

# DR SHARON ANN HOLGATE

## Freelance Science Writer and Broadcaster

Institute of Physics Young Professional Physicist of the Year 2006

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## BOOKS

### IOP Publishing in conjunction with Morgan & Claypool Publishers:

*Outside the Research Lab - Volume 1: Physics in the Arts, Architecture, and Design* published as an e-book in Feb 2017. Paperback version awaiting publication.

### Taylor and Francis:

Undergraduate textbook *Understanding Solid State Physics* published in Dec 2009, currently in use internationally both as a core course textbook and supplementary course text.

### Dorling Kindersley:

Co-author (with Robin Kerrod) of *The Way Science Works*, Apr 2002. Shortlisted for the Junior Prize in the Aventis (now Royal Society) Prizes for Science Books, 2003.

### Ivy Press (Icon Books):

Contributor to popular science book *30-Second Quantum Theory* edited by Brian Clegg, conceived, designed and produced by Ivy Press, and first published in the UK by Icon Books Ltd in 2014. I wrote the entries on S.N. Bose, and MRI Scanners.

## FEATURES

### Science:

*Strength in disability*, Mar 27, 2015; *Life inspires applications*, Oct 17, 2014.

### Science Careers:

*Blog, tweet, and avoid the pitfalls*, Dec 8 2015; *How to present a disability during recruitment*, Apr 22 2015; *Disability as a difference of perspective*, Mar 17 2015; *Life inspires clinical applications*, Oct 7 2014; *Gaining an edge in overseas interviews*, Aug 4 2014; *Becoming a Catalyst for Greater Diversity in Science*, May 13 2014; *How to Present Yourself During an Interview*, Apr 10 2014; *When an Interview (Seemingly) Goes All Wrong*, Apr 9 2014; *Scrutinizing Your Personality*, Apr 7 2014; *Establishing a Sustainable Career by Breaking the Academic Mold*, Feb 26 2014; *Becoming a Chartered Scientist*, Nov 27 2013; *Exploring (and Creating) Opportunities*, Sep 9 2013; *Creating a successful online presence*, June 19 2013; *Successful Careers: A Matter of Confidence*, Nov 23 2012; *How to Collaborate*, July 20 2012; *Emerging Professions: Knowledge Broker*, Jun 08 2012; *Enhance Your Career with Leadership Skills*, Mar 23 2012; *Firing up Tomorrow's Science Stars*, Jan 6 2012; *Conquering Information Overload*, Nov 4 2011; *From Engineer to Entrepreneur*, Aug 26 2011; *Presenting Science for the Anxiety Averse*, Jun 10 2011.

### E&T:

*Cancer's Newest Nemesis Hits the UK*, May 2016 (online as *Cancer Treatment: proton beam therapy coming to UK*, Apr 18 2016); *Include or Lose: Design for the whole market*, Apr 2016 (online Mar 14 2016); *Dawn of the new P2 age*, Dec 2015 (online Nov 9 2015); *Your Virtual e-Therapist*, Nov 13 2010 (online as *New technologies in medicine*, Nov 8 2010); *Second Light*, Jun 19 2010 (online as *New dawn for photonics investment*, Jun 14 2010); *All*

*aboard Tornado: engineering a new steam locomotive*, Mar 6 2010; *From fat controller to microcontroller*, Mar 6 2010; *Home help*, Oct 5 2009; *Towards a less claustrophobic scanning*, Oct 5 2009.

#### **Physics World:**

*Leadership required*, Sep 2014; *Navigating new cultures*, Mar 2014; *Medal-winning presentations*, Mar 2013; *Female professors: still a rare breed*, Sep 2000; *Science museum seeks to inspire*, Sep 1999; *How to combine physics and a family*, Apr 1999; *Physicists paint a clearer picture*, Jul 1998; *Physics and the single girl* (partially fiction), Nov 1995.

#### **Materials World:**

*Sculpting the urban landscape*, Apr 2015.

#### **Interactions:**

*Dance helps physicists to grasp the Higgs*, July 2013; *Why pirated books cost us all too dear*, Apr 2013; *Particle physics stirs up some artists*, Oct 2012; *Artwork imagines an explosive future*, Sep 2012; *Sculpture exhibition gets physical*, Sep 2007.

Profiles of: Matthew Healy, Sep 2008; Peter Townsend, Jul 2008;

Pat Kelly; Jun 2008; Libby Heaney, May 2008; Robin Saxby, Apr 2008; Mark Lewney, Mar 2008; Donal Denvir, Feb 2008; Iestyn Jones, Dec 2007; Oliver Wright, Nov 2007; Francisco Diego, Sep 2007; Haley Gomez, Jul 2007; Paul Parsons, Jun 2007; Liz Ainsbury, May 2007; Pete Vukusic, Apr 2007; Jim Al-Khalili, Mar 2007; John Hassard, Feb 2007; Steve Keevil, Dec 2006.

#### **Flipside:**

Boxed content for *Pedal to the Metal!*, Nov 2013; Physics and astronomy sections of Dr Who tie-in *Living in the past*, Jan 2007; *Kerunnch!*, Oct 2005; *Don't Panic*, Jun 2005; *Movie Myths*, Apr 2005.

#### **IET Student and Young Professional:**

*Ten new jobs for a new generation*, May 2010.

#### **Astronomy Now:**

*Cool beginnings for hot stars*, Jun 2002.

#### **The Times Higher Education Supplement:**

*Star Turn: Angela Jacklin*, Nov 2 2001; *The not so odd couple*, Oct 27 2000; *Put the fizz in physics*, Jun 23 2000.

#### **Focus:**

*Lasers*, Feb 2000; *Mysteries of magnetism*, Nov 1999; *The future's pants*, Aug 1999; *Eureka! 76 of the World's most useless inventions ever*, May 1999; *Everything you ever wanted to know about toilet paper*, Jan 1998.

#### **Modern Astronomer:**

Co-author (with Roger Fenn) of *Your Route to the Stars*, Jun 1997.

## **NEWS STORIES**

#### **Interactions:**

*Bose makes a quantum leap into the limelight*, Feb 2005.

#### **The Times Higher Education Supplement:**

*Bright sparks noted by RCA*, Jul 20 2001; *Council spurs industry focus*, Jul 6 2001; *Judges*

*bowled over by a squashy utensil*, Jun 29 2001; *Entrepreneurs get advice on risk and on carrying the can*, Jun 15 2001; *Fibre feat is a load of thin air*, May 4 2001; *Project aims to lift internet experience*, Mar 2 2001; *Project to rethink software design*, Feb 16 2001; *Hub of activity for start-ups*, Nov 10 2000; *Wanted: an angel flush with money*, May 26 2000; *Niche products to govern research*, Apr 14 2000; *Big help for small businesses*, Mar 17 2000.

#### **New Scientist:**

*Molecular chopsticks*, Dec 18 1999; *Glowing report*, Sep 18 1999; *Bright Idea* (Technofile), Feb 6 1999; *Bright Idea* (In Brief), Jan 30 1999; *Buckytube crewcut fuels flat TV displays*, Nov 14 1998; *Bright Hope* (Technofile), Nov 7 1998; *Great vibes from big surf*, Oct 31 1998; *A perfect fit*, Aug 29 1998; *Sensing is believing*, Aug 15 1998; *Sensor in a bubble*, Mar 28 1998; *Nosy doctor's aide sniffs out disease*, Jan 31 1998; *Forgeries Foiled*, Jul 5 1997.

## **CASE STUDIES, BROCHURES AND CAREERS LEAFLETS**

#### **The Institute of Physics:**

Writing case studies (as one of a group of writers) for IOP *Physics: Transforming Lives* policy project, Jun 2012-Mar 2013; Co-writing (with Taj Bhutta) IOP *Physics at Highers* brochure, Jun 2010; Writing/editing as part of *Repackaging Physics* project, 2008-2009; Profiles of members on IOP website, 2008; Co-writing (with Taj Bhutta) IOP *Physics at A-level* brochure, Nov 2008.

#### **Institute of Physics and Engineering in Medicine:**

*Improving Treatments, Saving Lives*, brochure on medical physics and engineering, 2011; Profiles of medical physics and clinical engineering job sectors on IPeM website, 2010; Spotlight brochure on *Electronic Medical Implants and Measuring Devices*, 2010; Spotlight brochure on *New Applications for MRI*, 2009; Spotlight brochure on *Proton and Ion Therapy*, 2008; Spotlight brochure on *Electronic Technology for Independent Living*, 2007; Two leaflets promoting careers in clinical science and engineering: *Just the Job* for 15-18 year olds, and *Moving on Up* for graduates, 2006; Spotlight brochure on *Optical Techniques in Medical Imaging*, 2006; Spotlight brochure on *PET/CT Imaging*, 2005.

## **PRESS RELEASES**

#### **Institute of Physics (IOP):**

2 releases for the IOP Condensed Matter and Materials Physics Conference, Apr 2004.  
1 release for the IOP Condensed Matter and Materials Physics Conference, Apr 2003.  
5 releases for the 26th International Conference on the Physics of Semiconductors, Jul 2002.  
5 releases for the IOP Condensed Matter and Materials Physics Conference, Apr 2002.  
1 release for the IOP Dielectrics Group Meeting, Dec 2001.  
6 releases for the IOP Condensed Matter and Materials Physics Conference, Dec 2000.  
6 releases for the IOP Applied Optics and Opto-Electronics Conference, Sep 2000.

## **BOOK REVIEWS**

#### **Physics World:**

*Back to the imagined future* - review of 'The Return of Vaman' by Jayant V Narlikar, Oct 2015.

*A medical history lesson* - review of 'Physicists and Physicians – A History of Medical Physics from the Renaissance to Röntgen' by Francis A Duck, Dec 2013.

**E&T:**

Book review of 'The Winter Vault' by Anne Michaels, Sep 8 2009.

**New Scientist:**

*The point of physics* - review of 'Physics in the 20th Century' by Curt Suplee, Apr 10 1999.

## **OTHER WRITING AND CONSULTANCY**

**Q-files:**

Consultant for Electricity and Magnetism section of *Q-files.com* online children's encyclopaedia, Dec 2014.

**Journal of the Association of Neurophysiological Scientists:**

*What CSci Means To Me*, vol 6 no 1, 2013.

**The Science Reporter:**

*An awarding experience*, Mar/Apr 2007.

**Science Year:**

Quiz to win copies of *The Way Science Works* on the Science Year website, Aug 2002.

**Focus:**

*How it Works* series Nov 99, Jan 2000, Feb 2000.

**Department of Trade and Industry:**

Newsletter for the Promoting SET for Women Unit in the Office of Science and Technology at the DTI, Autumn 2000.

## **PRESENTING ON RADIO AND ONLINE**

**BBC Radio 4:**

Presenter and format creator of science pantomime *Jack and the Genetically Modified Beanstalk*, broadcast on Dec 24 2011, and repeated on BBC Radio 4 Extra on Dec 22 2012. Presenter and writer of documentary *The Indian Particle Man* about the Indian physicist S. N. Bose, first broadcast on Jan 12 2005, featured on *Pick of the Week*, Jan 16 2005 and repeated in 'Sunday Best' slot, Mar 6 2005. Shortlisted for 'The best scripted/edited radio programme on a science subject' category of the Syngenta ABSW Science Writers' Awards 2005.

**Myrovlytis Trust:**

Presenter/interviewer for video podcast interviews with researchers at The University of Cambridge, Cardiff University, The University of Birmingham and Imperial College. Series began online transmission April 2011.

**BBC World Service:**

Report on the use of rare woods in making musical instruments for *The Lab*, Mar 3 2001; Science of Xmas song lyrics on youth programme *The Edge*, Dec 23 2000; Six 3 minute slots of *E=MC Shaz*, a scientific explanation of pop lyrics on *The Edge*, Nov-Dec 2000; Science of bras feature for *The Edge*, Jun 10 2000; Six 3 minute slots of *E=MC Shaz*, Sep-Nov 1999.

**Charity stations and hospital radio:**

Four 3 minute science slots for charity station Radio S.U.S.Y., Apr 1997.

Presenter on Coastway Hospital Radio, Summer 1992-Spring 1993.

## TV, RADIO, AND ONLINE APPEARANCES

### **BBC Learning:**

Interviewee (talking about what inspired me to become a scientist) for internal BBC Learning Strategy Launch film, Sep 2010.

### **BBC Radio 2:**

Guest on Chris Evans Drivetime show, Dec 6 2007.

### **BBC Radio 4:**

Guest, along with rock musician Chris Rea, knitter and historian Anne Sinclair and playwright Arnold Wesker on *Midweek* with Libby Purves, Oct 12 2005.

### **BBC2:**

Contestant on Boffins Special of the *Weakest Link* with Anne Robinson, Dec 4 2003.

### **British Satellite News:**

TV news feature on my talk at Great Ormond Street Children's Hospital during National Science Week, including interview about *The Way Science Works*, Mar 12 2003.

### **BBC Coventry and Warwickshire:**

Guest on Saturday Breakfast Show with Malcolm Boyden, Dec 8 2007.

### **BBC Southern Counties Radio:**

20 minute interview as 'Tea at 3' guest, Jul 29 2002; 20 minute Time Travel special, May 3 2000; Four-part series of *Science Watch* a weekly 10 minute science slot on Bill Buckley's Afternoon Show, Jul-Aug 1999; 20 minute Xmas special, Dec 17 1998; 3 six-week series' of *Science Watch*, Jan - Aug 1998.

### **Other:**

Guest on Pulse Project weekly podcast, Episode 25, Nov 2010.

20 minute interview as guest on charity station Radio S.U.S.Y., Aug 23 2002.

Interviewing members of the public for three Science Line features promoting the Institute of Physics Annual Congress, broadcast on BBC Radio Wales, BBC Radio Leicester and BBC Southern Counties Radio, Mar 2001.

## PUBLIC TALKS AND PRESENTATIONS

### **A Crash Course in Science Writing:**

20 minute talk via video link for physics MSc students, Imperial College, London, Feb 13 2014.

### **From Thermoluminescence to Time Travel – Life as a Science Writer and Broadcaster:**

45 minute talk via video link about science writing and broadcasting, followed by Q and A session, Rhodes University South Africa, May 12 2011.

### **Science and Magic - Journey to the land of the Pharaohs:**

Two one hour shows with magician Tony Drewitt exploring the science and magic of Ancient Egypt at The Jewish Museum in Camden, London, May 14 2006.

### **Physics and Magic - A journey beyond $E=MC^2$ :**

Two one hour shows with magician Tony Drewitt using illusions to illustrate some of Einstein's grandest theories, to accompany the Einstein exhibition at The Jewish Museum in Camden, London, Oct 16 2005. Further performance due to popular demand on Nov 27 2005.

### **Einstein Year:**

Two 40-minute talks with audience participation on the Science and History of Toilet Paper as part of Einstein Year week at Milestones Museum Basingstoke, Feb 18 2005.

### **Association of British Science Writers:**

10 minute talk on coping with freelancing, and member of panel for open forum discussion on self-employment issues for Association of British Science Writers' Freelance Business Skills training workshop, Oct 2 2004.

### **University of Sussex:**

25 minute talk on 'Science Writing as a Career' for undergraduate and postgraduate physics students as part of University of Sussex Physics Careers day, Mar 3 2004.

### **National Science Week:**

40 minute talk with demonstrations and audience participation based on *The Way Science Works* for patients at Great Ormond Street Children's Hospital sponsored by the Institute of Physics, and part of National Science Week, Mar 12 2003.

### **Dorling Kindersley:**

30 minute talk with demonstrations and audience participation at the Science Museum in London to launch *The Way Science Works*, Apr 20 2002.

## **PROFESSIONAL ASSOCIATIONS AND QUALIFICATIONS**

Full member of Association of British Science Writers.

Member of Equity.

Member of The Society of Authors.

Member of the Institute of Physics; awarded Chartered Physicist status June 1999.

Member of the Institute of Physics and Engineering in Medicine.

Awarded Chartered Scientist status October 2004.

April 2002-March 2011, Visiting Fellow in Physics and Astronomy at the University of Sussex.

## **AWARDS**

Institute of Physics Young Professional Physicist of the Year 2006.

The Indian Particle Man shortlisted for 'The best scripted/edited radio programme on a science subject' category of the Syngenta ABSW Science Writers' Awards 2005.

*The Way Science Works* shortlisted for the Junior Prize in the Aventis (now Royal Society) Prizes for Science Books, 2003.

Merit Award winner in 1994 Daily Telegraph Young Science Writer of the Year competition.

## **EDUCATION AND JOURNAL PUBLICATIONS**

1992-1996 D.Phil in Physics, University of Sussex, using thermoluminescence to study defects in crystals.

Scientific papers published: "Thermoluminescence of Calcium Fluoride doped with Neodymium" *J.Phys.Condens.Matter* 6(1994) 9255-9266; "Cathodoluminescence and depth profiles of tin in float glass" *J.Phys.D* 27(1994) 1757-1762. Abstracts published: "Analysis of Glow Peaks Near Room Temperature" in proceedings of Luminescence and ESR Research Seminar, University of Sussex, 1995, ISBN 1874465 23 1; two abstracts (on papers

mentioned above) for 1993 International Conference on Luminescence, Connecticut USA.  
1992 Graduated with a BSc (Hons) in Physics, University of Sussex. Final year project: Defect studies in window glass.  
1986-1988 BTEC Diploma in Science Northbrook College. Awarded the Blue Circle Industries Prize for BTEC Diploma in Science (Second Year), 1988.

## **TEACHING, PRESENTING, AND OTHER ACTIVITIES AT UNIVERSITY**

1994-96 also employed by the department as a Teaching Assistant, concurrently taking a Teaching and Learning Course. My teaching duties between 1993 and 1996 included preliminary year workshops, undergraduate teaching labs (1st and 2nd year), tutoring two 1st year courses, and jointly supervising a 3rd year project.

1994-95 Consultant Tutor for Open University Summer Schools, explaining research/life as a research student.

Summer 1994 conceived, produced and co-presented a video of department to show to prospective candidates on admissions day.

Summer 1992, Tutor and live-in chaperone on "Girls into Physics" summer school at Sussex University, designed to encourage 15-16 year old school girls to study Physics.

1990-91 Chairman of School Joint Committee (a staff/student committee) for department. Organised and fronted large social events, improved departmental facilities and liaised between students/staff/faculty university wide.

1992-95 Term-Time. Guided tours of some laboratories for prospective students or their parents.

1993-94 Student Liaison Officer for department. Liaised between students and faculty, organised Fresher's events, helped solve students' academic/personal problems, chased up non-attendees, helped on interview days.

## **TRAINING**

2013, took IOP online course in: International and Remote Working.

Throughout 2011, took BBC Safeguarding Trust Dilemmas modules in: Radio (v2); Journalism (v1); Online (v2); Factual TV (v2); Factual Drama (v1); Observational Documentaries (v1); and TV (v1).

Feb 1997, attended an Editing Skills Workshop run by the University of Sussex.

1978-1984 attended weekly elocution/drama lessons, and took exams in spoken poetry and prose at the Poetry Society, London.

## **PRE-UNIVERSITY SCIENTIFIC WORK EXPERIENCE**

6 months (Oct 1988-Mar 1989) as a Medical Laboratory Scientific Officer, Biochemistry Department, Worthing Hospital. Duties included testing blood for rheumatoid arthritis.

6 weeks (1987) at Eurotherm plc (manufacturer of industrial temperature controllers), on production lines and in quality control department as part of my BTEC Diploma in Science.