

# Giovanni Sorrentino

**ASSOCIATE PROFESSOR OF HUMAN HISTOLOGY AND EMBRYOLOGY –  
University of Trieste**

**GROUP LEADER OF ADVANCED DISEASE MODELS LABORATORY – International  
Centre for Genetic Engineering and Biotechnology**

## Personal Information

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- **Full Name:** Giovanni Sorrentino
- **Date and Place of Birth:** 14<sup>th</sup> December 1983, Ragusa (RG), Italy
- **Academic Affiliation:** Associate Professor (SSD BIOS/13A – Human Histology and Embryology), Department of Medical, Surgical and Health Sciences – University of Trieste
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- **Google Scholar:** <https://scholar.google.it/citations?hl=it&user=GcH9wC8AAAAJ>

## Research Keywords

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Cancer; Metabolism; Mechanotransduction; Multipotent stem cells; Bioengineering; High-content screening; Drug repositioning; Tumor suppressor p53; YAP/Hippo pathway; Mevalonate pathway; Synthetic hydrogels; Liver and Intestinal organoids; Bile acids; hiPSC; Chronic liver diseases.

## Research Experience

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### ASSOCIATE PROFESSOR | UNIVERSITY OF TRIESTE

From 2025

- SSD BIOS/13A – Human Histology and Embryology | Department of Medical, Surgical and Health Sciences – University of Trieste

### GROUP LEADER | ICGEB

From 2023

- Head of the Laboratory of Advanced Disease Models (currently composed by 4 Postdocs, 2 Graduate fellows, 1 PhD student, 1 Master's thesis student).

### ASSISTANT PROFESSOR | UNIVERSITY OF TRIESTE

2022 – 2025

- RTD-B (SSD BIOS/13A – Human Histology and Embryology) | Department of Medical, Surgical and Health Sciences – University of Trieste

**ASSISTANT PROFESSOR | UNIVERSITY OF TRIESTE** **2021 – 2022**

- RTD-A (SSD BIOS/10A – Cellular and Experimental Biology) and Head of the Molecular Liver Pathophysiology Unit | Department of Life Sciences – University of Trieste

**POSTDOCTORAL FELLOW | UNIVERSITY OF TRIESTE** **2021**

- Assegnista di Ricerca | Department of Life Sciences – University of Trieste

**FEBS LONG-TERM POSTDOCTORAL FELLOW | EPFL LAUSANNE** **2017 – 2020**

- Postdoctoral fellow | Laboratory of Metabolic Signaling, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland. Supervisor: Prof. Kristina Schoonjans.

**POSTDOCTORAL FELLOW | LNCIB** **2017**

- Postdoctoral fellow | *National Laboratory CIB, Trieste, Italy*. Supervisor: Prof. Giannino Del Sal

**FIRC POSTDOCTORAL FELLOW | LNCIB** **2014 – 2016**

- Italian Foundation for Cancer Research (FIRC) postdoctoral fellow | *National Laboratory CIB, Trieste, Italy*. Supervisor: Prof. Giannino Del Sal

**PHD STUDENT | UNIVERSITY OF TRIESTE** **2011 – 2014**

- PhD student in Molecular Biomedicine | Department of Life Sciences – University of Trieste. Supervisor: Prof. Giannino Del Sal

## **Education**

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**Academic Qualification (*Abilitazione Scientifica Nazionale*)** **Call 2018-2020**

Italian academic qualification as Associate Professor in:  
Histology; Biochemistry; Molecular Biology; Experimental Biology; Pathology.

**University of Trieste, PhD in Molecular Biomedicine** **2014**

Supervisor: Prof. Giannino Del Sal

Thesis Title: Metabolic control of YAP/TAZ by the mevalonate pathway

**University of Ferrara, MSc in Medical-Pharmaceutical Biotechnology** **2008**

Supervisor: Prof. Rosario Rizzuto

Final mark: *magna cum laude*

**University of Ferrara, BSc in Biotechnology** **2005**

Supervisor: Prof. Rosario Rizzuto

Final mark: *magna cum laude*

## Grants

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- **Worldwide Cancer Research 2023 (Co-Principal Investigator)** 2024 – 2027  
“Role of Pin1 and nuclear mechanics in the evolution of NASH to HCC”  
(€ 180.000 over 3 years).
- **AIRC Start Up Grant 2020 (Principal Investigator)** 2021 – 2026  
“Role of tissue mechanics in the progression from NASH to liver cancer”  
(€ 1.000.000 over 5 years).
- **Telethon Research Project 2020 (Principal Investigator)** 2021 – 2024  
“Modeling Wolman disease using genetically engineered human liver organoids”  
(€ 230.000 over 3 years).
- **PRIN 2022 (Coordinator, Principal Investigator)** 2023 – 2025  
“Revealing the contribution of nuclear mechanics in non-alcoholic fatty liver disease progression” (€ 80.000 over 2 year).
- **PRIN-PNRR 2022 (Principal Investigator of Unit)** 2023 – 2025  
“Epitranscriptomic Control of PIDDosome Activation in Steatohepatitis”  
(€ 112.000 over 2 year).
- **UNITS Microgrant (Principal Investigator)** 2023 – 2024  
“Organoidi epatici per lo studio del colangiocarcinoma” (€ 5.000 over 1 year).
- **PNRR NextGenerationEU (Participant)** 2022 – 2026  
Project CN0000041-National Center for Gene Therapy and Drugs based on RNA Technology.

## Awards and Fellowships

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- Best oral presentation award 2019  
“A bioinspired synthetic niche enables culture of liver organoids suitable for clinical application”; “12<sup>th</sup> LIMNA Symposium”, Lausanne.
- Selected by the Council for the Lindau Nobel Laureate Meetings 2018  
to participate at the “68th Lindau Nobel Laureate Meeting”.
- **Recipient of a three years FEBS long-term Fellowship** 2017
- **Chiara D’Onofrio Junior Award** 2014  
from Italian Society for Biophysics and Molecular Biology.
- **Recipient of a two years FIRC postdoctoral fellowship** 2014  
Fondazione Italiana per la Ricerca sul Cancro Fellowship “Anita Sambo”.
- Best poster award 2013  
Karolinska Institutet Summer School on Targeted Cancer Therapies, Stockholm.

## Conference Presentation and Seminars

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- Exploring liver plasticity in advanced organotypic cultures. Oral presentation delivered at “CIBIO – University of Trento”, Trento 2023 (Invited speaker).
- Mechano-modulatory niches for liver organoid derivation. Oral presentation delivered at “Erasmus week: Regulation of Gene Expression”, Trieste 2022 (Invited speaker).

- Liver organoids for regenerative medicine and disease modeling. Oral presentation delivered at “IREC” institute in Brussels, Belgium 2022 (Invited speaker).
- Liver organoids for regenerative medicine and disease modeling. Oral presentation delivered at “Fondazione Italiana Fegato”, Trieste 2021 (Invited speaker).
- New avenues in disease modeling and regenerative medicine of the enterohepatic system. Oral presentation delivered at ICGEB, Trieste 2021 (Invited speaker).
- Utilizzo di organoidi come sistemi modello alternativi all'uso di animali da esperimento. Oral presentation delivered at “Corso formazione e training del personale coinvolto nelle attività di sperimentazione animale” organized by the “Organismo preposto al benessere animale” of the University of Trieste, Trieste 2021 (Invited speaker).
- On the road to regeneration: new routes and tools for stem cell therapies in the enterohepatic system. Oral presentation delivered at “University of Trieste”, Trieste 2019 (Invited speaker).
- A bioinspired synthetic niche enables culture of liver organoids suitable for clinical application. Oral presentation delivered at “44<sup>th</sup> FEBS congress”, Krakow 2019.
- A bioinspired synthetic niche enables culture of liver organoids suitable for clinical application. Oral presentation delivered at “12<sup>th</sup> LIMNA Symposium”, Lausanne 2019.

## Reviewer Activity

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- **Reviewer for:** Cell Death and Differentiation; Cell Death and Disease; Nature Communications; Cellular Physiology and Biochemistry; Development; Biochimie; Seminars in Cell and Developmental Biology.
- **Grant evaluator for:** Worldwide cancer research; PRIN; Austrian Science Found (FWF); UNIPD Stars.

## Patents

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- **Italian patent application** filed on April 3, 2024, no. 102024000007321, titled “*METHOD FOR THE GENERATION OF STEM CELLS IN CULTURED LIVER TISSUE*”, and subsequent **European patent application** no. 25167947.8 filed on April 2, 2025, titled “*METHOD FOR GENERATION OF STEM CELLS IN CULTURED LIVER TISSUE*”, claiming priority from the Italian application. **Inventors:** Giovanni Sorrentino and Beatrice Anfuso.

## Membership

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- Member of the “Collegio dei Docenti di Istologia ed Embriologia”.
- Member of the “Società Italiana di Anatomia e Istologia” (SIAI).
- Member of the “Associazione Italiana di Biologia Cellulare e Differenziamento” (ABCD).
- Member of the “Italian Society for Biophysics and Molecular Biology (SIBBM)”.
- Member of the “European Association for the study of the Liver (EASL)”.
- Member of the “Associazione Italiana per lo Studio del Fegato (AISL)”.

## Teaching activity

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### ➤ List of teaching responsibilities:

#### Academic year: 2025/2026 (assigned)

- ISTOLOGIA (BIO/17) – Corso di Laurea in Ostetricia (12h).
- ISTOLOGIA (BIO/17) – Corsi di Laurea in Igiene Dentale e Dietistica (20h).
- RIGENERAZIONE TISSUTALE (BIO/17) – Corso di Laurea Magistrale in Genomica Funzionale (24h).
- ISTOLOGIA ED EMBRIOLOGIA (BIO/17) – Corsi di laurea magistrale in Medicina e Chirurgia e Odontoiatria e Protesi Dentaria (36h).
- STRUTTURA MICROSCOPICA DEGLI ORGANI (BIO/17) – Corsi di laurea magistrale in Medicina e Chirurgia e Odontoiatria e Protesi Dentaria (12,5h).

#### Academic year: 2024/2025

- ISTOLOGIA (BIO/17) – Corso di Laurea in Dietistica (10h).
- ISTOLOGIA (BIO/17) – Corso di Laurea in Tecniche di Laboratorio Biomedico (10h).
- RIGENERAZIONE TISSUTALE (BIO/17) – Corso di Laurea Magistrale in Genomica Funzionale (24h).
- ISTOLOGIA ED EMBRIOLOGIA (BIO/17) – Corsi di laurea magistrale in Medicina e Chirurgia e Odontoiatria e Protesi Dentaria (48h).
- STRUTTURA MICROSCOPICA DEGLI ORGANI (BIO/17) – Corsi di laurea magistrale in Medicina e Chirurgia e Odontoiatria e Protesi Dentaria (12h).

#### Academic year: 2023/2024

- ISTOLOGIA (BIO/17) – Corso di Laurea in Tecniche della Riabilitazione Psichiatrica (10h).
- RIGENERAZIONE TISSUTALE (BIO/17) – Corso di Laurea Magistrale in Genomica Funzionale (24h).
- ISTOLOGIA ED EMBRIOLOGIA (BIO/17) – Corsi di laurea magistrale in Medicina e Chirurgia e Odontoiatria e Protesi Dentaria (36h).
- STRUTTURA MICROSCOPICA DEGLI ORGANI (BIO/17) – Corsi di laurea magistrale in Medicina e Chirurgia e Odontoiatria e Protesi Dentaria (12h).

#### Academic year: 2022/2023

- BIOTECNOLOGIE CELLULARI (BIO/13) – Corso di Laurea in Scienze e Tecnologie Biologiche (48h).
- ISTOLOGIA (BIO/17) – Corso di Laurea in Tecniche della Riabilitazione Psichiatrica (10h).
- ISTOLOGIA (BIO/17) – Corso di Laurea in Tecniche di Laboratorio Biomedico (10h).
- ISTOLOGIA ED EMBRIOLOGIA (BIO/17) – Corsi di laurea magistrale in Medicina e Chirurgia e Odontoiatria e Protesi Dentaria (36h).

#### Academic year: 2021/2022

- LABORATORIO DI BIOLOGIA CELLULARE (BIO/13) – Corso di Laurea in Scienze e Tecnologie Biologiche (48h).

#### Academic year: 2020/2021

- METODOLOGIE PER LO STUDIO DEL PROTEOMA (BIO/10) – Corso di Laurea Magistrale in Genomica Funzionale (72h).

### ➤ Examination committees

- For each of the courses taught, I also took part in the corresponding examination committees (written and/or oral exams).
- I regularly participated as a member of the Master's degree examination boards (thesis defense committees) in Functional Genomics and Biotechnology.

## Supervision of Undergraduate, Graduate and Postdoctoral Research

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- Faculty Board Member, PhD Program in Personalized Medicine and Innovative Therapies, University of Trieste.
- Supervisor of 10 Master's theses.
- Supervisor of 1 PhD student (ongoing): Doctoral program in Personalised Medicine and Innovative Therapies (UNITS) and Co-Supervisor of 2 PhD students: Doctoral program in Molecular Biomedicine (UNITS).
- Scientific Mentor of 4 postdoctoral fellows.
- Supervisor of 2 graduate students (Assegnisti di Ricerca).
- Served as a member of the evaluation committee for a PhD thesis defense in Biomolecular Sciences, University of Trento.

## Third mission and Public Engagement

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Thanks to the funding of research projects by institutions such as **AIRC** (Italian Association for Cancer Research) and **Telethon**, which place great importance on scientific outreach, I have been actively involved in several public engagement initiatives promoted by their press offices. These activities have included interviews and participation in events aimed at disseminating scientific knowledge to the general public. For example:

- Interview for *Fondamentale*, the official magazine of AIRC;
- Interview with the newspaper *Il Piccolo* on the research conducted in my laboratory;
- Interview for *RAI TGR Friuli Venezia Giulia* regarding the progress and clinical relevance of my research;
- TV interview on *Telequattro*, as a guest on the program *Trieste in Diretta*;
- Participation in the AIRC-sponsored public event "*Brunch con il cuore*", dedicated to raising awareness on cancer research and healthy lifestyles.

I remain actively engaged in public outreach initiatives, regularly contributing to science communication activities and supporting events aimed at fostering dialogue between researchers and society.

## Clinical or Translational Activities

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I am actively involved in a clinical observational cohort study (ambispective design), in collaboration with the Azienda Sanitaria Universitaria Giuliano Isontina (ASUGI), focused on the integration of molecular, genetic, microbiological, radiological, clinical, and histological data obtained from biological samples and from in vitro and ex vivo models derived from autologous patient tissues. The study aims to support the development of Precision and Personalized Medicine strategies for patients with diseases of the digestive system, including both oncologic and benign/metabolic conditions. My contribution focuses in particular on the histological and tissue modeling aspects of the project. Prot.N. 0033969 / P / GEN/ ARCS.

## Publications

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### Last/Corresponding author:

- **Microenvironmental control of the ductular reaction: balancing repair and disease progression (2025).**  
**Sorrentino G.\***  
(*Cell Death and Disease*). PMID: 40180915. \*Corresponding author.

- **Sterol Regulatory Element Binding Protein 1 couples mechanical cues and lipid metabolism (2019).**  
Bertolio R., Napoletano F., Mano M., Maurer-Stroh S., Fantuz M., Bicciato S., **Sorrentino G.\*** and Del Sal G\*.  
(*Nature Communications*). PMID: 30902980. \*Corresponding authors.

### **First author:**

- **Mechano-modulatory synthetic niches for liver organoid derivation (2020).**  
**Sorrentino G.\***, Rezakhani S.\*, Yildiz E., Nuciforo S., Heim M.H., Lutolf M.P.§ and Schoonjans K.§.  
(*Nature Communications*). PMID: 32651372.  
\* equal contribution, §corresponding authors.
- **Bile Acids Signal via TGR5 to Activate Intestinal Stem Cells and Epithelial Regeneration (2020).**  
**Sorrentino G.**, Perino A., Yildiz E., El Alam G., Sleiman M.B. and Schoonjans K.  
(*Gastroenterology*). PMID: 32485177.
- **The stiff RhoAd from mevalonate to mutant p53 (2018).**  
**Sorrentino G.**, Mantovani F. and Del Sal G.  
(*Cell Death and Differentiation*). PMID: 29511341.
- **Mechanical cues control mutant p53 stability through a mevalonate–RhoA axis (2018).**  
Ingallina E.\*, **Sorrentino G.\***, Bertolio R, Lisek K., Zannini A., Azzolin L., Severino L.U., Scaini D., Mano M., Mantovani F., Rosato A., Bicciato S., Piccolo S. and Del Sal G.  
(*Nature Cell Biology*). PMID: 29255172. \*equal contribution
- **Glucocorticoid Receptor signalling activates YAP in breast cancer (2017).**  
**Sorrentino G.\***, Ruggeri N.\*, Zannini A., Ingallina E., Mano M., Bicciato S. and Del Sal G.  
(*Nature Communications*). PMID: 28102225. \*equal contribution
- **YAP enhances the pro-proliferative transcriptional activity of mutant p53 proteins (2015).**  
Di Agostino S.\*, **Sorrentino G.\***, Ingallina E., Valenti F., Ferraiuolo M., Bicciato S., Piazza S., Strano S., Del Sal G.§ and Blandino G.§  
(*EMBO reports*). PMID: 26691213. \*equal contribution
- **MDP, a database linking drug response data to genomic information, identifies dasatinib and statins as a combinatorial strategy to inhibit YAP/TAZ in cancer cells (2015).**  
Taccioli C.\*, **Sorrentino G.\***, Zannini A., Caroli J., Beneventano D., Anderlucci L., Lolli M., Bicciato S§. and Del Sal G§.  
(*Oncotarget*). PMID: 26513174. \*equal contribution
- **p53 orchestrates calcium signaling in vivo (2015).**  
**Sorrentino G.**, Comel A., Del Sal G.  
(*Cell Cycle*). PMID: 25880696.
- **Regulation of mitochondrial apoptosis by Pin1 in cancer and neurodegeneration (2014).**  
**Sorrentino, G.\***, Comel, A.\*, Mantovani, F., and Del Sal, G.  
(*Mitochondrion*). PMID: 25132079. \*equal contribution.
- **The cytoplasmic side of p53's oncosuppressive activities (2014).**

Comel, A.\*, **Sorrentino, G.\***, Capaci, V., and Del Sal, G.  
(*FEBS Letters*). PMID: 24747877. \*equal contribution.

- **Metabolic control of YAP and TAZ by the mevalonate pathway (2014).**  
**Sorrentino, G.**, Ruggeri, N., Specchia, V., Cordenonsi, M., Mano, M., Dupont, S., Piazza, S., Rosato A., Piccolo S. and Del Sal G.  
(*Nature Cell Biology*). PMID: 24658687.
- **The prolyl-isomerase Pin1 activates the mitochondrial death program of p53 (2013).**  
**Sorrentino, G.**, Mioni, M., Giorgi, C., Ruggeri, N., Pinton, P., Moll, U., Mantovani, F., and Del Sal, G.  
(*Cell Death and Differentiation*). PMID: 22935610.

### **Other publications:**

- **Hepatic lipid overload triggers biliary epithelial cell activation via E2Fs (2023).**  
Ece Yildiz, Gaby El Alam, Alessia Perino, Antoine Jalil, Pierre-Damien Denechaud, Katharina Huber, Lluís Fajas, Johan Auwerx, **Giovanni Sorrentino**, Kristina Schoonjans.  
(*Elife*). PMID: 36876915.
- **L-cell differentiation is induced by bile acids through GPBAR1 and paracrine GLP-1 and serotonin signaling (2020).**  
Mari Lilith Lund, **Giovanni Sorrentino**, Kristoffer Lihme Egerod, Chantal Kroone, Brynjulf Mortensen, Filip Krag Knop, Frank Reimann, Fiona M Gribble, Daniel J Drucker, Eelco JP de Koning, Kristina Schoonjans, Fredrik Bäckhed, Thue W Schwartz, Natalia Petersen.  
(*Oncogene*). PMID: 28628115.
- **GDA, a web-based tool for Genomics and Drugs integrated analysis (2018).**  
Caroli J., **Sorrentino G.**, Forcato M., Del Sal G., Bicciato S.  
(*Nucleic Acids Research*). PMID: 29800349.
- **Stearoyl-CoA-desaturase 1 regulates lung cancer stemness via stabilization and nuclear localization of YAP/TAZ (2017).**  
A Noto, C De Vitis, ME Pisanu, G Roscilli, Giulia Ricci, A Catizone, **G Sorrentino**, Giuseppina Chianese, Orazio Tagliatela-Scafati, D Triscioglio, D Del Bufalo, M Di Martile, A Di Napoli, L Ruco, S Costantini, Z Jakopin, A Budillon, G Melino, G Del Sal, G Ciliberto, R Mancini.  
(*Diabetes*). PMID: 32041793.
- **p53 at the endoplasmic reticulum regulates apoptosis in a Ca<sup>2+</sup>-dependent manner (2015).**  
Carlotta Giorgi, Massimo Bonora, **Giovanni Sorrentino**, Sonia Missiroli, Federica Poletti, Jan M Suski, Fabian Galindo Ramirez, Rosario Rizzuto, Francesco Di Virgilio, Ester Zito, Pier Paolo Pandolfi, Mariusz R Wieckowski, Fabio Mammano, Giannino Del Sal, Paolo Pinton.  
(*PNAS*). PMID: 25624484.
- **Prolyl-isomerase Pin1 controls normal and cancer stem cells of the breast (2014).**  
Alessandra Rustighi, Alessandro Zannini, Luca Tiberi, Roberta Sommaggio, Silvano Piazza, **Giovanni Sorrentino**, Simona Nuzzo, Antonella Tuscano, Vincenzo Eterno, Federica Benvenuti, Libero Santarpia, Iannis Aifantis, Antonio Rosato, Silvio Bicciato, Alberto Zambelli, Giannino Del Sal.  
(*EMBO Molecular Medicine*). PMID: 24357640.

- **Translocation of signalling proteins to the plasma membrane revealed by a new bioluminescent procedure (2011).**  
Carlotta Giorgi, Anna Romagnoli, Chiara Agnoletto, Leda Bergamelli, **Giovanni Sorrentino**, Marisa Brini, Tullio Pozzan, Jacopo Meldolesi, Paolo Pinton, Rosario Rizzuto.

*I hereby declare that the information provided in this CV is accurate and true to the best of my knowledge.*

Trieste, 14 October 2025

Giovanni Sorrentino