# **CURRICULUM VITAE (NOVEMBER 2018)**

# PERSONAL DETAILS

Name: Prof. Dr Christopher Busby

**Home Address:** Lielupes Iela 1k-1-12, Riga, LV-1016, Latvia

Tel: +371 67304931; Mob: +371 29419511

#### **Professional Address:**

Prof. Dr. Christopher Busby

Green Audit

2 Bridge Street, Bideford, Devon

**EX39 2BU** 

Tel. & fax: +44 1237 42 35 05 Mob: +44 7989 42 88 33

also

Environmental Research SIA

1117 Latvian Academy of Sciences

Academi Laukas 1 Riga LV-1050 Latvia

E-mails: <a href="mailto:christo@greenaudit.org">christo@greenaudit.org</a>

scisect@euradcom.org

also

Internationella Insamlingsstiftelsen for Forskning om

Radioaktivitetens Risker

International Foundation for Research on Radioactivity Risk

Sodra Jordbrovagen 25

13765 Jordbro Stockholm Sweden

Mob: +46 70 399 90 69

**also** MV Marius, Europe

Mob: +33 78 21 55 74 6

Date/Place of Birth: 01/09/45, Paignton, Devon UK

**Nationality:** British

Resident: Latvia

# **FURTHER/HIGHER EDUCATION**

**Education:** 1966-69 Chemistry, University of London

# TRAINING AND QUALIFICATIONS

BSc, PhD, MRIC

**Qualifications:** 1969 University of London First Class Honours Special Degree

in Chemistry

1970-71 SRC research studentship for PhD Physical Chemistry

(nmr spectroscopy), Queen Mary College, London 1974 Elected Member of Royal Society of Chemistry

1974 Chartered Chemist

1981 PhD Chemical Physics (Raman

spectroscopy/electrochemistry) University of Kent, Canterbury

#### **Learned Societies:**

Member: Royal Institute of Chemistry Member: Royal Society of Medicine

Member: International Society for Environmental Epidemiology

Member: Ukraine Committee: Physicians of Chernobyl

#### **UK Government Committees**

Member: (Department of Health and DEFRA) CERRIE

Committee Examining Radiation Risk from Internal

Emitters 2001-2004

www.cerrie.org

Member: Ministry of Defence DUOB

Depleted Uranium Oversight Board

2002-2007

www.duob.org

#### **Other Committees**

Scientific Secretary: European Committee on Radiation Risk

www.euradcom.org www.euradcom.eu

Science Policy group Leader: Policy Information Network on Child

Health and Environment PINCHE

www.pinche.org

Scientific Secretary: International Committee on Nuclear Justice

www.nuclearjustice.org

# **1.2 EMPLOYMENT**

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# **1.3 TEACHING EXPERIENCE**

1970	Taught O-level Chemistry part time, Inner London Education Authority
1980-1981	Gave tutorials in quantum mechanics at the Dept. of
	Chemistry. University of Kent
1995-1997	Invited lecturer at the University of Sussex Dept. of
	Physics.
1995-1997	Invited lecturer in the University of Wales,
	Aberystwyth, Physics Department and Geography
	Department
2000 - 2005	Invited lecturer in the University of Liverpool Faculty of
	Medicine SSM5 'Environment and Health' addressing
	internal radiation risk and cancer epidemiology of small
	areas.
2005	Invited lecturer University of West of England;
	Radiation Risk and epidemiology
2006	Invited lecturer: Dept. of Law, University of Wales,
	Aberystwyth
2006	Invited lecturer: Dept. of Environment, University of
	West of England
2007	Invited lecturer: Centre for Molecular Bioscience,
	University of Ulster (annually) to retirement in 2012

# 1.4 ADMINISTRATIVE EXPERIENCE

## **Professional Administration:**

Senior Scientist, Dept of Physical Chemistry, Wellcome Research Laboratory, Langley Park, Beckenham

Science Director, Green Audit

2004-2006 Leader: Workpackage 6 Science and Policy; PINCHE (EU)

#### **Reviewer**

British Medical Journal

The Lancet

International Journal of Radiation Biology

Science of the Total Environment

European Journal of Biology and Bioelectromagnetics

European Journal of Cancer

European Journal of Medical Genetics

Journal of Public Health (Royal College of Physicians, School of Public Health)

Science and Public Policy

Occupational and Environmental Medicine (BMJ)

Annals of Nuclear Energy

Physiological and Biochemical Zoology

Jacobs Journal of Epidemiology and Preventive Medicine
International Journal of Environmental Research and Public Health (IJERPH)
Cogent Chemistry
Biological Theory
European Journal of Medical Genetics
The Open Public Health Journal

#### **Editorial Board member**

Jacobs Journal of Epidemiology and Preventive Medicine Environmental Health and Toxicology The Open Public Health Journal Journal of Pharmacology and Clinical Research

# 1.5 EXPERT WITNESS

Since 1997 Chris Busby has been engaged as an expert witness on the health effects of ionizing radiation. He has been retained in several cases that relate to the effects of radioactive pollution on health, in several refugee appeals (Kosovo) based on Depleted Uranium risks, several trials of activists accused of criminal damage at weapons establishment and one at the House of Commons (evidence on Depleted Uranium and other radioactive substances) He has advised MoD pension appeals tribunals for several A-Bomb test veterans and three veterans of the Persian Gulf War and once in the Connecticut State Court for an appeal against licensing releases of radioactivity from the Millstone reactor on Long Island Sound. He acted in two cases in the UK involving the health effects of internal irradiation from Depleted Uranium. One of these was in the Royal Courts of Justice.

Busby was expert witness also in several radiation exposure cases in the USA as listed below. Several of these (against Exxon, Texaco, Chevron) were settled. He is currently expert witness on a second SSFL radiation and cancer case in Los Angeles. He was expert witness on a TENORM radiation case involving Ashland Oil in Martha Kentucky, also various other TENORM cases in Louisiana also settled for large sums. He was also expert witness and advisor to Rosenblatts Solicitors on the UK Atomic Test veteran litigation in the Royal Courts of Justice. He has been active since 2007 in several test veterans' pensions appeals tribunals gaining reversal in every individual case of MoD refusals to pay war service pensions in respect of diseases linked to radiation exposure at the test sites. He testified in 2009 before a coroner's jury in the case of the death of Gulf veteran Stuart Dyson arguing that Dyson probably died of cancer due to his exposure to Depleted Uranium in the Persian Gulf. Despite opposition from the MoD the jury unanimously agreed that the uranium exposure was the probable cause of death. Between 2009 and 2016 he has been active as an expert witness and legal representative in Pensions Appeals Tribunal cases in the UK Royal Courts of Justice. In June 2016 he organised the prosecution case and acted as legal representative over 3 weeks for British nuclear test veterans in the High Court before Judge Sir Nicholas Blake. The Decision went against the appellants but is being appealed. A sample list and brief description of some court cases in which Dr Busby has been retained as an expert witness is given below.

# Dr Chris Busby Court cases as expert witness

Case and	Court	Year	Details (expertise)	Result
1. R vs Hipperson et al (Charlton)	Newbury Crown Court	1998	Criminal Damage Atomic Weapons Establishment Aldermaston (radiation health effects)	Acquitted
2. R vs Helen John	Middlesex Crown Court	1999	Criminal Damage House of Commons London (uranium health effects)	Acquitted
3. Sellafield Irish Litigation (McGuill, Herr, Irish State)	Dublin High Court	1999- 2001	Case against Sellafield THORP reprocessing plant (epidemiology, radiation effects, Irish Sea)	Case withdrawn in 2008
4. Millstone Reactor Public Enquiry	Connecticut State Court	2001	Opposition to relicensing of Millstone Reactor (Radiation health effects and sea dispersion)	Failed
5. Fatmir Mata (Wilson, Berry)	Immigration Appeal Court	2001- 2003	Human Rights immigration appeals Kosovo (uranium health effects)	Failed
6. Lela Pelumb (Wilson & Co, Hanley)	Immigration appeal court	2001	Depleted Uranium Kosovo (uranium health effects)	Failed
7. Ladrim Spata (Clore and Co, Hirsch)	Immigration appeal court HX 06027	2001	Depleted Uranium Kosovo (uranium health effects)	Failed
8. Shaquiri, Zogu, Malo, Deda and Hidri vs. Secretary of State Home Office (Henwood)	Immigration appeal court	2002	Depleted Uranium Kosovo (uranium health effects)	Failed
9. Hadjarmata vs Sec.State Home Office (Wesley, Gryk, Amador)	Immigration appeal court	2002	Depleted Uranium Kosovo (uranium health effects)	Failed
10. Mr and Mrs Ardian Kuci vs Sec.State Home Office	Immigration appeal court	2002	Depleted Uranium Kosovo (uranium health effects)	Failed
11. Gerald	Pensions	2002	A-Bomb Test Veteran	appeal

Adshead vs Ministry of Defence	appeals court		cancer (epidemiology, radiation health effects)	allowed
12. R.vs Margaret Jones and Erika Wilson (Alan Harris)	Plymouth Crown Court	2002	Criminal Damage Nuclear Submarine base Plymouth (radiation and health)	Acquitted
13. Richard David vs. Honeywell Normalair Garratt	High Court of Justice, Queens Bench Division HQ04X03185	2004- 2005	Uranium contamination and health; contaminated via aero engines filters from high altitude (Epidemiology, radiation and health)	Case collapsed just before hearing for illness of litigant
14. Lee Dell Craft Snr vs Intracoastal Tubular ITCO (Stuart Smith)	New Orleans	2005-	Cancer following exposure to NORM (Epidemiology, radiation and health)	Settled by defendants Large sum
15 Barbara Castell vs Intracoastal Tubular ITCO CDC No 2002- 12334 Dv A section 5. (Stuart Smith)	New Orleans	2005-	Cancer following exposure to NORM (Epidemiology, radiation and health)	Settled by defendants
16 Ursula Bulot et al vs Exxon Mobil Corp and others (Stuart Smith)	New Orleans	2005-	Cancer following exposure to NORM (Epidemiology, radiation effects)	Settled by defendants
17 James Bailey & Ors vs Exxon Mobil Corp and others (Stuart Smith)	New Orleans	2005-	Cancer following exposure to NORM (Epidemiology, radiation effects)	Settled by defendants
18 Zachary Finestone, Lowe et al vs St Lucie Power and Light (Lytal Reiter, Palm Beach Fla).	Florida USA Case 03- 04040 Cohn/Lynch BUSBY DAUBERT MOTION	2005	Cases of children with cancer near St Lucie Nuclear Power Station. (Epidemiology, radiation dispersion modelling and health effects)	Case eventually dismissed
19 R.vs Pritchard and Olditch (Bindmann and partners)	Bristol Crown Court	2005-6	Criminal Damage to US bombers 2003 (uranium and health) (famous case)	Acquitted

20 R vs RV	Bristol	2005-6	Criminal Damaga to US	Agguitted
Jones and	Crown Court	2003-0	Criminal Damage to US bombers (uranium	Acquitted
Milling	Crown Court		`	after appeal to Lords
_			weapons)	to Loius
(Charlton)	D '	2007	(famous case)	A 1
21 Brian Gay vs	Pensions	2007	A-Bomb Test veteran	Appeal
Ministry of	Appeals		Maralinga; was his	successful
Defence	Court		kidney cancer caused by	
			radiation?	
			(Epidemiology, radiation	
22 C' 1 M	T A 1	2007	and health)	0 41 11
22 Cindy Mays	Los Angeles	2007	Did radiation releases	Settled by
and others vs	USA		from the Rocketdyne	defendants
Boeing			SSFL cause	Large sum
Rocketdyne			retinoblastoma in 9 Los	
Corp			Angeles children?	
(Suzelle Smith)			Epidemiology, radiation	
			dispersion modelling and	
22 D :	т	2000	health effects).	
23 Bonnie	Lawrence	2008	Contamination of	Case
Anderson et al	Circuit Court		property by oilfield	dismissed
vs Ashland Oil	Kentucky		NORM (Epidemiology,	Appeal
(K. Mathis et al)	USA		radiation and health)	failed
	BUSBY			
	DAUBERT			
24 A D 1	MOTION	2000	C 1:11 : A	1 St 1
24. A-Bomb	Royal Courts	2009-	Cancer and illness in A-	1 <sup>st</sup> round
Test veterans vs	of Justice,	10	Bomb Test veterans'	success, but
I TITZ N # : : - 4 C	T 1			
UK Ministry of	London		pensions appeals	lost on
Defence	London		(Epidemiology, radiation	lost on MoD
Defence (Rosenblatts)		2000	(Epidemiology, radiation and health)	lost on MoD appeal
Defence (Rosenblatts) 25 Various vs	London Houston TX	2009-	(Epidemiology, radiation and health)  Measuring gamma and	lost on MoD appeal Settled for
Defence (Rosenblatts) 25 Various vs Exxon Mobil		2009- 10	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM	lost on MoD appeal
Defence (Rosenblatts) 25 Various vs Exxon Mobil Corp			(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for	lost on MoD appeal Settled for
Defence (Rosenblatts) 25 Various vs Exxon Mobil Corp (Gordon)	Houston TX	10	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case	lost on MoD appeal Settled for large sum
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton	Houston TX Pensions		(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia	lost on MoD appeal Settled for
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of	Houston TX  Pensions Appeals	10	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera	lost on MoD appeal Settled for large sum
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence	Houston TX  Pensions Appeals Court	10	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia	lost on MoD appeal Settled for large sum
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence (Derek Heaps)	Houston TX  Pensions Appeals Court Birmingham	2009	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera  Died	lost on MoD appeal Settled for large sum
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence (Derek Heaps)  27 Etienne	Pensions Appeals Court Birmingham New Orleans	2009	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera  Died  NORM radiation and	lost on MoD appeal Settled for large sum See below
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence (Derek Heaps)  27 Etienne Pellegal vs	Pensions Appeals Court Birmingham New Orleans No 2006-	2009	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera  Died	lost on MoD appeal Settled for large sum
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence (Derek Heaps)  27 Etienne Pellegal vs Lincoln Electric	Pensions Appeals Court Birmingham New Orleans No 2006- 003684 Sec 6	2009	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera  Died  NORM radiation and	lost on MoD appeal Settled for large sum See below
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence (Derek Heaps)  27 Etienne Pellegal vs Lincoln Electric Co	Pensions Appeals Court Birmingham New Orleans No 2006-	2009	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera  Died  NORM radiation and	lost on MoD appeal Settled for large sum See below
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence (Derek Heaps)  27 Etienne Pellegal vs Lincoln Electric Co (Garrison)	Pensions Appeals Court Birmingham New Orleans No 2006- 003684 Sec 6 Div L	2009 2009- 10	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera  Died  NORM radiation and laryngeal cancer	lost on MoD appeal Settled for large sum See below Settled by defendants
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence (Derek Heaps)  27 Etienne Pellegal vs Lincoln Electric Co (Garrison)  28 Stuart Dyson	Pensions Appeals Court Birmingham New Orleans No 2006- 003684 Sec 6 Div L Coroner's	2009	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera  Died  NORM radiation and laryngeal cancer	lost on MoD appeal Settled for large sum See below Settled by defendants
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence (Derek Heaps)  27 Etienne Pellegal vs Lincoln Electric Co (Garrison)  28 Stuart Dyson dec. vs MoD	Pensions Appeals Court Birmingham New Orleans No 2006- 003684 Sec 6 Div L  Coroner's Court Black	2009 2009- 10	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera  Died  NORM radiation and laryngeal cancer	lost on MoD appeal Settled for large sum  See below  Settled by defendants  Jury found cause of
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence (Derek Heaps)  27 Etienne Pellegal vs Lincoln Electric Co (Garrison)  28 Stuart Dyson dec. vs MoD HMCoroner,	Pensions Appeals Court Birmingham New Orleans No 2006- 003684 Sec 6 Div L  Coroner's Court Black Country	2009 2009- 10	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera  Died  NORM radiation and laryngeal cancer  Cause of Death; did depleted Uranium cause cancer. Big case, reported	lost on MoD appeal Settled for large sum  See below  Settled by defendants  Jury found cause of death
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence (Derek Heaps)  27 Etienne Pellegal vs Lincoln Electric Co (Garrison)  28 Stuart Dyson dec. vs MoD HMCoroner, Balmain)	Pensions Appeals Court Birmingham New Orleans No 2006- 003684 Sec 6 Div L  Coroner's Court Black Country Jury	2009 2009- 10 2009	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera  Died  NORM radiation and laryngeal cancer  Cause of Death; did depleted Uranium cause cancer. Big case, reported everywhere	lost on MoD appeal Settled for large sum  See below  Settled by defendants  Jury found cause of death uranium
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence (Derek Heaps)  27 Etienne Pellegal vs Lincoln Electric Co (Garrison)  28 Stuart Dyson dec. vs MoD HMCoroner, Balmain)  29 Colin	Pensions Appeals Court Birmingham New Orleans No 2006- 003684 Sec 6 Div L  Coroner's Court Black Country Jury Pensions	2009 2009- 10	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera  Died  NORM radiation and laryngeal cancer  Cause of Death; did depleted Uranium cause cancer. Big case, reported everywhere  Exposure to fallout in A-	lost on MoD appeal Settled for large sum  See below  Settled by defendants  Jury found cause of death uranium Appeal
Defence (Rosenblatts)  25 Various vs Exxon Mobil Corp (Gordon)  26 Derek Hatton Vs Ministry of Defence (Derek Heaps)  27 Etienne Pellegal vs Lincoln Electric Co (Garrison)  28 Stuart Dyson dec. vs MoD HMCoroner, Balmain)	Pensions Appeals Court Birmingham New Orleans No 2006- 003684 Sec 6 Div L  Coroner's Court Black Country Jury	2009 2009- 10 2009	(Epidemiology, radiation and health)  Measuring gamma and advising on NORM contamination for potential case  Cancer and polycythemia rubra vera  Died  NORM radiation and laryngeal cancer  Cause of Death; did depleted Uranium cause cancer. Big case, reported everywhere	lost on MoD appeal Settled for large sum  See below  Settled by defendants  Jury found cause of death uranium

Defence				
30 Lowell	Los Alamos	2010	Exposure to radioactivity	Case
Ryman vs	USA	2010	from Los Alamos and	withdrawn
Regents of			Malignant Myeloma	by attorney
University of			Wangilan Wyelena	by attorney
California				
(Howell)				
31 Michael	New Orleans	2009	Exposure to radon and	(settled by
Nase vs Teco	USA	2007	radiation and lymphoma	defendant)
Energy	CSII		radiation and Tymphoma	derendant)
(Stuart Smith)				
32 Dawn	Pensions	2010	A-Bomb Test veteran	successful
Pritchard vs	Appeals	2010	widow. (Radiation and	appeal;
Ministry of	Court		health)	remitted to
Defence	Court		neartii)	First Tier
33 L Abdale vs	Pensions	2010	A-Bomb Test veteran	successful
Ministry of	Appeals	2010	appeal (Radiation and	appeal;
Defence	Court		health)	remitted to
(Royal British	ENT 00328		neartii)	First Tier
Legion)	2010			That Ther
34 D Battersby	Pensions	2010	A-Bomb Test veteran	successful
vs Ministry of	Appeals	2010	appeal (Radiation and	appeal;
Defence	Court		health)	remitted to
(Royal British	ENT 00176		ileanii)	First Tier
Legion)	LIVI 00170			DB died
35 D Beeton vs	Pensions	2010	A-Bomb Test veteran	successful
Ministry of	Appeals	2010	appeal (Radiation and	appeal;
Defence	Court		health)	remitted to
(Royal British	ENT 00129			First Tier
Legion)	21(1 0012)			Thist Tier
36 T VButler vs	Pensions	2010	A-Bomb Test veteran	successful
Ministry of	Appeals	2010	appeal (Radiation and	appeal;
Defence	Court		health)	remitted to
(Royal British	ENT 00078			First Tier
Legion)				
37 D Hatton vs	Pensions	2010	A-Bomb Test veteran	successful
Ministry of	Appeals		appeal (Radiation and	appeal;
Defence	Court		health)	remitted to
(Royal British			,	First Tier
Legion)				
38 NC Hughes	Pensions	2010	A-Bomb Test veteran	successful
dec vs Ministry	Appeals		appeal (Radiation and	appeal;
of Defence	Court		health)	remitted to
(Royal British	ENT00065		,	First Tier
Legion)				
39 B Lovatt vs	Pensions	2010	A-Bomb Test veteran	successful
Ministry of	Appeals		appeal (Radiation and	appeal;
Defence	Court		health)	remitted to
(Royal British	ENT 00279		,	First Tier
Legion)				
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40 D Pritchard vs Ministry of Defence (Royal British Legion) 41 L Selby vs Ministry of Defence (Royal British	Pensions Appeals Court ENT 00039  Pensions Appeals Court ENT 00658	2010	A-Bomb Test veteran appeal (Radiation and health)  A-Bomb Test veteran appeal (Radiation and health)	successful appeal; remitted to First Tier (DP died) successful appeal; remitted to First Tier
Legion) 42 Denis Shaw vs Ministry of Defence (Royal British Legion)	Pensions Appeals Court ENT 00054	2010	A-Bomb Test veteran appeal (Radiation and health)	successful appeal; remitted to First Tier
43 N Simons vs Ministry of Defence (Royal British Legion)	Pensions Appeals Court ENT 00006	2010	A-Bomb Test veteran appeal (Radiation and health)	Allowed
44 H Sinfield vs Ministry of Defence (Rosenblatts)	Pensions Appeals Court ENT 00751	2010	A-Bomb Test veteran appeal (Radiation and health)	successful appeal; remitted to First Tier
45 B Smith dec. vs Ministry of Defence (Rosenblatts)	Pensions Appeals Court ENT 00680	2010	A-Bomb Test veteran appeal	successful appeal; remitted to First Tier
46 Mrs A Smith vs Ministry of Defence (Rosenblatts)	Pensions Appeals Court ENT	2010	A-Bomb Test veteran appeal (Radiation and health)	successful appeal; remitted to First Tier
47 D Taylor vs Ministry of Defence (Chris Francis RAFA)	Pensions Appeals Court ENT 00912	2010	A-Bomb Test veteran appeal (Radiation and health)	successful appeal; remitted to First Tier
48 Mrs W Triggs vs Ministry of Defence (Royal British Legion)	Pensions Appeals Court ENT 00285	2010	A-Bomb Test veteran appeal (Radiation and health)	successful appeal; remitted to First Tier
49 Mrs M Williams vs Ministry of Defence (Royal British Legion)	Pensions Appeals Court ENT 00768	2010	A-Bomb Test veteran appeal (Radiation and health)	Allowed
50 Kingscliffe	Public	2010	Effects of radioactive	Dismissed

Waste Watchers vs Augean Ltd	Enquiry		waste on health (radiation and radioactivity dispersion, exposure and health).	by Planning Inspector
51 Benoit et al vs Brown and Root Smith Stag LLC	New Orleans	2010	Environmental contamination and health effects of NORM	Settled successfully
51 Broussard heirs vs Texaco Smith Stag LLC	New Orleans	2012	Environmental contamination by NORM	Settled successfully
52 Lindy Norton and others vs Eskom Holdings	Pretoria High Court, South Africa	2012	Health effects of high voltage power lines	Ongoing
53 Debra Dawson vs Boeing (Howarth Smith)	Los Angeles	2012	Downwinder cancer SSFL	Ongoing
54 Mark Brett v Secretary of State Gulf War Veterans' Assoc.	Belfast	2013	Pensions Appeals Lymphoma and Iraq Depleted Uranium	Failed
55 Don Battersby and Anna Smith v Ministry of Defence	Royal Courts of Justice	2013/14	Pensions Appeal to Upper Tier against Decision in Lower Tier	Successful Appeal; remitted for new hearings*
56 Joan Hunter Lehmann vs. Boeing	Los Angeles	2014	Downwinder cancer SSFL	Abandoned by litigant
57. Dwayne Chauvin et al vs. Exxon et al ( Smith Stag LLC and others)	New Orleans Daubert Motion (not pursued)	2014	Radium exposure and cancer	Settled successfully
58. Tuboscope workers vs. Exxon/ Chevron et al (Smith Stag LLC Falcon Law firm)	New Orleans	2014	Radium exposure and cancer. Oil Pipe workers	Settled successfully
59. LIBFRE vs. Long Island Power Utilities	New York	2014	High Voltage Power Lines	Successful
60. Jason Bowser vs. Ministry of Defence	Liverpool	2014	Leukemia in DU Iraq veteran	Abandoned by lawyer

(Hampson Hughes)				
61. John Forbes (widow) vs. Ministry of Defence	Edinburgh	2013/4	Pensions Appeals; cancer in nuclear submarine technician	Unknown
62 John Carter vs Chevron, et al (Smith Stag LLC)	New Orleans Daubert Motion (not pursued)	2015	Radium exposure. Multiple Myeloma, Colon Cancer	Settled successfully July 2105
63. J Mahoney vs. Australian Pensions Appeals (With David Douglas	Australia	2015	Colon cancer death in Australian veteran who worked at Hiroshima in the ruins.	Successful
64 Woods et al vs Exxon et al Henry Dart	Harvey Lousiana	2015	Leukemia and multiple myeloma, Radium	Settled successfully October 2015
65 Class Action Busan Korea vs. Korean nuclear utility Lawyer Kim, Lawyer Byun Seoul	Busan Korea	2015	Thyroid Cancer near Kori nuclear plant	On-going
66 Abdale and others; Battersby and Smith vs. Secretary of State for Defence*	Royal Courts of Justice, London	2015- 2016	Nuclear test veterans	Failed. Under appeal to Upper Tier.
67 Radioactive contamination West Lake Landfill St Louis MO, USA S.Smith	St Louis MO	2016	Cancer and exposures to historic Uranium contamination	On going
68 Lawson vs. General Electric Company, California/ Idaho. Bonner Law firm	Boise Idaho/ California	2017	Radiation brain damage in nuclear power station welder.	Lost. Suing the wrong plaintiff. Survived Daubert.
69 Lindsey R Cooper and ors. vs TEPCO	San Diego	2017	Cancer and other illnesses in sailors on board USS Ronald	On going

Bonner/ Garner/			Reagan and ships at	
Edward law			Fukushima	
firms				
70 Smith	St Louis	2017	West Lake Landfill	On going
Cooper and ors./				
Hausman				
71 Doris Butler	London	2018	Nuclear Test Veteran.	On going.
vs. Secretary of			Pancreatic cancer	
State for			Uranium exposure.	
Defense				
72 Local class	Metropolis	2018	Uranium contamination	On going
action vs.	Illinois			
Honeywell				

In eight of the above cases, Dr Busby was deposed by defence attorneys with a view to having his status as an expert witness disallowed by the trial judges under the rules of *Daubert vs Merrel Dow Pharmaceuticals* whereby the judges have conferred on them the power to decide whether an expert witness is expert in the area of expertise being claimed and to disallow his or her testimony if not. In all cases, in the State of Florida and in the State of Kentucky the Daubert motions were unsuccessful. In the Broussard case the Daubert Motion was successful only in that the judge declared a view (the judge was a replacement circuit judge) but when the attorneys appealed the decision the case was immediately settled. The judge failed to sign the Daubert decision so it cannot be appealed and is not binding. This matter emerged in the Chauvin case (57 above).

\* In the Battersby/Smith appeal the judge ruled that Busby could not give evidence in a re-constituted First Tier because he is an "activist". This decision is not legally valid since it is a finding of fact and the judge's Direction was subject of a Judicial Review application. This was never decided as it never came before a judicial panel because it was rejected by the Table Judge. The case was directed and finally heard over 3 weeks in London from June 13<sup>th</sup> with Busby acting as Representative and presenting evidence through ECRR expert witnesses. Busby is now representing a new case in the test veteran appeals, that of Trevor Butler who witnessed 4 tests at Christmas Island died from pancreatic cancer.

## 1.6 EXPERT ADVICE

In addition to the above Dr Busby has been invited or commissioned (paid) to provide expert evidence on the health effects of low doses of ionising radiation, or exposure to uranium for and to, amongst others:

The UK Royal Society Committee on Depleted Uranium

The UK Committee Examining Radiation Risk from Internal Emitters

The UK Committee on Radioactive Waste Management

The US Congressional Committee on Veterans Affairs and Security in the UK House of Lords (Depleted Uranium)

The Canadian Parliament

The Greens in the European Parliament

The UK Environment Minister Michael Meacher MP

The Federal German Agricultural Laboratory, Brauschweig

The EU Policy Information Network on Child Health and Environment, Arnhem, Netherlands

The British Nuclear Test Veterans Association

The UK House of Commons Cross Party Committee on A-Bomb Test Veterans (John Barron MP, Neil Gibson MP)

The United Nations (UNIDIR) Geneva

The United Nations UNHCR Geneva

The World Health Organisation/ Physicians of Chernobyl (Kiev)

The Government of Belarus

The Green Party of England and Wales

SAFEGROUNDS (Nuclear Industry Organisation for waste disposal discussions)

The British Nuclear Energy Society

The British Nuclear Test Veterans Association

The Royal British Legion

The New Zealand Royal Society

The Korean Parliament

Various national and supra-national groups have sought advice from or appointed Dr Busby as an advisor on various issues e.g.

Green Group European Parliament; Radiation and Health (Caroline Lucas MEP,

Michele Rivasi MEP)

Canadian Government: Uranium and Health (appointed by Alex Atamenenko MCP, British Columbia)

UK Committee on Radioactive Waste Management (invited by Prof Gordon McKerron)

Royal Society Committee on Health Effects of Depleted Uranium Weapons (invited by Prof. Brian Spratt)

US Congressional Committee on Veterans Affairs and Security (Uranium weapons) (invited by Senator Christopher Shays)

UNIDIR Geneva (United Nations Institute for Disarmament Research) (Kirstin Vignard)

**Brussels Tribunal** 

Perdana International Peace Foundation

# 1.7 RESEARCH INTERESTS and AREAS OF WORK

#### Early research

Dr Busby's early research was in the Physical Chemistry aspects of molecular pharmacology at the Wellcome Research Laboratories in Beckenham, Kent. This involved the use of spectroscopic and thermodynamic methods for examining cellcell and cell drug interactions at the molecular level. He was in charge of the thermodynamic dilute solution and high energy spectroscopic section of the Physical Chemistry Department. For a year he began a research degree at Queen Mary College London in Nuclear Magnetic Resonance on molecular conformational changes on protonation but following a dispute with his supervisor he left to return to Wellcome and resume his drug interaction research. From there he moved to developing descriptions of intercellular and intracellular communication mechanisms, a subject which he is still engaged in researching in the laboratory. He

has just (Dec 2015) published a book outlining his conclusions regarding the origin of life and its operational mechanism.

Chris Busby spent seven years at the Wellcome Foundation, where he conducted research in physical chemistry and pharmacology. He subsequently moved to the University of Kent at Canterbury where he studied Laser Raman Spectro-electrochemistry in collaboration with Shell Research Thornton and later as SRC Research Fellow, a project which resulted in a PhD in Chemical Physics. He developed and published theoretical and experimental details of silver and gold electrodes with surface array properties which enable acquisition of laser Raman spectra of adsorbed molecules in dilute solution. He developed the mathematical concept of surface array resonance which he published in the journal *Surface Science* and which has implications for mobile phone frequency electromagnetic fields and human health.

# **Radiation biology**

In the late 1980s, following Chernobyl, he became interested in the mechanisms of low dose internal radiation and developed the Second Event Theory, which distinguishes between the hazards of external and internal radiation exposure. His initial paper was rejected by the International Journal of Radiation Biology but ironically later the same journal accepted a paper by the Director of the National Radiological Protection Board attacking Busby's unpublished idea. The Second Event Theory was ultimately published in the proceedings of a radiation conference in Muenster organised by the German Society for Radioprotection. Apart from the Second Event Theory, Busby has written about dose response functions, local dose to DNA and photoelectron amplification by internal radionuclides. His area of interest is the failure of conventional dosimetry to incorporate high local internal doses to DNA resulting from nuclide affinity for DNA and anisotropy of energy dispersion from a range of causes including: particles, photoelectrons, second event effects, transmutation, dose squared effects etc. He has raised these issues in many presentations and publications and in two UK government committees. He was recently (2012) invited to provide an overview of these concerns in a peer reviewed book on DNA damage which has been published. His main concerns have been for failures to realise the enormously high radiation effects on health of molecular Uranium and Strontium-90 and Uranium and Plutonium particles.

#### **Epidemiology**

Busby began in 1992 by examining differences in standardised cancer rates in two areas which had been differentially contaminated by the 1960s nuclear test fallout, Wales and England. Using national data he showed that there was a cancer risk effect in Wales due to the higher measured level of contamination exposures to the fallout, a result that he published in two books and in a letter to the British Medical Journal in 1994. In 1995 he was funded by the Joseph Rowntree Charitable Trust to develop his arguments and write 'Wings of Death: Nuclear Pollution and Human Health', an account of the results of his research into radiation and cancer and also into cancer increases in Wales, which he argued were a result of global weapons

fallout exposure. In 1997 he became the UK representative of the European Committee on Radiation Risk.

From 1997-2000 he was funded by the Irish Government to carry out research into cancer incidence and proximity to the Irish Sea coast. He organised a very large small area epidemiological study of cancer and leukemia (1974 to 1989) in the population of north and mid Wales. The Data Base was that of the official Wales Cancer Registry. Results showed a highly significant 30% excess risk on the 1km coastal strip, a sea coast effect which the group also found in the Republic of Ireland on the Irish Sea east coast but not on the West coast. The Wales Cancer Registry which supplied the data was immediately closed down and the data removed from the Welsh Office computer. These results were then attacked by a new Wales Cancer Intelligence Unit which took over from the Wales Cancer Registry and altered the historic (published) database. Later with the help of Welsh Television, Busby obtained childhood cancer and leukemia data for the small communities near the Sellafield-contaminated north Wales coast and demonstrated a 18-fold excess risk of brain tumours and leukemia in children aged 0-4 whose identities were known, living in the coastal towns. He has blamed these effects on coastal sediment contamination from Chernobyl and from Sellafield and the inhalation of sea-to-land transfer resuspended sediment containing Uranium and Plutonium. He was funded by the Joseph Rowntree Charitable Trust to write these results into a second book Wolves of Water which was published in 2007.

Based on his findings in the Irish Sea coastal communities, Busby later joined with other scientists at the Karolinska Institute in Sweden and at the Riga Technical University and others to begin to look at cancer rates in coastal communities bordering the radioactively contaminated Baltic Sea. The group's application for funding was turned down by the European Commission but initial work has suggested a similar effect on breast cancer in Sweden.

In June 2000 he was invited to present evidence to the Royal Society committee on Depleted Uranium and health, and shortly after this was invited to Iraq to measure DU in the country and relate exposure to health effects which followed the Gulf War. In 2001 he was asked to visit Kosovo as part of a Nippon TV team to investigate the dispersion of DU using field monitoring equipment. He discovered DU in many areas from analytical measurements made on samples he collected (paid for by the BBC) he showed that there was atmospheric resuspension of DU particles. He was invited to report his findings to the Royal Society Committee on Depleted Uranium. Following his evidence to the Royal Society on the effects of Depleted Uranium, he was appointed to the UK Ministry of Defence Committee on Depleted Uranium in 2001. He was invited to address the US Congressional Committee on Veterans' Affairs on the Health effects of Depleted Uranium in 2002.

In 1998-2001 he co-supervised a PhD student at Liverpool University in the epidemiological examination of cancer rates by age, developing a novel epidemiological metric for the assessment of the variation in age of development of site specific cancer in human populations. The PhD was awarded and the methodology published.

In 2000 Busby analysed the rates of infant leukemia after Chernobyl in several countries and employed the results to show that the ICRP risk model was in error by a factor of 400-fold in the prediction or explanation of the findings. He was invited to Kiev to present these results at the World Health Organisation conference in 2000. Later in 2009 he published a further meta-analysis of the infant leukemias using data that was obtained through the CERRIE committee. These findings formally and unequivocally falsify the current ICRP radiation risk model.

Dr Busby has carried out a number of other epidemiological studies. He developed in 2000 a cross sectional case-control cohort method for assessing cancer risk in communities and has studied populations local to five nuclear sites in the UK, Hinkley Point, Bradwell, Trawsfynydd, Wylfa and Plymouth Dockyard. Results have been presented in peer reviewed papers and books and in three television documentaries

Busby also has made and published several small area mortality studies of populations near nuclear sites in the UK, specifically Hinkley Point, Bradwell, Wylfa, Aldermaston and Harwell (published in the British Medical Journal 1998). In general the results have shown the excess risk of breast cancer in those living near coastal nuclear sites. These received considerable media attention.

In 2006 and 2007 he carried out two epidemiological questionnaire survey studies of British ex-Servicemen. The first looked at health effects in the veterans of the human experiments at Porton Down, Wiltshire. The method involved piloting a novel method for obtaining controls and was therefore able for the first time to assess risk for diseases for which there were no national background rates. Results showed significant health consequences of the exposures at Porton Down. The method was next employed to examine the health of the children of the veterans of the UK Atmospheric nuclear tests. Results showed that the children and grandchildren both had respectively highly significant 9 and 8-fold excess congenital illnesses both relative to controls and to national rates. Results were presented at the House of Commons in 2008. Both of the above studies have recently been submitted for publication.

In 2009 he worked with Dr Samira Alaani and other Iraqis in Fallujah Iraq and applied the epidemiological questionnaire method he piloted in Ireland and at the nuclear sites. They found a highly significant excess of cancer and congenital malformation rates in the period following the US-led attack on the city in 2004. These studies he followed up with two hospital studies in Fallujah which confirmed the high rates of congenital birth defects that drove the infant mortality excess. In 2010 he carried out with the Fallujah group a study of metal contamination in the hair of the parents of the children with birth defects which showed that the cause was exposure to slightly enriched Uranium which the group assumed was from a novel weapon system.

In 2015 he was invited to join the Editorial Board of Jacobs Journal of Epidemiology and Preventive Medicine. He wrote the Editorial in the First Issue where he reviewed the problems of radiation epidemiology and proposed that the study of adult cancer near nuclear sites might be more informative than child leukemia studies. In the same issue he presented two of his studies of adult cancer near nuclear sites in the UK, identifying breast cancer as the best indicator of harm from radioactive discharges.

#### **Radiation protection**

He is a founder member of and is presently also the Scientific Secretary of the European Committee on Radiation Risk (ECRR) begun in Brussels in 1998 and was commissioned in 1999 to organise the preparation of the new risk model on radiation exposure, work which led to the ECRR Risk Model and the publication of ECRR 2003: *The Health Effects of Exposure to low Doses of Ionizing Radiation*, published in January 2003. This was translated into and published in French, Russian, Japanese and Spanish. This work he updated in 2010 with a chapter on Uranium, and presenting evidence of the success of the 2003 model in explaining increases in cancer near nuclear sites and also increases in cancer in Sweden after Chernobyl. In May 2009, with the University of the Aegean, he organised an International Conference on the Greek Island of Lesvos attended by eminent radiation scientists from all over the world. The final statement from this conference *The Lesvos Declaration* called for the abandonment of the current (ICRP) radiation risk models which all the delegates agreed was insecure for its purpose of protecting human health from radiation exposures.

His work and expertise in the field of environmental health and radioactivity was recognised by his appointment in 2001 to CERRIE a UK Government committee reporting on the effects of internal radiation on health (<a href="www.cerrie.org">www.cerrie.org</a>) and in 2002 to the Ministry of Defence Depleted Uranium Oversight Board DUOB (<a href="www.duob.org">www.duob.org</a>). CERRIE was wound up in 2004 after the Environment Minister who had sponsored the committee was sacked from Blair's government. After the CERRIE members were threatened with legal action if they allowed the final report to include Busby's evidence, in 2004, he (jointly with two other colleagues) published the *Minority Report of the CERRIE committee* (Sosiumi Press) which was supported and introduced by Environment Minister the Rt Hon. Michael Meacher MP. The same mistake was not repeated in the final report of the Depleted Uranium Board DUOB which Busby contributed a separate section of analysis to.

In 2006 he produced and jointly edited with Prof. Alexey Yablokov of the Russian Academy of Sciences *ECRR2006 Chernobyl 20 Years On*. A second edition was produced in 2009.

#### **Science and Policy**

Dr Busby was the national speaker on Science and Technology for the Green Party of England and Wales for many years.

He developed an interest in the transposition of Science into Policy and published in 2000, with Dr Molly Scott Cato and Mr Richard Bramhall, a small book presenting the results of their social research into the scientific knowledge-base of politicians in the UK *I don't know much about Science* (Green Audit 2000). The report questioned the levels of bias in scientific advice to government, using the BSE/CJD issue as a test. The book concluded that oppositional committees were necessary to obtain the truth in areas of contention involving lobbying. Busby has also made fundamental

contributions in various papers and reports to political aspects of environmental degradation, developing in 2000 the "Planetary Impact Index", a fiscal policy tool for controlling environmental and social harm.

Because of his work in this area, between 2004 and 2006 he was asked to lead the Science and Policy Interface Group of the EU funded Policy Information Network for Child Health and Environment (PINCHE) based in Arnhem, the Netherlands. He organised the discussions and collation of information in this area leading to their final report to the European Commission to which he contributed large sections. He was also Senior Rapporteur for PINCHE on Ionising Radiation and Child Health and also Ultraviolet Radiation and Child Health, producing with his colleague Dr Alecsandra Fucic, the final paper on radiation which was published in *Acta Paediatrica*. The culmination of this project which involved over 40 scientists and physicians from all major EU countries was the recommendation that as a result of bias in scientific advice to policymakers, all advice committees involving areas of dispute and possible harm to the public should be oppositional committees with reports including all sides of any argument.

He was recently (2013) invited to make a presentation in the Russian Academy of Sciences on the issue of the failure of the current radiation risk model to accurately predict or explain radiation effects in living systems.

#### Radiation measurements and laboratory research

Busby set up a laboratory in Wales in 2004 to measure radioactivity in environmental samples, and developed mobile spectrometric detectors to investigate contaminated areas of land. He has been commissioned on several occasions to carry out fieldwork on radionuclide contamination, including in the USA (radium) and the Balkans (Uranium) and Iraq (Uranium). Results of some of these field survey operations have led to success with large case settlements in litigation in the USA

Since 2006 Dr Busby has been conducting laboratory experiments researching photoelectron emission from Uranium and elements of high atomic number. As Visiting Professor, at the Centre of Molecular Biosciences in the University of Ulster he co-supervised research on the enhancement of local dose from high Z atomic number elements. Results of experimental and theoretical calculations confirmed the enhancement of local deposition of tissue-ionising photoelectrons from sub-micron Uranium and Gold particles, work which resulted in a PhD for Andreas Elsaessar. The idea was reported as a major news item in the *New Scientist* in 2009. In 2007 he studied with Saoirse Morgan the dispersion of Uranium after Gulf War 2 using the results of air filter Uranium measurements made at the Atomic Weapons Establishment Aldermaston. The results showed that there was a significant increase in airborne Uranium in the period of the Gulf War, and this finding received widespread media attention.

Dr Busby was invited Japan in June 2011 to advise on the health effects of the Fukushima catastrophe. He has carried out a large number of measurements of radionuclides both on the ground in Japan and in materials from areas near Fukushima as far south as Tokyo and east as Osaka. He was the first to employ vehicle air filters to measure radioactive atmospheric contaminants, developing the methodology

through vehicle filters from war zones from the Balkans through Lebanon to Gaza to Iraq. He has reported levels of radioCaesium and enriched Uranium in air conditioning filters in Tokyo after Fukushima.

#### Non ionising radiation, cell phones

Dr Busby also has an interest in the health effects of non-Ionising radiation and has collaborated with Prof Olle Johansson at the Karolinska Institute Stockholm on this issue. He believes that the health effects are explainable on the basis of 2<sup>nd</sup> order electromagnetic energy transfer to electron tracks from internal ionising radiation. This increases the absorbed dose from background radiation. He carried out preliminary research on this idea in 1998, funded by the Foundation for Children with Leukemia, and also began experimental investigations at the University of Ulster in 2010. In 2015 he carried out experiments on the interaction of non-ionising (RF and low frequency) and ionising radiation (60kVp X-Rays) to examine the possibility of electromagnetic energy borrowing by photoelectrons.

#### Uranium

As a consequence of his research findings, and publications Dr Busby has become associated with expertise on the biological effects of Uranium. He has published extensively in this area and is Chair of the Uranium sub-committee of the European Committee on Radiation Risk, editing the ECRR report on Uranium effects in 2010. He has been a member of the UK Ministry of Defence Depleted Uranium Oversight Board (see above) and also was invited to address the UK Royal Society on the issue of DU. He also has been invited to make presentations on his research on Uranium to a number of organisations including the US Congressional Committee on Veterans Affairs, the Canadian Parliament, The New Zealand Royal Society, The United Nations, and the European Parliament. In 2008 he was appointed Guest Researcher at the German Federal Government Julius Kuhn Institute in Braunschweig where he co-supervised research on Uranium uptake in plants. He carried out fundamental research on the photoelectron amplification effects of Uranium and Gold at the University of Ulster but left in 2012 when his Department folded due to the retirement of the Professor. He joined Jacobs University of Bremen in the same year and moved to Latvia where he has an office in the Latvian Academy of Sciences in Riga. In 2017 his book on Uranium and Health was published in Germany.

#### Other interests

Busby is also currently engaged in experimental and theoretical development of a novel theory of living systems and their origin. He published a paper in 2017 on the spontaneous origin of life on Earth in which he addressed the issue of the thermodynamic requirements of living systems and how they might have been satisfied in abiogenesis.

# 1.8 MAIN SCIENTIFIC ACHIEVEMENTS; NOTABLE RESEARCH; DISCOVERIES

- 1. True structure of S American arrow poison tubocurarine by NMR [1973]
- 2. Array resonance electromagnetic field enhancement at optical frequencies [1980]
- 3. Weapons test fallout 1959-63 caused cancer epidemic beginning 1980s [1994]
- 4. Second Event Theory [1989-1998]
- 5. Infant leukemia after Chernobyl unequivocally demonstrates failure of ICRP risk model and demonstrates biphasic dose response [2000, 2004 and 2009]
- 6. Sea coast effect on cancer in Irish Sea from radionuclide pollution. [1998-2001]
- 7. Secondary Photoelectron Effect SET for high atomic number elements mainly Uranium and Uranium particles. [2004-2009]
- 8. Uranium particle transport to Aldermaston UK in 2<sup>nd</sup> Gulf War [2007]
- 9. High levels of congenital conditions in UK Atomic Test Veteran children and grandchildren [2007]
- 10. Extremely high cancer and congenital malformation rates in Fallujah Iraq are associated with man-made Uranium in mother's hair. [2010-12]
- 11. Discovery (2014-2015) that the US Radium Studies were unsafe as a support for radiation protection models due to manipulation of the databases, missing individuals and missing causes of death.
- 12. Using Fricke dosimetry he established (2015) that there is no measurable interaction between non ionising radiation magnetic fields (both RF 2.4GHz and power line frequencies to 5uT) in water and ionising radiation induced photoelectrons between 0.5Gy and 5Gy.
- 13. Theory of the mechanism and spontaneous origin of life [2015].
- 14. New theory of memory and dementia causation [2018]

# 1.9 INVITATIONS TO SPEAK.

Year	Place, Subject etc.
1995	Jersey, Channel Islands: International conference on nuclear shipments; Health
	effects of low dose radiation
1995	Oxford Town Hall: Low dose radiation effects
1995	Drogheda, Ireland: Sellafield effects
1996	House of Commons. Symposium on Low Dose Radiation
1997	Strasbourg EU Parliament: Euratom Directive
1997	Brussels, EU Parliament STOA workshop on criticisms of ICRP risk models
1997	Kingston Ontario: World Conference on Breast Cancer: paper on cohort effects
	and weapons fallout

1998	Muenster, Germany, International Conference on Radiation: Second Event effects
1998	Manchester Town Hall, Ethics and Euratom
1999	Copenhagen: Danish Parliament: Euratom Directive and low dose effects
1999	Carlingford, Ireland: Sellafield effects
2000	Kos Island: ASPIS (EC) meeting on 'Is cancer an environmental effect'; low dose radiation and cancer
2000	London: Royal Society: low dose effects and Depleted Uranium
2001	Strasbourg: Green Group; Health effects of Depleted Uranium
2001	Bergen: International Sellafield conference, Sellafield effects on health
2001	Oslo: Nobel Institute: Health effects of low dose radiation and DU
2001	London: Royal Society: Health effects of Depleted Uranium (again)
2001	Kiev: WHO conference on Chernobyl: paper on infant leukaemia
2001	Prague: Res Publica International Conference on Depleted Uranium
2001	Strasbourg: EU Parliament, with UNEP; Health effects of Depleted Uranium
2002	Bergen: Conference on Sellafield
2002	Helsinki: Health effects of low dose radiation
2002	London: House of Lords. US Congressional Committee on National Security:
	Gulf war syndrome and Depleted Uranium
2002	London Greenpeace: Small area statistics and radiation effects
2002	Chilton: Health effects of radioactive waste
2002	Oxford, British Nuclear Energy Society: Effects of low doses of radiation
2002	Royal Society of Physicians: Small area health statistics and radiation
2003	Birmingham: Non ionising radiation. Chaired
2003	Liverpool University: Depleted Uranium and Health
2003	Oxford University: Health Effects of Radiation from Internal Emitters
2003	Munich: Whistleblowers
2003	Copenhagen: Radiation and the foetus
2003	Hamburg: Depleted Uranium
2004	Berlin: Low level radiation
2004	London: PINCHE, child health and environment
2004	London, Westminster: Children with leukaemia
2004	Chicago: Radiation studies
2005	New Zealand Royal Society, Wellington
2005	New Zealand, Auckland University
2005	Chicago: Small area epidemiology by citizen groups
2005	Salzburg, Austria. PLAGE; International Nuclear Law and Human Rights
2005	Stockholm, Swedish Parliament; Low Dose Radiation and Depleted Uranium
2006	ECRR, Charite Hospital, Berlin, Health effects of the Chernobyl Accident
2006	Hiroshima Japan, Depleted Uranium
2007	Kuala Lumpur, Depleted Uranium: War Crimes Tribunal
2007	London, House of Commons: Chernobyl and health; anniversary lecture.
2007	London: Safegrounds Nuclear Industry CIRIA conference; low dose effects
2007	Blackpool: A-Bomb Veterans and low dose radiation effects
2007	University of Ulster: Childhood leukaemia in Ireland and Sellafield
2007	Hanover: Federal Agricultural Laboratories; Uranium chemistry and physics
2007	Geneva: United Nations. Health effects of Uranium weapons
2007	Geneva: United Nations. Chernobyl: WHO and the IAEA

2007	London, House of Commons Select Committee: Nuclear Test Veterans
2007	Children Epidemiology study  Landon Boyel Society: Science Policy Advice and Scientific Dichenesty
2007	London, Royal Society: Science Policy Advice and Scientific Dishonesty
2008	Ljubljana Slovenia: Parliament; Nuclear Energy and Human Health
2008	Malmo Sweden; Uranium and health- new discoveries
2008	Helsinki; Chernobyl effects
2008	Moscow, Russian Academy of Sciences; A new theory of living systems.
2009	Malmo Sweden, Uranium weapons and health
2009	Stockholm Sweden, ICRP, SRM, Errors in radiation risk model
2009	Lesvos Island Greece; Requirements of a Adequate Radiation Risk Model
2009	Academy of Sciences, Riga, Latvia: the ECRR and ICRP radiation risk models
2009	Arusha Tanzania: Health effects of Uranium mining
2009	Dar es Salaam, Tanzania: Health effects of Uranium Mining
2010	Geneva, Human Rights Council, Fallujah uranium effects
2010	Riga Latvia; Environment Ministry; Baltic Sea Radioactivity and Health
2010	Stockholm Sweden; Finlandhuset; Cancer and Birth Defects in Fallujah Iraq
2010	Riga Latvia; Latvian NGOs; Baltic sea radioactivity and the ECRR model
2010	Pretoria South Africa, North West University, Uranium and Health
2011	Tokyo, Fukushima health effects
2011	Fukushima, Aizu Wakamatsu, health effects
2011	Berlin, Fukushima Health effects
2011	Riga, Fukushima
2011	Chepstow UK, Fukushima
2011	Oxford Town Hall, Fukushima
2011	Vilnius University, Lithuania, Scientific Philosophy and radiation risk models
2012	Riga Latvia, Developing a new ideology for human security
2012	Geneva, Independent WHO: Small area epidemiology for citizens
2012	Geneva, Human Rights Council; American Association of Anthropology;
2012	Marshall Islands Nuclear Test effects
2012	Geneva, Human Rights Council; Union of Arab Jurists; Iraq Uranium
2013	Brussels: European Parliament, Official Intervention on EURATOM Basic Safety Standards for Radiation Risk for European Parliament Green Group
2013	Moscow: Russian Academy of Sciences. The failure of the concept of absorbed
	dose for internal exposures.
2015	Birmingham: World Congress on Breast Cancer; Radiogenic Causes
2015	Seoul. National Assembly Korea: Radio-iodine and cancer; Tritium effects.
2015	Riga. Radioactive contamination of the Baltic Sea. Conference on cleaning the Baltic Sea
2015	Royal Swedish Academy of Sciences Stockholm. Nuclear Waste Council.
	Errors in radiation risk modelling for Forsmark waste repository project.
2016	Merton College, Oxford. Explanation of the spontaneous origin of life.
2016	Latvian Academy of Sciences Riga. Abiogenesis: The origin of life
2017	Toxicology and Applied Pharmacology conference. Paris. Absorbed dose and radiochemical risk.
2017	Sweden Nacka Environmental Court Stockholm: Legal challenges to Risk model and Forsmark waste repository.
2017	UK Business, Energy BEIS Conference London: Legal challenges to Risk Model and COMARE failure
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2017	Metropolis Illinois, Uranium contamination from the Paducah Kentucky plant and health.
	and nearm.
2017	St Louis, Missouri. Health effects of the West Lake landfill.

# 2. PUBLICATIONS

# PEER REVIEWED PAPERS.

Busby Christopher (2018) A risk coefficient for radiation-induced dementia. *Advances in Alzheimers Disease*. 7 (2) 13-35, June 2018 DOI: 10.4236/aad.2018.72002

Busby Christopher, Howard Charles Vyvyan (2017) Re-Thinking Biology I—Maxwell's Demon and the spontaneous origin of Life. *Adv. Biol. Chem* 7 (5) 170-181 DOI 10.4236/abc.2017.75012

Busby C (2017) Radiochemical Genotoxicity Risk and Absorbed Dose. *Res Rep Toxi*. Vol.1 No.1:1

Busby C (2017) Radiochemical genotoxicity and absorbed dose. 9th Global Summit on Toxicology and applied Pharmacology. June 22-24 Paris France. Keynote presentation. <a href="http://toxicology.global-summit.com/europe/abstract/2017/radiochemical-genotoxicity-risk-and-absorbed-dose">http://toxicology.global-summit.com/europe/abstract/2017/radiochemical-genotoxicity-risk-and-absorbed-dose</a>

Busby C (2017) Childhood leukemia, atmospheric test fallout and high voltage power distribution lines. *Pediatric Dimensions*. DOI 10.15761/PD.100156

Busby Christopher (2017) Child health and ionizing radiation: Science, Politics and European Law. *Pediatric Dimensions*. 2(3) 1-4 doi:10.15761/PD.1000150

Busby Christopher and Mangano Joseph J (2017) There's a world going on underground—infant mortality and fracking in Pennsylvania. *Journal of Environmental Protection*. 8(4) 2017 doi: 10.4236/jep.2017.84028

Busby Christopher. Letter to the Editor on "The Hiroshima Nagasaki survivor studies. Discrepancies between results and general perception." By Bernard R Jordan. *Genetics*. 2016; 204(4) 1627-1629

Busby Christopher. Is There Evidence of Adverse Health Effects Near US Nuclear Installations? Infant Mortality in Coastal Communities near The Diablo Canyon Nuclear Power Station in California, 1989-2012. *J J Epidemiol Prevent*. 2016, 2(3): 030. <a href="http://epidemiology.jacobspublishers.com/index.php/articles/articles-in-press-epidemiology-and-preventive-medicine">http://epidemiology.jacobspublishers.com/index.php/articles/articles-in-press-epidemiology-and-preventive-medicine</a>

Sacks Bill, Mayerson Gregory, Siegel Jeffrey A (2016) Epidemiology without Biology: False Paradigms, Unfounded Assumptions and Specious Statistics in Radiation Science (with commentaries by Inge Schmitz-Feuerhake and **Christopher Busby**, and a reply by the authors). Biol Theory. 2016; 11: 69–101.

Published online 2016 Jun 17. doi: 10.1007/s13752-016-0244-4 PMCID: PMC4917595

Schmitz-Feuerhake, **Busby C**, Pflugbeil P Genetic Radiation Risks-A Neglected Topic in the Low Dose Debate. Environmental Health and Toxicology. 2016. 31Article ID e2016001. http://dx.doi.org/10.5620/eht.e2016001.

Busby Christopher, de Messieres Mireille and Morgan Saoirse (2015) Infant and perinatal mortality and Stillbirths near Hinkley Point nuclear power station in Somerset, 1993-2005; an epidemiological investigation of causation. *JJ Epidemiol. Prevent.* 2015 1(2) 013

Busby Christopher (2015) Editorial: Uranium Epidemiology. *Jacobs Journal of Epidemiology and Preventive Medicine* 1(2)-009; <a href="http://jacobspublishers.com/index.php/journal-of-epidemiology-articles-in-press">http://jacobspublishers.com/index.php/journal-of-epidemiology-articles-in-press</a>

Busby Christopher (2015) Editorial: Epidemiology and the Effects of Radioactive Contamination: Time for a New Approach. *Jacobs Journal of Epidemiology and Preventive Medicine* 1(1)-02;

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## **ARTICLES**

Dr Busby has published many articles in The Ecologist, Counterpunch and other magazines and journals. He is a contributor to RT Op-edge.

#### **Radioactive Times**

Numerous articles and reports in Radioactive Times: the Journal of the Low level Radiation Campaign

#### **MEDIA**

Busby was invited to join the Russia Today Opinion team in January 2013 when it began. Busby is a correspondent for the Russia Today TV and RT internet Channel and also routinely contributes to:

Sky TV BBCTV ITV Al Jazeera Satellite Channel Al Jazeera English Alex Jones Radio Show Stories on his research have appeared as major features in many major newspapers and magazines including The Guardian, Independent, Times, Sunday Times, Express, Mail, Mirror, New Scientist and many foreign newspapers and magazines including Le Monde. Busby has also regularly been attacked by George Monbiot in his Guardian column and on Monbiot's weblog.

## Russia Today OP-Edge Articles A list can be found at:

https://www.rt.com/op-edge/authors/christopher-busby/

# **INTERNET VIDEO**

Busby and colleagues in Green Audit produce and upload educational video presentations on the health effects of radiation and other issues though <a href="https://www.youtube.com">www.youtube.com</a> and <a href="https://www.youtube.com">www.vimeo.com</a>. Since 2009 Green Audit Films now based in Riga has created video presentations of research and education in the field of radiation and health. The presentations are from the uploads of <a href="https://dreativebsruhealth.com">dradioactivebsruhealth.com</a> are from the uploads of <a href="https://dreativebsruhealth.com">dradioactivebsruhealth.com<

## **INTERNET** issues

Busby operates and/or contributes to a number of websites including:

www.greenaudit.org (carries most of the scientific reports and papers which can be downloaded and refers to many of the video presentations).
www.bsrrw.org (deals with the contamination of the Baltic Sea)
www.llrc.org (Busby is Scientific advisor to the Low Level Radiation Campaign)
www.chrisbusbyexposed.org (which was set up to counter attacks on Busby's scientific credibility made in an anonymous website "junkscience watch—chrisbusbyexposed" and websites operated by the nuclear industry such as
www.nuclearpoweryesplease.org and www.rationalwiki.org.
Busby's listing in Wikipedia is an on-going battleground
Information on the European Committee on Radiation Risk may be found at
www.euradcom.org

#### A selection of Green Audit published papers

These can be accessed at <a href="www.greenaudit.org">www.greenaudit.org</a> and include:

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# **BOOK REVIEWS**

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'Animal Pharm' by Mark Purdey (Clairview Books) reviewed for Caduceus in 2008

# PERSONAL (see www.chrisbusbyexposed.org)

Dr Busby has 7 children and 14 grandchildren and lives between the ancient Baltic city of Riga, Latvia and his 65ton, 1903 Dutch Barge *Marius* in France. He has now moved his base in the UK from Aberystwyth to Bideford, Devon in an ancient haunted house that was the birthplace of the Elizabethan hero and adventurer Sir Richard Grenville.

Busby's interests include music and writing and performing songs (he plays guitar, banjo, diatonic accordion, bandoneon, garmoshka, violin, viola, piano and nykleharpa: (see <a href="www.myspace.com/christobusby">www.myspace.com/christobusby</a>), writing poetry, and sailing.