

# Andrew Roger Buckingham

T: 023 8059 2104  
e: [arb202@soton.ac.uk](mailto:arb202@soton.ac.uk)

School of Physics and Astronomy  
University of Southampton  
Southampton  
SO17 1BJ

## Current employment

### 2010 - Present

University of Southampton, Southampton, SO17 1BJ

Job title: Post Doctoral Research Fellow, Project leader in Superconducting Metamaterials

- Design, commission and development of novel hardware to characterize superconducting metamaterial structures in a free-space, mm-wave regime (75-110 GHz).
- Pioneering work in the mm-wave regime. Installation and first use of power-control software (0 - -30dBm) in the 75-110 GHz regime using Agilent PNA-X Vector network analyzers.
- Extensive use of world-leading clean room facilities for superconducting sample fabrication and analysis.
- Regular use of all experimental techniques described under PhD details.
- Supervision of up to 3 PhD students including demonstrating and assessing work.
- Regular presenter at international conferences including recent invited talks, *e.g. Metamaterials Congress 2011*, Barcelona, Spain, *NANOMETA 2011*, Seefeld in Tirol, Austria, *CMMP 2010*, Warwick, UK.

## Education

### 2006 – 2010

University of Southampton, Southampton, SO17 1BJ

#### PhD Physics

- Title: Modifying the magnetic properties of Laves phase intermetallic multilayers and films by nano-patterning and ion implantation.
- Extensive clean room experience. Use of electron beam and optical lithography systems, focussed and broad-beam ion milling systems, thin film deposition systems, electron microscopy, atomic and magnetic force microscopy.
- Regular use of cryogenic equipment (flow cryostat and closed-cycle systems) for use in vibrating sample magnetometers and electrical transport measurements, at temperatures down to 4.2 K in magnetic fields up to 16 T. Frequent characterization of magnetic and superconducting materials.
- Experience with optical systems including the design, construction and use of a magneto optical Kerr effect apparatus.
- Computational modelling of complex magnetic systems and experience with CAD programmes.
- Regular presenter at international conferences, *e.g. CMMP 2010*, Warwick, UK, *ICMFS 2009*, Berlin, Germany, *MMM 2008*, Austin, Texas, USA and *CMMP 2007*, Leicester, UK.

### 2002 – 2006

University of Southampton, Southampton, SO17 1BJ

**MPhys** Honours degree in Physics (First class)

## **2000 – 2002**

Dorchester Thomas Hardy School 6<sup>th</sup> Form, Queens Avenue, Dorchester, DT1 2ET

**A levels** Physics, Mathematics, Biology & General Studies

**AS level** English Literature

## **1997 – 2000**

Dorchester Thomas Hardy School, Queens Avenue, Dorchester, DT1 2ET

**12 GCSEs** grades A\* - C

## **Academic Achievements**

**2005** Best Performance: Continuing Cohort

**2003** Dean's List

**2004** Head of School's List

## **Key Skills**

- Management of several postgraduate and undergraduate students including delegation of tasks, training and assessment of work.
- Collaboration and networking between departments including travel to and use of national facilities.
- Ability to think creatively and form innovative solutions to challenging problems.
- Excellent planning and time management skills ensuring projects are completed on time.
- Frequent, enthusiastic experience in team-working situations, including teaching skills and demonstrating processes to colleagues and students.
- Regular presentation of work in a professional format to collaborators.
- Regular presenter at international conferences, *e.g.* *CMMP 2010*, Warwick, UK, *ICMFS 2009*, Berlin, Germany, *MMM 2008*, Austin, Texas, USA and *CMMP 2007*, Leicester, UK.

## **Employment History**

### **2006 – 2009**

#### **University of Southampton, Southampton**

*Undergraduate Laboratory Demonstrator (part-time)*

Work closely with students demonstrating, assisting and assessing practical experiments. Additional duties include providing undergraduate class tutorials and feedback sessions to senior members of staff.

### **2005 & 2006**

#### **New Forest Ice Cream, Southampton**

*Courier (summer vacations)*

Driver and representative for a popular local company, in which time management and communication skills were greatly built upon.

### **2004 – 2005**

#### **A Grade Tutors, Cambridge**

*A-level & GCSE tutor (part-time)*

Provide 1-on-1 tutorials in physics and mathematics to improve the students' overall ability and understanding, helping them attain the highest grade possible.

**Interests**

I have a keen interest in Formula 1 and the World Rally Championship, and continue to be a member of the University of Southampton's motor sports club, where in the past I have held the positions of Secretary and Social Secretary. Much of my free time is dedicated to marshalling on motorsports and related events which provide a valuable opportunity to put something back into the community. I enjoy an active lifestyle which includes walking and exploring new countries, cities and cultures. I also enjoy photography.