

EMILY MAY ARMSTRONG

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PhD student specialising in epigenetic regulation of tissue specific gene expression under abiotic stress in plants. Dedicated, collaborative, ambitious, with a proven track record in high-impact research output and public engagement.

EDUCATION

University of Glasgow

- **PhD** in Medical, Veterinary, and Life Sciences (Submission September 2020)
- **MSc (Res)** at Institute of Molecular, Cell, and Systems Biology (2015-2016)

University of Essex

- **BSc (Honours)**, Genetics (Upper first class) (2012-2015)
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AWARDS & SCHOLARSHIPS

- **Impact in 60 seconds:** 1st prize for science communication video
 - **Plant Cell Environment 40th Anniversary Symposium:** 1st place poster prize
 - **The Biochemist Journal:** 1st prize for visual science communication
 - **Society of Experimental Botany:** Travel grant for international conference
 - **Studentship:** MVLS Doctoral Training Program (PhD)
 - **Scholarship:** Chelmsford Education Fund for MSc (Res)
 - **Dean's list honours:** Top 5% of grades for 2nd and 3rd year in BSc.
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RESEARCH EXPERIENCE

PhD project:

- Topic: Identifying epigenetically regulated tissue specific transcription factors in *Arabidopsis*
- Supervisors: Prof. Anna Amtmann, Prof. Mike Blatt, Dr. Miriam Gifford

Master's by research project:

- Topic: Histone demethylases as regulators of root system architecture in *Arabidopsis*
- Supervisors: Prof. Anna Amtmann, Prof. Mike Blatt

Bachelor's project and dissertation

- Topic: Heat shock transcription factors protecting against reactive oxygen species
 - Supervisors: Prof. Phil Mullineaux
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LABORATORY SKILLS

- **Plant culture:** sterile tissue culture, sterile seedling plate culture, hydroponics, soil growth for seed, soil growth for experimental purposes, liquid culture, *Agrobacterium* mediated floral dipping for transformation
- **Molecular Biology:** Plasmid purification, RNA and DNA extraction, cDNA synthesis, RT-qPCR, RT-PCR, ChIP-qPCR, Western blotting, protein purification, classical and gateway cloning, site-directed mutagenesis, electrophoresis, electrophoretic mobility shift assays, chromatin immunoprecipitation, protoplast generation, *E. coli* culture, DAPI stain.
- **Specialist equipment:** Fluorescence activated cell sorting, flame spectrophotometry, root system architecture phenotyping, confocal microscopy and fluorescence quantitation, EdU staining, Isolation of Nuclei TAgged in specific Cell Types (INTACT).
- **Sequencing:** RNA preparation for sequencing, ChIP-DNA preparation for sequencing, Cufflinks analysis package, data analysis.
- **Software:** Graphpad Prism, Image J, Photoshop, Wordpress, Microsoft Office, SigmaPlot.

PRESENTATIONS

Armstrong, EM. (2019, September). ‘Identifying epigenetically regulated tissue specific transcription factors’ Plant Cell Environment 40th Anniversary Symposium, Glasgow.

Armstrong, EM. (2019, July). Tissue specific epigenetic regulation of salt stress responses in plants. Oral presentation, European Early Career Researchers Congress, Nottingham.

Armstrong, EM. (2019, April). Using fluorescence activated cell sorting for selective RNA recovery. Oral presentation at University of Warwick Internal Seminar series, Coventry.

Armstrong, EM. (2019, March). Epigenetically regulated tissue specific transcription. Poster presentation at Institute of Molecular, Cell, and Systems Biology Annual Symposium, Glasgow.

Armstrong, EM. (2018, Oct). Tissue specific transcription factors controlling salt tolerance. Oral presentation at Institute of Molecular, Cell, and Systems Biology Seminar Series, Glasgow.

Armstrong, EM. (2018, June). Epigenetic regulation of salt responses. Invited oral presentation at both Gordon Research Conference and Seminar, New Hampshire, United States.

Armstrong, EM. (2018, June). Epigenetic regulation of salt responses. Invited poster presentation at both Gordon Research Conference and Seminar, New Hampshire, United States.

Armstrong, EM. (Ongoing). Lab-group research updates, troubleshooting, idea generation. Glasgow

PUBLICATIONS

Armstrong, EM, et al. (July, 2020). “Cell-type specific epigenetic de-repression of the transcription factor ZAT6 establishes a spatially delimited transcriptional network in Arabidopsis roots”. Manuscript in preparation for submission at Nature Plants.

Armstrong, EM (2019, April). [Massive new study confirms higher BMI linked with serious increase in multiple diseases in UK](#) published in The Glasgow Insight into Science and Technology.

Armstrong, EM (2018, March). “Plant-Based Biomaterials” published in The Biochemist Blog.

Shazad, Z. Armstrong, EM et al. (2018, March). “EZ-Root-Vis: A Software Pipeline for the Rapid Analysis and Visual Reconstruction of Root System Architecture”. Published in Plant Physiology.

Armstrong, EM (August 2017). “Climate Change, Brexit, and Food Supply: The ultimate trilemma?” Published in the Glasgow Insight into Science and Technology

TEACHING EXPERIENCE

Laboratory Demonstrator

- Responsible for 16 undergraduate second year students during Extreme Biology lab sessions, guided students through exercises and demonstrated specific skills

Graded paper marker

- Responsible for grading second year student’s final year exam papers, ensured marking scheme properly fulfilled, and answering student’s questions.

BSc and MSc Mentor

- Point of contact in the lab for BSc and MSc students during their final project. Taught students all required skills, improved experimental design, troubleshoot, supported with prospective applications and presentations. All students achieved 2:1 or above, merit or above.

VOLUNTEER WORK AND LEADERSHIP

Head of Social Media and Communications at Glasgow Insight into Science and Tech

- Improved reach by 30%, engagement by 23%, follower count by 5% in first two months. Managed deputy head to improve post releases.
- Wrote press releases, attended press conferences, organised speakers, coordinated conference attendance as press, promoted associated events, curated grids and newsfeeds.
- Developed skills in Buffer, Issuu, Hootsuite, VideoScribe, DaVinci video software.

Social Media Support at Institute Molecular, Cell, Systems Biology

- Spearheaded initiative to improve research institute’s social media
- Lead for branding redesign and outreach events promotion
- Representing the institute at University wide social-media roundtable events.