

# CHARLES GARNET COX

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## EMPLOYMENT

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Recently I have undertaken writing work for Pearson Publishing and spoken at events for The Training Partnership.

### **The University of Southampton, UK**

*Sept. 2013 - Jan. 2017*

Tutorial Assistant

### **Totton College, UK sixth form college (16-18)**

*Aug. 2012 - Aug. 2013*

Lecturer of Mathematics

## EDUCATION

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### **The University of Southampton, UK**

- PhD in Pure Mathematics, Supervisor: Dr Armando Martino *Sept. 2013 - Sept. 2016*
- PGCE in Mathematics, 11-18 age range *Sept. 2011 - July 2012*
- MMath in Mathematics *Sept. 2007 - July 2011*

## RESEARCH

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During my 3 years of PhD I prepared 3 papers. Since then I have worked on a collaboration with my PhD supervisor and Dr Laura Ciobanu (currently based at Heriot-Watt, Edinburgh). We are investigating a question I posed in my 3rd paper about degree of commutativity for infinite groups.

### **Papers on the ArXiv**

- *The degree of commutativity and lamplighter groups*, currently with Int. Journal of Alg. and Comp.;
- *A note on the  $R_\infty$  property for groups  $\text{FAlt}(X) \leq G \leq \text{Sym}(X)$* , currently with Comm. in Algebra;
- *Twisted conjugacy in Houghton's groups*, currently with the Journal of Algebra.

## TEACHING EXPERIENCE

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### **At the University of Southampton, I:**

- assisted with around three times the usual number of mathematics tutorials. This ranged across most of the available 1st, 2nd, and 3rd year pure mathematics courses and included weekly marking;
- assisted Engineers of all years at a weekly workshop, assisted with the Engineering Foundation Year weekly workshops, and assisted with weekly tutorials for 1st year Computer Science students;
- was the postgraduate helper in the new mathematics student centre, answering questions from students of all years for 3 to 5 hours per week (from October 2014 until January 2017);
- delivered one lecture and one seminar for a 3rd year mathematics course.

### **At Totton College, I:**

- attended and contributed to weekly departmental and faculty meetings;
- maintained a database containing academic and pastoral information on the students I taught;
- taught A-level, GCSE, and pre-GCSE courses. I uploaded some of my resources to the TES website, and one has been downloaded over 40,000 times.

### **During my PGCE, I:**

- taught 11-16 year olds, for a total of 20 weeks, at two placements;
- wrote several essays on pedagogy investigating assessment, questioning techniques, and the syllabus for mathematics up to secondary school level;
- attended training courses to develop my use of voice, lesson planning, and time management.

## OTHER EXPERIENCE

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In March 2017 I planned, wrote, and edited a chapter for Pearsons FP1 A-level Further Mathematics textbook. This involved reviewing the material used for the previous edition, writing new explanations, organising the content, and writing examination style and problem solving questions.

### Outreach events for The Training Partnership

- Planned and delivered the A-level exam technique session on 23rd November. There were 550 attendees.
- Chaired the GCSE maths session on 16th November which involved introducing the day, introducing the speakers, keeping the day running on time, and closing the day. There were 780 attendees.

### Outreach events for the University of Southampton

- Took part in Bright Club Southampton by performing mathematical stand-up comedy to an audience consisting of academics and members of the public unrelated to the university.
- Participated in ‘Three Minute Thesis’ where I introduced my research to a non-specialist audience in under 3 minutes using a single static powerpoint slide.
- Planned and delivered two ‘Access to Southampton’ sessions and a ‘Generating Genius’ day.

## SELECTED ACADEMIC TALKS

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Below are some of the 21 academic talks I have given on my research and related topics. At Young Researchers in Mathematics 2016 I also won 1st place in the poster competition.

- Friday Pure Colloquium, Southampton *Oct. 2016*
- Young Researchers in Mathematics 2016, St. Andrews *Aug. 2016*
- Postgraduate Group Theory Conference 2016, Imperial College London *June 2016*
- Groups & their Applications talk for the ‘Triangle’ Meeting, Birkbeck College London *Dec. 2015*
- Undergraduate Seminar, Southampton *Nov. 2015*
- Lunchtime Pure Seminar, Southampton *Oct. 2015*
- Young Researchers in Mathematics 2015, Oxford *Aug. 2015*
- Postgraduate Group Theory Conference 2015, Bristol *July 2015*
- Junior Topology and Group Theory Seminar, Oxford *Dec. 2014*
- Lunchtime Pure Seminar, Southampton *Nov. 2014*
- Junior Algebra Seminar, Cambridge *Oct. 2014*
- Young Researchers in Mathematics 2014, Warwick *July 2014*
- Postgraduate Group Theory Conference 2014, Birmingham *June 2014*
- Pure Postgraduate Seminar, Southampton *Nov. 2013*

## REFERENCES

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| <b>Dr Armando Martino</b><br>Lecturer in Mathematics at The University of Southampton     | A.Martino@soton.ac.uk<br>PhD supervisor     |
| <b>Dr Collin Bleak</b><br>Lecturer in Mathematics at The University of St Andrews         | cb211@st-andrews.ac.uk<br>External examiner |
| <b>Professor Ian J Leary</b><br>Head of Pure Mathematics at The University of Southampton | I.J.Leary@soton.ac.uk<br>Internal examiner  |