Sabah Sardar

Bioengineer with a strong background in life sciences and multidisciplinary projects involving mammalian cell culture (2D and 3D), biomaterials, and metabolomics. Demonstrated ability to lead projects, communicate scientific concepts, and collaborate across international research teams. Interested in translational biology, paediatric disease, and working with patient samples.

EDUCATION

PhD in Bioengineering 2020 - 2024
University of Glasgow
Labs of Prof Massimo Vassalli, Prof Manuel Salmeron-Sanchez & Prof Matthew Dalby

- Thesis: Cellular phenotype characterisation in different variants of visceral myopathy.
- Worked with patient derived samples, adhering to ethical guidelines for the use and handling of patient samples.
- **Techniques: Primary cell culture, Flow cytometry, 3D cell culture, Migration assays, Confocal microscopy, AFM, Metabolomics, Immunostaining, Traction force microscopy, Western blot, Actin live imaging, and Material fabrication & characterisation.**

MRes Biomedical Sciences (Cancer Studies), Distinction 2018 - 2019
University of Glasgow
Labs of Prof Joanne Edwards & Dr Maria Jackson

- Completed successful research projects focusing on lung cancer and colorectal cancer, where science writing, problem solving, and project management skills were demonstrated.
- Achieved excellent A grade marks for the written report and oral examinations. Additionally, qualified for specialisation in cancer studies.
- **Techniques: Immunohistochemistry, Primer design, Nested PCR, Gel electrophoresis, and Bisulphite conversion.**

BSc (Honours) Biochemistry, 2.1 2014 - 2018
University of Glasgow

- Studied a diverse range of subjects including neuroscience, immunology, genetics, and molecular biology.
- Developed decision making skills and the ability to work both independently and within a team.
- Honours project: investigating cardiac troponin T as ethnicity based biomarker in the lab of Prof Paul Welsh at BHF.
- **Techniques: Electrochemiluminescence immunoassay, patient blood samples, patient database handling**

WORK EXPERIENCE

Postdoctoral Research Assistant Apr 2024 – Oct 2024
Advanced Research Centre, Labs of Prof Massimo Vassalli & Prof Nikolaj Gadegaard.

- Investigating the use of PDMS micropillar arrays in drug screening to revert gastrointestinal disease phenotype.
- Led the drafting and editing of manuscripts.

Visiting Researcher March 2023
ETH Zurich, Labs of Prof Tomaso Zambelli.

- Gained hands on experience measuring cell adhesion and stiffness using Fluidic Force Microscopy on gastrointestinal disease cells.
- Solved problems by carrying out analysis of situations or data and implementing appropriate steps to overcome issues.

Doctoral Research Project 2020-2024
University of Glasgow, Prof Vassalli, Prof Salmeron-Sanchez & Prof Dalby

- Investigated the use of physical properties of cells, such as traction forces exerted and cell migration, as biomarkers for visceral myopathy. Studied cell metabolomics to better understand disease pathology. Identification of appropriate assays which can be used in a drug screening capacity were then identified.

Science Communicator Mar 2020 – Oct 2021
Glasgow Science Centre

- Developed and communicated complex scientific concepts to diverse audiences, ensuring content was both accurate and engaging.

TEACHING & ENGAGEMENT

- Master's student supervisor (All students received A grade in projects).
- Graduate Teaching Assistant
- CeMi Lab Seminar Host and Organiser 2020-2021
- Co-organiser for Visceral Myopathy PPIE event August 2023.
- Nanoengineering for Mechanobiology international conference co-organiser 2022 (https://n4m.mechanobiology.eu/).

SKILLS

Writing and Editing

- Extensive experience in developing and refining scientific content, including manuscripts, posters, blog posts, and slide decks.
- Excelled in writing course delivered by Nature scientific journal editor.
- Strong writing skills; including grammatical, editorial, and proofreading skills.

Project Management

- Skilled at managing multiple projects, meeting tight deadlines while maintaining high standards.
- Coordinated effectively with collaborators at different institutions, including University of Leeds (UK) and University of Bologna (Italy).

Oral Communication

- Presented scientific findings in an accessible manner to diverse audience consisting of research scientists, stakeholders, clinicians, and patients.
- Strong oral communication skills and ability to communicate complex data/concepts clearly and concisely through presenting in international conferences, lab group meetings, and seminars.
- Presented oral presentations and posters at 5 conferences.

PUBLICATIONS

Published

I. Viti et al., 2023, Biomaterials Advances, DOI: 10.1016/j.bioadv.2023.213355

Under review:

II. Mechanical mapping of living cells using photothermal off-resonance Atomic Force Microscopy. 2024, JoVE (2nd author)

Manuscript in progress:

III. The mechano-chemical axis of visceral myopathy (1st author)
IV. Review: The mechanogenetic component of visceral myopathy (1st author)
V. Characterisation of novel Piezo1 mutation causing visceral myopathy (2nd author)

Funding

FEBS Youth Travel Fund Grant (€400)

UofG School of Engineering Travel Fund (£550)

Conferences

Oral talk: International Forum on Visceral Myopathy. Italy, 2024
Oral talk: ECMage/BLAST conference. UK, 2024
Oral talk: University of Glasgow CDT stakeholder day. UK, 2023
Oral talk: University of Birmingham CDT student day. UK, 2022
Flash talk and Poster: FEBS Advanced Lecture Course. Spain, 2022
Attendee: European forum on Visceral Myopathy. Italy, 2022
Poster: CUREAM Summit. Ireland, 2021

ADDITIONAL SKILLS & INTERESTS

Software: LaTeX, GraphPad Prism, Flow Jo, Image J, Cell Profiler, QIAGEN Ingenuity Pathway Analysis (IPA), MetaboAnalyst, Microsoft Office.
Languages: English (Native), Urdu (Proficient), Punjabi (Proficient)
Hobbies: Yoga, tennis, reading fiction, and gardening.