

LEWIS DARTNELL

The Centre For Planetary Sciences at UCL/Birkbeck
Earth Sciences
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Academic History

- 2009 - Centre for Planetary Sciences, University College London
UCL Institute of Origins Post Doctoral Research Associateship
(2 year post, extended by 13 months for a number of projects)
- 2003 - 2008 CoMPLEX (Centre for Mathematics & Physics in the
Life Sciences and Experimental Biology)
University College London
4-year combined MRes-PhD programme
PhD: 'Computer modelling and experimental work on the astrobiological
implications of the martian subsurface ionising radiation environment'
MRes in 'Modelling biological complexity': *Distinction*
- 1999 - 2002 The Queen's College, University of Oxford
BA (Hons) Biological Sciences: *First Class*
Michel Scholarship
- 1994 - 1999 Charterhouse School, Godalming
Distinction at STEP level, 4 *A* at A-level, 8 *A** at GCSE.
Sutton Scholarship, Foundation Scholarship

I have also worked for the Royal Institution and the Broadcasting Support Services.
Further details available on request.

Awards & Appointments

- 2011 Appointed to the Senior Editorial Board of *Astrobiology* journal
- 2009 Awarded UCL Institute of Origins Postdoctoral Research Associateship
- 2008 Invited to serve as planetary consultant for *BBC Sky at Night*, writing a monthly
Cutting Edge column
- 2008 Selected as a *NOISEmaker* ambassador for science and engineering.
- 2007 Appointed to *International Academy of Astronautics* Study Group 1.5: 'Particle
Radiation Hazards *en route* to, and in orbit about, Mars'
- 2007 Selected for *NASA Space Radiation Summer School* (NSRSS), USA.
- 2007 *Wellcome Trust* and *New Scientist* Essay Competition, runner-up
- 2006 European Geophysical Union award for *Outstanding Young Scientist*, including an
invited paper
- 2006 Invited on to the Committee of the *Astrobiology Society of Britain*. Currently
Secretary of the Society.
- 2005 British Association for the Advancement of Science *Perspectives* public outreach
prize, runner-up
- 2004 Daily Telegraph/BASF *Young Science Writer Award*, Second prize
- 2004 Royal Astronomy Society *Science Writing Competition*, First prize

2003 Times Higher Education Supplement/Oxford University Press *Science Writing Competition*, Second prize

Teaching experience

I prepared and delivered 10-hour lecture evening course on planetary science and astrobiology at the Royal Observatory Greenwich (Nov'10). I have also lectured on astrobiology courses run by STFC summer school (Sept'07, '09, '11), the Scottish Universities Physics Alliance (Dec'07), and the Origins of Life course run by the Viennese Biocenter (Nov'10). I was selected as the Biology department Writing and Learning Mentor, running lectures and classes to help students with their academic writing (2008). I also have five years of experience in private tuition of science and mathematics for CE, GCSE and A-level students.

Student supervision

Nov 2011-Sept 2012: MSc, Planetary Sciences, UCL – Kira Lorber
Oct 2011-Mar2012: MSci, Earth Sciences, UCL – Poppy Hollom
June 2011-Sept 2011: MRes, CoMPLEX, UCL – Tom Roberts
June 2011-Sept 2011: MSc, Cranfield Uni – Sophie Russell
Nov 2010-Sept 2011: MSc, Planetary Sciences, UCL – Angelica Estelles
Oct 2010-Mar 2011: MSci, Earth Sciences, UCL – Michaela Musilova. *Paper in prep*
Apr 2010: MRes, CoMPLEX, UCL – Maria Botcharova
Apr 2010: MRes, CoMPLEX, UCL – Michaela Moores.
May-Aug 2008: MRes, CoMPLEX, UCL – David Fallaize. *Published* [8]

Peer-reviewing

I am the Senior Editor overseeing review papers for *Astrobiology* journal, and have peer-reviewed research proposals for the US National Astrobiology Institute (NAI), three book proposals and also a total of 14 papers:

Astrobiology (8), *International Journal of Astrobiology* (2), *Planetary and Space Science* (1), *Earth Moon and Planets* (1), *Journal of Geophysical Research* (1), *Sustainability* (1)

Conference organisation & talks

I am co-organising a session at AbSciCon 2012 on '*Biological radiation energy capture and protection*' and have co-organised a Royal Astronomical Society Specialist Discussion meeting on planetary habitability, '*Is the Earth Special?*', Dec 2011. I sit on the Astrobiology Society of Britain (ASB) Committee, overseeing the organisation of both the 2008 and 2010 Astrobiology conferences. I co-organised the 2006 EPSRC Life Science Interface Conference and the 2007 CoMPLEX Conference. I have given Invited Talks at Vienna Biocenter Center 'Origins of Life' symposium (Nov'10), European Geophysical Union General Assembly (Apr'07), 3rd European Space Weather Week (Nov'06), and also talked at ASB4 (Apr'10), Swedish Astrobiology Network meeting (Nov'09), UK Space Biomedicine Conference (Nov'09), Habitability in the Galaxy (Oct'08), Space Generation Congress (Oct'08), ASB3 (Jul'08), European Astrobiology Network Association (Oct'07), European Geophysical Union General Assembly (Apr'07), COSPAR 36th Scientific Assembly (July'06), as well as numerous other external seminars and smaller meetings.

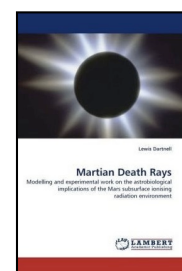
Publications

Journals

16. **Dartnell, L.R.**, K. Page, S.E. Jorge Villar, G. Wright, T. Munshi, I.J. Scowen, J.M. Ward, H.G.M. Edwards (in review), Destruction of Raman biosignatures by ionising radiation and the implications for life-detection on Mars, *Analytical and Bioanalytical Chemistry*
15. **Dartnell L.R.**, Patel M.R., Storrie-Lombardi M.C., Ward J.M., Muller J-P (in review), Photostability and fluorescence-based detection of PAHs on the Martian surface, *Meteoritics and Planetary Science*
14. **Dartnell L.R.**, M. Storrie-Lombardi, C. Mullineaux, J-P Muller, G. Wright, J. Ward (In Press; out Dec'2011), Degradation of cyanobacterial biosignatures with ionizing radiation, *Astrobiology*
13. **Dartnell L.R.**, (2011) Ionising radiation and Life, *Astrobiology* 11(6), 551-582
12. de Angelis G. & **L.R. Dartnell**, (In Press) Modeling of the Radiation Environment on Mars. II. Results from Calculations, *International Academy of Astronautics*
11. de Angelis G. & **L.R. Dartnell**, (In Press) Modeling of the Radiation Environment on Mars. I. Modeling Approaches and Techniques, *International Academy of Astronautics*
10. **Dartnell L.R.**, Storrie-Lombardi M.C., Ward J.M., (2010) Complete fluorescent fingerprints of extremophilic and photosynthetic microbes, *International Journal of Astrobiology*, 9(4), 245-257
9. **Dartnell L.R.**, Hunter S.J., Lovell K.V., Coates A.J., Ward J.M., (2010) Low-temperature ionising radiation resistance of *Deinococcus radiodurans* and Antarctic Dry Valley bacteria, *Astrobiology*, 10 (7), 717-732
8. **Dartnell L.R.**, Fallaize D.R., Whiting S.J., Ward J.M., (2010) Desiccation resistance of Antarctic Dry Valley bacteria isolated from contrasting locations, *Antarctic Science*, 22(2), 171-172
7. **Dartnell L.R.**, Burchell M.J., (2009) Survey on Astrobiology Research and Teaching Activities within the United Kingdom, *Astrobiology* vol. 9 (8), 717-730
6. Le Postollec A., Incerti S., Dobrijevic M., Desorgher L., Santin G., Moretto P., Vandenabeele-Trambouze O., Coussot G., **Dartnell L.R.**, Nieminen P., (2009) Monte-Carlo simulation of the radiation environment encountered by a biochip during a space mission to Mars, *Astrobiology*, 9(3), 311-23
5. **Dartnell L. R.**, L. Desorgher, J. M. Ward, A. J. Coates (2007), Martian sub-surface ionising radiation: biosignatures and geology, *Biogeosciences*, 4(4), p.545-558
4. **Dartnell L. R.**, L. Desorgher, J. M. Ward, A. J. Coates (2007), Modelling the surface and subsurface Martian radiation environment: Implications for astrobiology, *Geophysical Research Letters*, 34, L02207
3. P. Morthekai, M. Jain, **L. R. Dartnell** et al (2007), Modelling of the dose-rate variations with depth in the Martian regolith using GEANT4, *Nuclear Instruments and Methods A*, 580(1), 667-670
2. **Dartnell L. R.**, J.M Ward, A.J. Coates (2006), Modelling Planetary Radiation Environments: Astrobiological Perspectives, *Proceedings of the European Modelling Symposium*, ISBN 0-9516509-3-9/978-0-9516509-3-6
1. **Dartnell L. R.**, E. Simeonidis, M. Hubank, S. Tsoka, D. Bogle, L. Papageorgiou (2005), Robustness of the p53 network and biological hackers, *FEBS Letters*, 579, p3037-3042

Ph.D. thesis 'Computer modelling and experimental work on the astrobiological implications of the martian subsurface ionising radiation environment', University College London, April 2008. This thesis was independently re-published in paperback in May 2010 by Lambert Academic Publishing as 'Martian Death Rays'

www.amazon.co.uk/Martian-Death-Rays-experimental-astrobiological

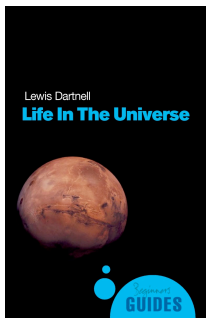


The *Geophysical Research Letters* paper (#4) was selected by the editors for a special highlight in the journal, and received considerable media attention. The *Biogeosciences* publication (#5) was an invited paper from my EGU *Outstanding Young Scientist* award, and included an invited talk at the General Assembly in April 2007. My recent *Astrobiology* publication (#9) was selected by the Editor-in-Chief of the journal as a Key Paper, and additionally received international press coverage.

Learned Publications

7. **L. R. Dartnell** (2011), Biological constraints on habitability, *Astronomy & Geophysics*, 52(1), p.25–28
6. **L. R. Dartnell** (2010), The Search for Our Neighbours, *Public Service Review: Science and Technology*, issue 7, p.19
5. M. Burchell & **L. R. Dartnell** (2009), *Astrobiology in the UK*, *Astronomy & Geophysics*, 50(4), p27–30
4. **L. R. Dartnell** (2008), A Living Mars?, *Geology Today*, 24(2), p.62-67
3. **L. R. Dartnell** (2008), Mars: Waterworld or Dune?, *The Biochemist*, 30(4), p.22-25
2. **L. R. Dartnell** (2008), Space Bugs, *Microbiology Today*, May 2008, p.62-64
1. **L. R. Dartnell** (2005), It's life, Jim..., *Astronomy & Geophysics*, 46(1), p1.12-1.13

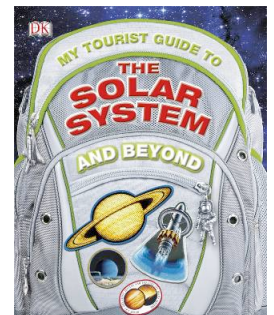
Books



2. **Lewis Dartnell** (2012), 'My Tourist Guide to the Solar System and Beyond', Dorling Kindersley, hardback 64 pages, ISBN: 9781405391429

1. **Lewis Dartnell** (2007), 'Life in the Universe: A Beginner's Guide', Oneworld Publications, paperback 224 pages, ISBN: 1851685057

www.amazon.co.uk/Life-Universe-Beginners-Guide



National Media

I have also published a substantial number of science pieces, both news and full feature articles, in the national and international press. These include *New Scientist*, *BBC Focus*, *BBC Sky at Night*, *Cosmos*, *The Guardian*, *The Daily Telegraph*, *The New York Times*, and *Times Higher Education*. These are all available on my website

www.lewisdartnell.com

