

# Elliot Johnson-Hall

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## RESEARCH INTERESTS

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My research interests include musculoskeletal tissue engineering, with a focus on osteochondral tissues and osteoarthritis. I would like to explore the mechanobiology of these tissues and the pathogenesis of osteoarthritis. I am fascinated by interfaces between tissues with vastly different properties and wish to investigate novel tissue engineering approaches to recapitulate these properties *in vitro*. Additionally, I have a keen interest in reducing the use of animals within research and am intrigued by the possibility of developing patient-derived tissue-engineered *in vitro* osteoarthritis models. My current research focuses on the use of bio-inspired hydrogels to model articular cartilage.

## EDUCATION

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Sep 2023 - Aug 2024 **University of Bristol - MRes Health Sciences Research**

**Grade:** Pending

**Dissertation:** Engineering gradient biomaterials as articular cartilage model

**Supervisors:** Dr James Armstrong & Dr Camila Bussola Tovani

Sep 2020 - May 2023 **University of Edinburgh - BSc (Hons.) Anatomy & Development**

**Grade:** First Class

**Dissertation:** Multi-material additive manufacturing to recapitulate the osteotendinous enthesis: an exploration of tensile properties and cytocompatibility.

**Supervisor:** Dr Jennifer Z Paxton

## SHORT COURSES

University of Bristol - TCES Net Summer School: Patterning Cells with Sound

University College London - Introduction to Statistics & Research Methods

University of Edinburgh - Developing Your Data Skills

## AWARDS & PRIZES

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### SCHOLARSHIPS

**Bristol Master's Scholarship** - One of 50 talented UK postgraduate students from underrepresented backgrounds.

**Access Edinburgh Scholarship** - To support access to higher education for underrepresented students.

### PRIZES

**Most distinguished scholar in Clinical Biochemistry & Endocrinology 3** - For the highest grade in this undergraduate module.

## CONFERENCES

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### ORAL PRESENTATIONS

1. **Johnson-Hall E**, Paxton JZ. Making Connections: multi-material additive manufacturing to replicate anatomical interfaces. Anatomical Society Summer Meeting 2023.

### ATTENDED

2. Early Careers Anatomists Conference 2023
3. GW4 Innovations in Brain Tissue Engineering 2023

## RESEARCH EXPERIENCE

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12-week undergraduate research project involving mammalian 2D cell culture, additive manufacturing, fluorescence microscopy, cytotoxicity assays, and tensile strength testing. This culminated in a written dissertation and oral presentation, for which I received a first-class grade. In addition, I presented my work at the summer meeting of the Anatomical Society.

My MRes project involves modelling articular cartilage using high-density collagen and glycosaminoglycan gradient hydrogels. Core techniques include: histology, SEM, biochemical assays, and hydrogel synthesis.

## OUTREACH & EDUCATION

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I am passionate about widening access to science within higher education. I engaged the public with anatomy and forensic anthropology in outreach events at the National Museum of Scotland with the University of Edinburgh. As an advocate for increasing the inclusivity of science, I was heavily involved in a leadership role with the founding of a student STEM outreach society called Hands-On. I oversaw the growth of the society to 60 members and delivered multiple outreach events in local schools, reaching hundreds of children. I am also a STEM ambassador actively looking for volunteering roles in my area.

## PROFESSIONAL MEMBERSHIPS

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- Early Career Member - The Anatomical Society
- Member - TERMIS
- Member - UK Society for Biomaterials
- Member - Tissue and Cell Engineering Society
- Member - British Society for Matrix Biology
- Associate Member - Royal Society of Biology