Salvatore Barbagallo

London, United Kingdom
+44 (0)7475200048 | barbagallo1@hotmail.it
linkedin.com/in/salvatore-barbagallo | barbavegeta.github.io

Professional Summary

Experienced Biomedical Scientist transitioning into bioinformatics with over 7 years' background in clinical laboratories. Experience in data analysis, programming (Python, Bash, R, SQL), NGS data analysis, molecular biology, and laboratory information systems and have a background in stem cell and genetic research. Possess multiple certifications in data analysis and bioinformatics tools, combining laboratory expertise with computational skills to bridge wet lab techniques and data analysis. Experience analysing biological data and implementing improved laboratory workflows.

Skills

- **Programming**: Python, Bash, R, SQL
- **Bioinformatics tools**: Biopython, Bioconductor, Bowtie/Bowtie2, Burrows-Wheeler Aligner (BWA), SAMtools, BEDtools, VCFtools, FastQC, Cufflinks/Cuffdiff, TopHat, STAR, HISAT2, DESeq2
- **Data Analysis**: NGS Data Analysis, Flow Cytometry Analysis, Statistics for Health Research, Data Visualisation (Tableau)
- **Laboratory Techniques**: Flow Cytometry (MACSQuant, BD FACS Canto/DIVA), NGS Library Preparation (Illumina), Whole Genome Amplification
- **Instrumentation**: Illumina, MiSeq/NextSeq, MACSQuant Flow Cytometer, SPT Labtech Mosquito HV/Dragonfly Discovery Liquid Handlers
- **Software & LIMS**: Illumina Control Software, SPT Labtech Software, BD FACS DIVA, WinPath, QPulse, EPIC, iPassport, Citrix, Microsoft Office Suite

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Work Experience

Band 6 Specialist Biomedical Scientist
Stem Cell Laboratory, University College London Hospitals, September 2021 – present

- Analysed, processed, and cryopreserved peripheral blood stem cells, bone marrow collections, Donor Lymphocyte Infusion (DLI) and CD34+ enrichment bags to support transplant procedures, ensuring sample integrity.
- Ensured high-quality sterility in Grade A clean room environments through rigorous protocols and agar plate assessments.
- Interpreted and analysed CD3+ & CD34+ cell populations using MACSQuant flow cytometer, delivering critical data for patient treatments.
- Supported 11 active clinical trials, processing diverse Advanced Therapy Medicinal Products (ATMPs) including CAR-T cells (Yescarta, Novartis), antibody, and genetic treatments.
- Evaluated Burst-Forming Unit-Erythroid (BFU-E) and Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF) colonies for stem cell transplant suitability.
- Analysed, interpreted, and submitted NEQAS samples, consistently maintaining high laboratory performance standards.
- Applied computer science skills to improve stock management systems, data training assessments, and overall laboratory workflow efficiency, reducing inventory errors by 30% and 10 hours weekly job.

Laboratory Scientist
CooperGenomics, London, July 2019 – September 2021

- Processed diverse embryo samples (D6 trophectoderm, D5 blastomere, Cheek Brush Kits) for

Preimplantation Genetic Testing (PGT) for Aneuploidies (PGT-A), Structural Rearrangements (PGT-SR), and Single Gene Mutations (PGT-M).
- Maintained and calibrated STP Labtech's Mosquito HV and Dragonfly Discovery liquid handlers.
- Conducted Whole Genome Amplification (PicoPlex kit) and DNA gel electrophoresis.
- Analysed NGS run metrics, processing 96 samples per run with manual library preparation and 192 samples per run with automated library preparation, ensuring strict adherence to quality standards.
- Generated detailed and accurate patient reports from NGS data, +500 per week.
- Developed, implemented, and reviewed Standard Operating Procedures (SOPs).

Biomedical laboratory assistant - Cytology
Leicester Royal Infirmary, Leicester, December 2018 – June 2019

- Managed sample reception and prepared specimens for Papanicolaou staining.
- Maintained laboratory reagents, applied coverslips, and ensured sample integrity for analysis.

Education

Master of Science: Bioinformatics
Atlantic Technological University (Remote), September 2025 - present

Master of Science: Cell and Gene Therapy
University College London, September 2021- September 2023
Dissertation: Expansion and Preservation of Haematopoietic Potential in Human Amniotic Fluid Stem Cells for Therapeutic Applications

Bachelor: Biomedical Science
Siciliae Studium Generale - University of Catania, September 2014 – October 2017
Dissertation: Cytotoxicity assays using SIRC, ARPE-19 and HRPE cells

Certificates

- **Google:** Google Data Analytics Certificate; Google Advanced Data Analytics; Google IT Automation with Python; Google Project Management
- **Amazon Web Services:** AWS Cloud Practitioner Essentials
- **freeCodeCamp**: Data Analysis with Python; Relational Databases; Scientific Computing with Python
- **Le Wagon**: Data Visualization with Tableau
- **Coursera**: Access Bioinformatics Databases with Biopython
- **Johns Hopkins University**: Genomic Data Science Specialization
- **Wellcome Connecting Science Learning and Training**: Bioinformatics for Biologists: An Introduction Linux, Bash Scripting, and R; Bioinformatics for Biologists: Analysing and Interpreting Genomics Datasets
- **DE<code>LIFE**: Genomes, Networks and Pathways; Data Science and Machine Learning with Python

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Languages
Italian (native), English (Fluent), Portuguese (Fluent), Spanish (Intermediate)