. 445)

La sottoscritta FEDERICA MIRABELLA, c.f. _____, nata a _____,
residente a _____, consapevole che chiunque rilascia dichiarazioni mendaci è punito ai
sensi del codice penale e delle leggi speciali in materia, ai sensi e per gli effetti dell'art. 46 D.P.R. n. 445/2000,

DICHIARA

che quanto riportato nel proprio curriculum vitae, redatto secondo il formato europeo, corrisponde a verità.

Catania, 21/04/2021