

# Alex Hubert, PhD

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## EDUCATION

### Physicist - PhD

#### University of Warwick

August 2014 – July 2019

Coventry, UK

- By using computer control of a JEOL 2100 electron microscope and *felix*, an in-house Bloch wave simulation software, I showed it was possible to obtain highly accurate and precise structural refinement measurements using the Digital-Large Angle Convergent Beam Electron Diffraction technique

### MPHYS Physics

#### University of Kent

September 2010 – July 2014

Canterbury, UK

## EXPERIENCE

### Lived Experience Advisory Panel member

#### McPin Foundation, University of Sheffield

January 2025 – Present

Remote

- As part of a 14-person panel, I am working with and advising researchers, clinicians and experts on the three-year **Target Trials in Mental Health** projects. Using my lived experience, I am helping with study design and interpretation of results, among other responsibilities.

### Public Reviewer

#### NIHR and BMJ

July 2025 - Present

Remote

- I review grant applications for the **NIHR** and academic papers for the **BMJ**. I focus on public and patient involvement issues, such as training, inclusion, and funding.

### Lived Experience Advisor

#### McPin Foundation

October 2024 - Present

Remote

- In a freelance capacity, I have advised researchers from different institutions for several funding applications and a research paper using my lived experience.

### Volunteer researcher

#### CPRE

February 2024 - May 2024

Remote

- Researching affordable housing in rural areas

## ACHIEVEMENTS AND QUALIFICATIONS



### 3MT

University wide three minute thesis finalist 2019



### Front cover

My paper "Structural refinement from 'digital' large angle convergent beam electron diffraction patterns" made the front cover of **Ultramicroscopy magazine - volume 198**.



### HPC autumn academy

2 week (full time) introductory course in high performance computing (parallel programming) using C



### HPC MPAGS

4th year module (10 weeks) at the University of Warwick in High performance computing as part of the midlands alliance PhD courses



### PCG summer school

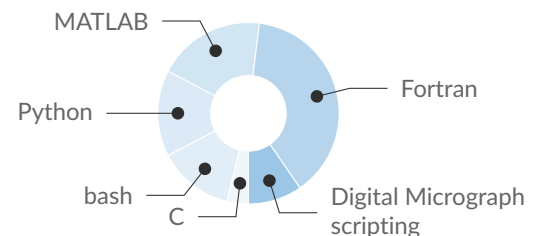
1 week (full time) course on physical crystallography



### ECB level 1

2-day cricket coaching course

## PROGRAMMING LANGUAGES



*\*I also have experience using Parallel programming implementations (MPI/OpenMP)*

## SOFTWARE



### felix

Bloch wave simulation software



### CrystalViewer\_VR

Creates models of crystal structures in virtual reality (unfinished)

## EXPERIENCE (CONT.)

### Public Speaker

University of Warwick

📅 March 2019

📍 Coventry, UK

- Wrote, organised and performed an independent talk on my experiences of counselling
- Working with the university, I promoted the talk using posters and a trailer. I advertised on public displays around campus and through social media.

### Wellbeing and Peer Support officer (Postgraduate Student Staff Liason Committee)

University of Warwick

📅 March 2018 – May 2018

📍 Coventry, UK

- Set up the postgraduate wellbeing peer support group for physics PhD students. The first of its kind to be set up within a Warwick University department (to my knowledge)

### Social Secretary - Mind Aware Society

University of Warwick

📅 May 2017 – September 2017

📍 Coventry, UK

### Undergraduate Laboratory Demonstrator

University of Warwick

📅 October 2014 – March 2017

📍 Coventry

### Women's Head Coach and Second Team Captain (cricket club)

University of Kent

📅 July 2013 - May 2014

📍 Canterbury, UK

- I helped drive membership up to the highest it had been since I started my undergraduate. I was also influential in helping to stabilise the women's team after it nearly collapsed due to previously declining membership.
- Achieved through: stalls on campus, engaging with first year students at freshers fayre - selling them the idea of cricket, using an energetic/uplifting coaching style and a willingness to give time to each member for any concerns.
- I led a team effectively through a shared philosophy. I created a trustworthy, passionate and close-knit group.

## FINANCIAL AWARDS

### Cr Barber Trust - Institute of physics travel grant

- awarded £300 for travel expenses to attend the **IMC19** conference in Sydney

### Research Student Conference Fund - Institute of physics travel grant

- awarded £300 by the electron microscopy and analysis group for travel expenses to attend the **IMC19** conference in Sydney

### ARCHER

- Contributor for the project: Bloch-Wave Simulations for digital large angle convergent beam electron diffraction, number: e370. For the ARCHER supercomputer. Award: £20,798.90

## FURTHER SKILLS

Public Speaking

Acting\*

Improv

Article Writing

LaTeX

modelling

mathematics

algorithm creation

meditation

operate transmission electron microscope

Driving licence (14+ years)

\*classes taken at **Teatro theatre school**

## CLUBS AND SOCIETIES

Chearsley cricket club

University of Kent cricket club

University of Warwick mind aware society

Birmingham city Korfbal club

University of Warwick Korfbal club

## ACTIVITIES AND INTERESTS

Cricket

Korfbal

Football

Tennis

Squash

Origami

Reading

Psychology

Philosophy

Dancing

## SKILLS

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### Research in science

I know how to find and parse relevant research papers. I can decipher trustworthy and non-trustworthy sources. I am able to analyse, interpret and visualise complex datasets, and communicate them simply and effectively.

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### From experimental data to computer science

During my PhD, I personally collected experimental data and helped transcribe mathematical theory from research papers into algorithms, then fully working code. I ran the resulting refinement software on a supercomputer and analysed the results. This process culminated in my first-authored research paper.

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### Writing

I have written many articles about mental health, including several high-profile anonymous pieces (sources available on request)

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### Soft Skills

Through counselling, acting and improv, I have developed an emotional skill-set which has enhanced the majority of my technical abilities and interpersonal communication.

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## PUBLICATIONS

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### Thesis

- A.J.M. Hubert (2019). *Structural refinement of single crystals using digital-large angle convergent beam electron diffraction patterns*. University of Warwick.
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### Journal Articles

- R. Beanland, ..., A.J.M. Hubert, K. Evans et al. (2021). "A new electron diffraction approach for structure refinement applied to Ca<sub>3</sub>Mn<sub>2</sub>O<sub>7</sub>". In: *Acta Crystallographica Section A: Foundations and Advances* 77.3, pp. 196–207.
- A.J.M. Hubert, R. Römer, R. Beanland (2019). "Structure refinement from 'digital' large angle convergent beam electron diffraction patterns". In: *Ultramicroscopy* 198, pp. 1–9.
- J.L. Hart, ..., A.J.M. Hubert, ..., R. Beanland et al. (2016). "Electron-beam-induced ferroelectric domain behavior in the transmission electron microscope: Toward deterministic domain patterning". In: *Physical Review B* 94.17, p. 174104.

## ORAL PRESENTATIONS

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### Measuring crystal structures using computer controlled electron diffraction

 June 2019

Warwick Three Minute Thesis final presentation

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### Seeking Counsel

 February & March 2018

For Warwick Mind Aware Society and Independent

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### Isotropic Debye-Waller factor measurements for Cu, SrTiO<sub>3</sub> and GaAs using digital electron diffraction

 March 2018

Conference presentation given at the annual British Crystallographic Spring Meeting

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### Probing the shape of atoms with digital electron diffraction

 March 2018

Scientific presentation given at the Warwick postgraduate seminar series

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### Meditation: The key to life's game of snakes and ladders

 December 2017 & February 2018

Personal presentation given at the Warwick postgraduate seminar series and undergraduate physics cafe series

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### Simulating pretty pictures: A Bloch wave solution

 January 2015

Scientific presentation given at the Warwick postgraduate seminar series

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## ARTICLES

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Training lived experience experts in complex statistical methods

[McPin Foundation blog](#)

📅 July 2025

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How I found space to meditate in academia

[Science Magazine](#)

📅 May 2023

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In search of more time

[PhD Life blog - University of Warwick](#)

📅 Jan 2020

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Counselling as an education

[Mental Movement magazine](#)

📅 February 2020

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Scientific discovery under Nazi Rule – The curious case of Walther Kossel and Gottfried Möllenstedt

[Science Comma blog - University of Kent](#)

📅 Dec 2019

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## POSTER PRESENTATIONS

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### Conference Proceedings

- A.J.M. Hubert, R. Beanland, R. Römer (2018). “Isotropic Debye-Waller factor measurements for Cu, SrTiO<sub>3</sub> and GaAs using digital electron diffraction”. In: International Convention Centre, Sydney: 19th International Microscopy Congress.
- A.J.M. Hubert, R. Römer, R. Beanland (2018). “Isotropic Debye-Waller factor measurements for Cu, SrTiO<sub>3</sub> and GaAs using digital electron diffraction”. In: Abingdon, UK: Physical crystallography group summer school.
- A.J.M. Hubert, K. Evans et al. (2015). “Felix: open source Bloch wave simulation and refinement software”. In: Manchester, UK: Microscience Microscopy Congress.