

# Miriam Toffoli

 Home : Italy

**Gender:** Female **Nationality:** Italian

## WORK EXPERIENCE

***IRCCS Ospedale Infantile Burlo Garofolo | department of Obstetrics and Gynecology***

**City:** Trieste | **Country:** Italy

[ 25/05/2020 – 30/10/2022 ] **Junior Research Fellow**

The research activities were conducted at the Laboratory of Reproduction and Cancer Immunology under the supervision of Prof. Bulla at the Department of Life Sciences, University of Trieste. The research focused on several lines of investigation:

- Assessment of the role of the complement system in pathological pregnancies characterized by pre-eclampsia and in pregnancies resulting from Assisted Reproductive Techniques (ART), with the aim of identifying early predictive biomarkers to enhance the diagnostic algorithm for pre-eclampsia.
- Investigation of the role of the complement system in the pathogenesis of endometriosis, with a particular emphasis on the proteins C1q, C3, and MBL.
- Assessment of complement deficiency in children with recurrent infections referred to our laboratory from other medical centers.
- Evaluation of the interactions of the SARS-CoV-2 virus with its main entry receptors at the placental site, and analysis of the immunological response to SARS-CoV-2 vaccines in breastfeeding women.

Additionally, I supervised students conducting their Master's degree thesis in the laboratory.

### **Technical Skills Acquired:**

- Proficiency in cell culture techniques, including isolation of endothelial and epithelial cells from various human tissue biopsies, culture of primary cells and cell lines, co-culture assays, proliferation assays, adhesion assays, viability tests, and apoptosis tests.
- Experience with ELISA assays, Western blotting, Immunofluorescence, Flow Cytometry, and Immunohistochemistry (including tissue embedding and microtome sectioning for slide preparation).
- Proficient in molecular biology techniques such as RNA extraction from cells and tissues, RNA electrophoresis, RT-PCR, qPCR.
- Experience with antibody purification using protein G columns.

***University of Trieste | Laboratory of Reproduction and Cancer's Immunology, Department of Life Science***

[ 07/01/2022 – 24/10/2022 ] **Internship**

Supervisors: Prof. Roberta Bulla

Co-supervisor: Dr. Chiara Agostinis

Thesis project: Evaluation of C1q and anti-C1q autoantibodies in ART pregnancies for pre-eclampsia prediction

Techniques used:

- ELISA assay ( commercial and home-made)
- Immunohistochemistry

- gene expression analysis ( phenol/chloroform RNA extraction, quantification using Nanodrop, quality assessment via RNA electrophoresis, RT-PCR, qPCR)
- Cell culture techniques ( adhesion assay, phagocytosis assay)

***University of Trieste | Laboratory of Reproduction and Cancer's Immunology, Department of Life Science***

[ 04/03/2019 – 20/11/2019 ] **Internship**

Supervisors: Prof. Roberta Bulla

Co-supervisor: Dr. Chiara Agostinis, Dr. Andrea Balduit

Thesis project: " Study of the role of the extracellular matrix in the response to chemotherapy drugs in Malignant Pleural Mesothelioma".

Technical skills acquired:

- Cell Culture techniques: isolation of cancer cells from a biopsy sample of pleural mesothelioma, cell lines culture, killing assay
- ELISA assay
- Immunofluorescence analysis
- Flow cytometry analysis
- Immunohistochemistry (IHC)
- Gene expression analysis: RNA extraction, RT-PCR, qPCR

***University Hospital Giuliano Isontina of Trieste (ASU GI)***

**City:** Trieste | **Country:** Italy

[ 03/2017 – 02/2019 ] **Internship**

Curricular Internship in the laboratory medicine unit of the University hospital ASU GI (Trieste):

- Anatomic pathology: histopathology and cytopathology
- Medical laboratory: clinical microbiology, clinical chemistry, hematology, blood bank, molecular diagnostics, and genetic laboratory ( at IRCCS Ospedale Infantile Burlo Garofolo)

**City:** Trieste | **Country:** Italy

[ 28/09/2018 – 30/09/2018 ] **Volunteerism**

I volunteered at the scientific research festival "Trieste Next" in Trieste aimed at science outreach and communication, engaging with visitors to promote understanding of scientific concepts and discoveries.

***ASSOCIAZIONE OPERA DI SOCCORSO DELL'ORDINE DI S. GIOVANNI***

**City:** Sacile (PN) | **Country:** Italy

[ 11/2014 – 12/2016 ] **Volunteerism**

Main activities:

- Assistance in public events for first AID ( festivals, sports competitions, emergency simulations);
- Support to the teaching of first AID in schools and companies.
- Help in the secretarial activity of the association.

## EDUCATION AND TRAINING

[ 01/11/2022 – Current ] **PhD in Reproduction and Developmental Sciences (ongoing)**

***University of Trieste***

Research period abroad: Max Planck Institute (Dresden), Gerri's Lab

[ 10/2020 – 24/10/2022 ]

## **Master's Degree in MEDICAL AND DIAGNOSTIC BIOTECHNOLOGIES**

### ***University of Trieste***

**City:** Trieste | **Country:** Italy | | **Final grade:** 110/110 cum laude | **Thesis:** Evaluation of C1q and anti-C1q autoantibodies in ART pregnancies for pre-eclampsia prediction

Supervisors: Prof. Roberta Bulla

Co-supervisor: Dr. Chiara Agostinis, Dr. Gabriella Zito

[ 01/10/2016 – 21/11/2019 ]

## **Bachelor's Degree in BIOMEDICAL LAB TECHNICIAN**

### ***University of Trieste***

**City:** Trieste | **Country:** Italy | | **Final grade:** 110/110 cum laude and mention to merit | **Thesis:** " Study of the role of the extracellular matrix in response to chemotherapy drugs in Malignant Pleural Mesothelioma"

Supervisors: Prof. Roberta Bulla

Co-supervisor: Dr. Chiara Agostinis, Dr. Andrea Balduit

[ 09/2011 – 06/2016 ]

## **Graduation from Liceo Classico**

### ***Liceo Classico Leopardi***

**City:** Pordenone | **Country:** Italy |

Valutazione 98/100

## **LANGUAGE SKILLS**

**Mother tongue(s):** Italian

**Other language(s):**

**English**

**LISTENING** B2 **READING** C1 **WRITING** B2

**SPOKEN PRODUCTION** B2 **SPOKEN INTERACTION** B2

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

## **SKILLS**

Good knowledges in GraphPad Prism software | Flow Cytometry FloJo | - good command of Microsoft Office tools (Word, Excel, Power Point and Outlook).

## **PUBLICATIONS**

[ 2021 ]

### **The Inflammatory Feed-Forward Loop Triggered by the Complement Component C3 as a Potential Target in Endometriosis**

**Reference:** Frontiers in Immunology

Chiara Agostinis, Sonia Zorzet, Andrea Balduit, Gabriella Zito, Alessandro Mangogna, Paolo Macor, Federico Romano, **Miriam Toffoli**, Beatrice Belmonte, Gaia Morello, Anna Martorana, Violetta Borelli, Giuseppe Ricci, Uday Kishore and Roberta Bulla

[ 2022 ]

### **[SARS-CoV-2 modulates virus receptor expression in placenta and induces pro-inflammatory and apoptotic milieu for adverse pregnancy](#)**

**Reference:** Frontiers in Immunology

Chiara Agostinis, **Miriam Toffoli**, Mariagiulia Spazzapan, Andrea Balduit, Gabriella Zito, Alessandro Mangogna, Luisa Zupin, Tiziana Salviato, Serena Maiocchi, Federico Romano, Sergio Crovella, Francesco Fontana, Luca Braga, Marco Confalonieri, Giuseppe Ricci, Uday Kishore, Roberta Bulla

- [ 2022 ] [A longitudinal study of C1q and anti-C1q autoantibodies in homologous and heterologous pregnancies for predicting pre-eclampsia](#)
- Reference:** Frontiers in Immunology
- Chiara Agostinis, Gabriella Zito, **Miriam Toffoli**, Isabel Peterlunger, Livia Simoni, Andrea Balduit, Erica Curtolo, Alessandro Mangogna, Beatrice Belmonte, Davide Vacca, Federico Romano, Tamara Stampalija, Tiziana Salviato, Federica Defendi, Nicoletta Di Simone, Uday Kishore, Giuseppe Ricci and Roberta Bulla*

- [ 2023 ] [Anti-Spike Antibodies Present in the Milk of SARS-CoV-2 Vaccinated Mothers Are Complement-Activating](#)
- Reference:** International journal of Molecular science
- Chiara Agostinis<sup>†</sup>, **Miriam Toffoli**<sup>†</sup>, Andrea Balduit, Alessandro Mangogna, Hadida Yasmin, Chiara Ragazzon, Silvia Pegoraro, Giuseppina Campisciano, Guglielmo Stabile, Gabriella Zito, Uday Kishore, Manola Comar, Federica Scrimin, Roberta Bulla, Giuseppe Ricci*

<sup>†</sup>These authors contributed equally to this work.

- [ 2023 ] [A likely association between low mannan-binding lectin level and brain fog onset in long COVID patients](#)
- Reference:** Frontiers in Immunology
- Roberta Bulla, Lucrezia Rossi, Giovanni Furlanis, Chiara Agostinis, **Miriam Toffoli**, Andrea Balduit, Alessandro Mangogna, Marco Liccari, Giorgia Morosini, Uday Kishore, Paolo Manganotti*

- [ 2025 ] **Endothelial cell supplementation promotes xenograft revascularization during short-term ovarian tissue transplantation**
- Reference:** Bioactive materials
- doi: 10.1016/j.bioadv.2025.03.021
- Spazzapan M., Pegoraro S., Vuerich R., Zito G., Balduit A., Longo E., Pascolo L., **Toffoli M.**, Meshni O., Mangogna A., Ros G., Buononno F., Romano F., Lombardelli L., Papa G., Piccinini M.P., Zacchigna S., Agostinis C., Bulla R., Ricci G.*

- [ 2025 ] **A possible association between low MBL/lectin pathway functionality and microbiota dysbiosis in endometriosis patients.**
- Reference:** Life Sciences
- Toffoli M.**, Campisciano G., Santin A., Pegoraro S., Zito G., Spedicati B., Balduit A., Romano F., Di Lorenzo G., Mangogna A., Teatini P., Navone S., Terranova R., Deganello A., Zanetta N., Croci F., Kishore U., Ricci G., Bulla R., Agostinis C.

## CONFERENCES AND SEMINARS

- [ 21/03/2023 – 22/03/2023 ] **Attendance at the "Attune User Meeting 2023 "** Amsterdam
- [ 23/05/2022 – 26/05/2022 ] **Attendance to the SIICA XIII national congress**
- [ 28/02/2022 – 04/03/2022 ] **Partecipazione at SIICA Virtual School of Immunology 2022**
- [ 08/02/2021 – 11/02/2021 ] **Attendance at the online event " Complement UK Training Course and Symposium"**

- [ 16/10/2019 – 18/10/2019 ]    **Attendance to the meeting"Meet in Italy for Life Sciences 2019 - 6th edition"**  
Trieste
- [ 01/07/2024 – 02/07/2024 ]    **The LokeCenter Annual Meeting 2024**    Cambridge
- [ 08/10/2024 – 11/10/2024 ]    **European Congress of the European Society for Reproductive Immunology (ESRI) 2024**  
Leiden  
Travel grand awarded
- [ 02/07/2025 – 05/07/2025 ]    **European Congress of the European Society for Reproductive Immunology (ESRI) 2025**  
Trieste  
Selected oral presentation