

CURRICULUM VITAE

1.0 PERSONAL DATA:

- **NAME:**
Edwin Richard Galea **BSc, Dip.Ed, Phd, CMath, FIMA, CEng, FIFireE**
- **HOME ADDRESS:**
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Blackheath SE3 9SF
United Kingdom
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- **WEB ADDRESS:**
<http://staffweb.cms.gre.ac.uk/~ge03/>
- **PLACE AND DATE OF BIRTH:**
Melbourne Australia, 07/12/57
- **NATIONALITY:**
Dual Citizenship Australia and UK
- **MARITAL STATUS:**
Married, no children
- **EDUCATION:**
1981-84: The University of Newcastle, NSW, Australia.
PhD in Astrophysics: The Mathematical Modelling of Rotating Magnetic Upper Main Sequence Stars
1976-80: Monash University, Melbourne, Australia
Dip.Ed. and B.Sc.(Hons) in Science, with a double major in mathematics and physics HII(A)
1970-75: St Albans High School, Melbourne, Australia

2.1 CURRENT POSTS:

- CAA Professor of Mathematical Modelling, University of Greenwich, (1992 -)
- Founding Director, Fire Safety Engineering Group, University of Greenwich, (1992 -)
- Vice-Chair International Association of Fire Safety Science (Feb 2014 -)
- Visiting Professor, University of Ghent, Belgium (2008 -)
- Visiting Professor, Western Norway University of Applied Sciences (HVL), Haugesund, Norway, (Nov 2015 -)
- Technical Advisor Clevertronics (Australia) (March 2015 -)
- Associate Editor, *The Aeronautical Journal of the Royal Aeronautical Society* (Nov 2013 -)
- Associate Editor, *Safety Science* (Feb 2017 -)
- Expert to the Grenfell Inquiry (Sept 2017 -)

2.2 PREVIOUS POSTS:

- External Examiner, Trinity College Dublin (June 2013 – Feb 2017)
- Visiting Professor, Institut Supérieur des Matériaux et Mécaniques Avancés (ISMANS), Le Mans, France (2010 - 2016)
- Associate Editor of *Fire Science Reviews* until it merged with another fire journal (2013 –

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- 2017)
- Associate Editor of the *Journal of Fire Protection Engineering* until it merged with another fire journal (2008 – 2013)

3.0 QUALIFICATIONS:

- **DEGREES /DIPLOMAS**

Ph.D. in Astrophysics

Graduated 3rd May 1985

The University of Newcastle

New South Wales, Australia

Area of Research: The Mathematical Modelling of Rotating Magnetic Upper Main Sequence Stars.

Dip.Ed.

Qualified 5th December 1980

Monash University

Victoria. Australia

B.Sc.(HONS) HII(A)

Graduated 11th April 1980

Monash University

Victoria. Australia

- **PROFESSIONAL and LEARNED BODIES**

Vice-Chair, International Association of Fire Safety Science, (Feb 2014 -),

The pre-eminent organisation of fire research in the world

Fellow of the Institute of Mathematics and its Applications, (FIMA)

Chartered Mathematician status (C.Math), 5 April 1994

Fellow of the Institution of Fire Engineers (FIFireE), 1995

Chartered Engineer status (C.Eng), 2003

Member Combustion Institute

Member International Assoc of Fire Safety Science, 1986

Past Member CIB (International Council for Building Research Studies and Documentation)

Past Member International Society of Air Safety Investigators, May 1994

- **SCHOLARSHIPS**

Commonwealth Postgraduate Research Scholarship, 1981 - 1984

Victorian Government Teaching Scholarship, 1977 - 1980

Victorian Secondary School Scholarship, 1971 - 1975

4.0 AWARDS

- In 2019, his research project concerning evacuation from high-rise construction sites won the SFPE (UK Chapter) Best Research Project for 2019 Award.
- In 2018, a publication Prof Galea co-authored, 'Numerical Investigation of the Fatal 1985 Manchester Airport B737 Fire', (paper 95), which appeared in the *Aeronautical Journal* 2017, won the Royal Aeronautical Society's Gold Award for 2017.
- In 2016, Aoife Hunt (doctoral student of Prof Ed Galea), won the Society of Fire Protection Engineers (SFPE) Foundation Awards Student Scholar Award.
<https://www.facebook.com/notes/fire-safety-engineering-group-fseg/fseg-research-into-the-evacuation-of-people-with-reduced-mobility-wins-internati/1369616569720246>
- In 2015 Rob Brown (doctoral student of Prof Ed Galea) and Prof Ed Galea won the Society of Fire Protection Engineers (SFPE) Foundation Awards First Annual Dr. Guylène Proulx, OC, Scholarship.
<http://blog.sfpe.org/2015/05/sfpe-foundation-awards-first-annual-dr-guylene-proulx-oc-scholarship-to-robert-brown/>
- In 2014, a publication Prof Galea co-authored, 'Passenger Response Time Data-Sets for Large Passenger Ferries and Cruise Ships Derived from Sea Trials', (paper 84), which appeared in *The Transactions of the Royal Institution of Naval Architects, International Journal of Maritime Engineering* 2013, won the Royal Institution of Naval Architects Medal of Distinction for 2013.
- In 2014 a project run by Prof Galea concerned with the development of a novel emergency signage system won *The Guardian* University Award for Research Impact. (<http://www.theguardian.com/higher-education-network/2014/feb/18/winner-university-of-greenwich-research-impact>).
- In 2011, a publication Prof Galea co-authored, 'Fire and Evacuation analysis in BWB aircraft configurations: computer simulations and large-scale evacuation experiment', (paper 68), which appeared in the *Aeronautical Journal* 2010, won the Royal Aeronautical Society's Bronze Award for 2010.
- In 2008, a publication Prof Galea co-authored, 'Signage Legibility Distances as a Function of Observation Angle', (paper 55), which appeared in the *Journal of Fire Protection Engineering* 2007, won the SFPE Jack Bono Engineering Communication Award. The Jack Bono Engineering Communication Award is given to the authors of the paper that, during the prior year, has most contributed to the advancement and application of professional fire protection engineering.
- In 2006, a publication Prof Galea co-authored, 'CFD Fire Simulation of the Swissair Flight 111 In-Flight Fire – Part 2: Fire Spread analysis', (papers 51 and 47), which appeared in the *Aeronautical Journal* 2006, won the Royal Aeronautical Society's Gold Award and George Taylor Prize for 2006.
- In 2003, Prof Galea and the EXODUS group were awarded the 2003/2004 European IST prize by the European Council of Applied Sciences, Technology and Engineering (Euro-

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CASE) for their development of the EXODUS suite of software.

- In 2003, a publication Prof Galea co-authored, 'Examining the effect of exit separation on aircraft evacuation performance during 90 second certification trials' (paper 38), which appeared in the *Aeronautical Journal* 2002, won the Hodgson Prize of the Royal Aeronautical Society for best paper.
- In 2003 Prof Galea and the EXODUS group, were awarded the 2002 Queen's Anniversary Prize, with the citation:
"The University is a recognised world leader in the area of evacuation model development. Use of its software technology by businesses and public authorities greatly enhances public safety and its specialised training offers vital expertise to the user community worldwide."
- In 2002 Prof Galea and the EXODUS group were awarded the 2001 RINA/LR Safer Ships Award (Royal Institution of Naval Architects/Lloyds Register).
- In 2002, Prof Galea and the EXODUS group were awarded the 2001 CITIS (Communications & IT in Shipping) Award for Innovation in IT for Ship Operation for the maritimeEXODUS software.
- In 2002, Prof Galea and the EXODUS group were awarded the 2001 British Computer Society award for IT 2001 (the Oscars of the IT industry).
BSC IT Award presentation:
"The winners not only demonstrate technical innovation, but also show how technology can be used to benefit society at large....," Judith Scott, Chief Executive of The BCS
- In addition to winning the IT award, Prof Galea and his team received the gold medal from the British Computer Society.
- In 2001 the UK MOD made the following announcement after analysing the results of an independent survey they commissioned on available evacuation models,
".....maritimeEXODUS was selected as the escape tool that most closely meets the needs of the MOD for the development of warship escape design guidance and assessment."
- In 1999, a publication Prof Galea co-authored, 'The Numerical Simulation of Aircraft Evacuation' (paper 20), which appeared in the *Aeronautical Journal* in 1998, won the Hodgson Prize of the Royal Aeronautical Society for best paper.
- Prof Galea was invited to give the 1998 Howard Emmons Lecture at WPI in the USA on 11th November 1998. His lecture was entitled, 'The Use of Mathematical Modelling in Fire Safety Engineering'.

5.0 EDITORSHIPS:

Prof Galea is an associate editor of:

- *The Aeronautical Journal* of the Royal Aeronautical Society (November 2013 -).
- *The Elsevier Journal, Safety Science* (Feb 2017 -)
- Prof Galea was guest editor of a special edition of *Safety Science*, '21st Century Grand

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Challenges in Evacuation and Pedestrian Dynamics', Vol 50, Issue 8, 2012.

- Prof Galea was an Associate Editor of the *Journal of Fire Protection Engineering* from 2008 to 2013, at which point it merged with another fire journal.
- Prof Galea was an Associate Editor of the *Journal Fire Science Reviews* from 2012 – 2017 at which point it merged with another fire journal

6.0 CAREER DETAILS:

CAA Professor In Mathematical Modelling

Department of Mathematics; Faculty of Architecture, Computing and Humanities.

University of Greenwich. London. UK.

July 1992 – present

Professor Galea has worked in fire safety research since 1986, when he joined the University of Greenwich. His fire safety research began as a result of the tragic Manchester Boeing 737 fire that claimed the lives of 55 passengers. Today, his work in Computational Fire Engineering (CFE: the core discipline of mathematical modelling, within Fire Safety Engineering), includes the modelling of evacuation, fire/smoke spread, combustion and fire suppression. His research interests also include crowd dynamics.

In 1992, at the age of 34, Professor Galea was made a full Professor at the University of Greenwich - the youngest professor to be appointed by the university. In recognition of his contributions to aviation fire safety, the UK Civil Aviation Authority contributes to the funding of his chair in mathematical modelling at the University of Greenwich. As Professor of Mathematical Modelling, he manages the Fire Safety Engineering Group (FSEG), a research group within the Faculty of Architecture, Computing and Humanities (FACH), comprising 30 people. Professor Galea also serves on a number of national and international standards committees concerned with fire safety and several government committees.

Professor Galea was elected to the governing body of the International Association of Fire Safety Science (IAFSS) in 2013, and in Feb 2014 was elected as Vice-Chairman of the IAFSS, representing Europe, the Middle East and Africa. The IAFSS is the pre-eminent organisation representing fire research in the world.

Professor Galea is the author/co-author of over 270 academic and professional publications concerning fire and related topics. Since 2008 he has generated over £10 million in research and consultancy funding. Organisations that have supported his research include: the UK CAA, Agip, Jet Aviation, Fire Research Station, Home Office, Cabinet Office, DSTO, IOSH, DSTL, Arups, BuroHappold, Kingfell, SERCO, Battelle, Quinetiq, Canary Wharf Management Ltd, HSBC, EU Framework Programme, EPSRC, NHS, Rockwool International, Clevertronics, Borealis, BAe Systems, Thales, BMT, US Federal Rail Administration, US Department of Defence, Canadian Dept of Transportation, Mitsubishi Aircraft, Bombardier, Airbus and Boeing. He has also supervised 27 PhD projects to completion, producing 27 PhD graduates in fire engineering.

Amongst a wide range of current research projects, Professor Galea is leading research in three

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European Union Horizon 2020 projects; AUGMMED (concerned with developing augmented reality training environments for security forces), IN-PREP (concerned with developing resilience in planning for major disasters) and GEO-SAFE (concerned with wildfires) and a project concerned with understanding how construction workers behave during evacuation of high-rise construction sites (funded by IOSH and supported by Multiplex). Most recently he has completed work on several projects including: LIFEVID, aimed at understanding how people behave in domestic fires (funded by the Kent FRS and the UK KTP), GATEway, a project to understand how pedestrians interact with autonomous vehicles (funded by the EPSRC), a project to investigate the impact of security bollards on mass evacuation from airports, rail and underground stations (funded by the CPNI UK Home Office) and a project to explore the impact of armed marauding terrorists in crowded places (funded by DSTL and DfT).

Professor Galea has also completed six major EU FP7 projects concerned with passenger ship fire and evacuation safety (SAFEGUARD and FIREPROOF), combustion of composite materials used in aircraft (AIRCRAFTFIRE), wayfinding in complex rail and underground stations (GETAWAY), and urban-scale evacuation in disasters (IDIRA).

Professor Galea has developed, and currently runs, two short courses specially designed to meet the needs of the fire safety engineering community. The courses are concerned with theoretical and practical issues of fire and evacuation modelling. Between 1998 and 2015, these courses have been attended by over 600 fire safety professionals from 42 countries. The courses have been assessed by the IFE as suitable for CPD, with the PPEM course being granted 35 hours, and the PPFM being granted 38 hours. Professor Galea also manages the Masters by Research programme and teaches on both the fire and evacuation courses at Masters level.

Professor Galea is Guest Professor at Ghent University, Belgium, where he teaches on Fire Safety Engineering MSc courses. He is also Visiting Professor, Western Norway University of Applied Sciences (HVL), Haugesund where he supervises PhD research projects in maritime safety. Until 2016, he was also a Visiting Professor at the Institut Supérieur des Matériaux et Mécaniques Avancées (ISMANS), Le Mans, France where he also taught on the MSc programme for Fire Safety Engineering.

Professor Galea managed and authored the University of Greenwich RAE 2008 submission to UoA 28, Mechanical, Aeronautical and Manufacturing Engineering, and the REF 2013 submission into UoA12 Mechanical, Aeronautical, Manufacturing, Marine and Chemical Engineering. These submissions consisted of the work of the Centre for Numerical Modelling and Process Analysis (CNMPA), of which he is a co-director, and which includes FSEG. In RAE 2013 74% of the submission to UoA 12 was rated 'world-leading' or 'internationally excellent'. The score represents a 4% improvement on our previous strong performance in the RAE 2008, and with 65% more staff (FTE) submitting their work in the latest assessment, reflects the breadth, as well as depth, of the research team. FSEG accounted for approximately 40% of the CNMPA submission. In REF 2013, 100% of the submission was rated in the top two categories for research impact, with the FSEG research impact statement being singled out for mention by the sub-panel.

In his role as professor, he has responsibility for:

- The generation of research and consultancy funding from a variety of sources including EPSRC, UK Government, EU, foreign funding agencies and industry

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- Interfacing with industry and government to determine their research requirements
- Managing the Faculty REF submissions
- Supervising post-doctoral research
- Supervising doctoral students
- Supervising MSc by Research students
- Generating national and international publicity for the activities of FSEG
- Developing and delivering targeted short courses to meet the requirements of the Fire Safety profession
- The management of various Masters programmes
- Delivering Masters level programmes

**(Founding) Director Fire Safety Engineering Group (FSEG).
University of Greenwich. London. UK.
July 1992 – present**

Professor Galea is the founding director of the Fire Safety Engineering Group (FSEG) at the University of Greenwich. FSEG was formed formally in 1992, in recognition of the growing contribution to Fire Safety Engineering made by Professor Galea, at both a national and international level. The origins of FSEG date back to the work of Professor Galea in investigating the Manchester Boeing 737 fire. Working as a sole Research Fellow, Professor Galea started FSEG's work in Fire Field Modelling – the application of Computational Fluid Dynamics to simulate fire dynamics. In 1989, Professor Galea started research into the psychology of evacuation behaviour.

Today, with 21 researchers, FSEG is one of Europe's leading centres of excellence concerned with CFE. FSEG has won a string of national and international awards that testify to the world-leading nature of its research. In the last UK-wide Research Assessment Exercise (REF 2013), FSEG was confirmed as one of the top research groups in the UK, with 74% of its work rated as either 'world leading' or 'internationally excellent'.

As well as aviation, the work of FSEG is applied to the built environment, rail and marine environments. The Group's high profile international projects range from the Airbus A380 superjumbo and the next generation Royal Navy Elizabeth-class aircraft carrier, to the World Trade Centre disaster and the Beijing Olympics. From its beginnings with a single researcher in 1986, Professor Galea has grown FSEG into a world-class team of over 30 researchers, consisting of two academic members of staff, 16 Research Fellows/Research Assistants and 12 PhD students. The group is a dynamic mixture of fire engineers, mathematical modellers, software engineers and behavioural psychologists. FSEG has two main themes of research, Fire Dynamics/Fire Modelling and Human Behaviour/Evacuation Modelling/Pedestrian Dynamics Modelling.

FSEG has developed the CFE tools SMARTFIRE for fire simulation, and the EXODUS suite of evacuation models. Through Professor Galea's efforts, airEXODUS has become the recognised world-leading evacuation model in the aviation industry, and has been used in design and certification projects by Airbus, Bombardier, Jet Aviation and Mitsubishi Aircraft. The buildingEXODUS model is used in 35 countries by fire departments, regulatory authorities, design engineers and universities. The maritimeEXODUS is used in marine applications for both shipping and off-shore applications. The software has been used for the design and assessment of the evacuation capabilities of both civil and naval vessels, and is used by most NATO navies and the

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Royal Australian Navy. The most recent addition to the EXODUS suite of software is railEXODUS, which was developed under contract with the US Federal Rail Administration and their VOLPE research laboratory. The SMARTFIRE CFD-based fire simulation software is used in 15 countries.

Professor Galea's primary role as FSEG director is to provide direction and leadership to this large and diverse team of researchers, generate income from grants and consultancy projects, and ensure that the group remains at the defining edge of the discipline. Part of this role is establishing links with other UK and foreign university and government-funded research laboratories. Links have been established with the University of Ulster, Liverpool, UCL, Southampton and Cranfield, as well as the University of Malta, Beijing Department of Labour Protection, Beijing Chemical University, University of Ghent, ISMANS in France and HVL in Norway.

**School Research Director
School of Computing and Mathematical Sciences.
University of Greenwich. London. UK
November 2001 – November 2014**

In 2001, the University of Greenwich redefined the core structure of the faculty/school system. As part of this development, the School administrative, academic and research structure was redefined. A senior management position of Research Director was created (one of three directors within the School), and Professor Galea was appointed as the first person to hold this post within CMS. The School had some 50 PhD students and 40 Research Fellows/Research Assistants in addition to the academic members of staff who contribute to research. The research budget for the School was of the order of £2 million per year. Prof Galea's role as School Research Director required him to foster and guide the development of research within the largest academic research grouping within the University of Greenwich. This involved, not only providing a dynamic, supportive and secure environment for research active staff, but also encouraging more staff – both existing and newly appointed – to become research-active. To this end, Professor Galea introduced an internal funding regime, in which staff submitted costed research proposals to the Research Director for consideration. Research support was provided through teaching relief and through the provision of funds for conference travel and the purchase of specialist equipment.

Professor Galea was involved in managing the School's submission to the last three RAE/REF funding rounds and in shaping the School's resulting research strategy. In the 2001 RAE, the School entered 27 academics and achieved a Grade 4. In 2008 Prof Galea was responsible for managing the submission of the School's 2008 RAE submissions (UoA's 22, 23, 28), and in 2014 Prof Galea managed the School's submission to REF2013 (UOA's 11, 12, 13, 14 and 14). With his role as Research Director, Professor Galea also sat on a number of university-wide committees directly concerned with research. The University of Greenwich reverted to a Faculty structure in November 2014, abolishing the individual school structure.

**CAA Reader in Fire Modelling
School of Mathematics, Statistics and Computing.
Thames Polytechnic, London, UK
July 1991 - July 1992**

In recognition of his contributions to the field of fire modelling research, Professor Galea was

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appointed to the position of Reader (Principal Lecturer grade), with the U.K. Civil Aviation Authority (CAA) contributing partial financial support for his post.

Senior Lecturer
School of Mathematics, Statistics and Computing
Thames Polytechnic, London, UK
Sept 1988 - July 1991

Professors Galea's position as Senior Lecturer in Mathematics at Thames Polytechnic demanded active participation in academic, research, and administrative duties. Central to his academic responsibilities was the teaching of numerical mathematics and modelling to undergraduate students. This necessitated up-to-the-minute knowledge of computer hardware and software, and complemented his supervision of doctoral, masters and final year degree students.

Post-Doctoral Research Fellow
Centre for Numerical Modelling and Process Analysis
Thames Polytechnic, London, UK
Feb 1986 - Sept 1988

Professor Galea's career at Thames commenced with the position of Postdoctoral Research Fellow. A three-year project jointly funded by the SERC and the CAA, this focused on the application of mathematical modelling techniques to the spread of fire and smoke in aircraft. The mathematical simulation of fire involves solving the non-linear fluid dynamics equations for turbulent buoyant flows simultaneously and in conjunction with a suitable combustion model. The solution technique utilises the finite volume approach as described and set out in the PHOENICS package. The computer used most intensively was the NORISK DATA 5700/5800/5900. Generating invitations to speak at five international conferences and 12 publications - including 4 in the popular press - the project proved highly successful.

Post-Doctoral Research Fellow
Mathematical Institute University
of St.Andrews, Fife, Scotland
Oct 1985 - Jan 1986

Professor Galea had a one year appointment at St.Andrews concerned the mathematical modelling of magnetic flux tubes in the solar atmosphere.

Research Officer
Broken Hill Propriety Ltd
Melbourne Research Laboratories
Melbourne, Australia
Nov 1984 - Aug 1985

Professor Galea's principal role with B.H.P. was to advise on, and to implement numerical solution methods. Major projects he was involved with included, Numerical Modelling of Heat Transfer in Continuous Casting, Hot Rolling Modelling project and the Eddy Current Fault Detection project. The continuous casting model he developed proved very successful, generating, a production model for BHP plant and two MSc degrees for BHP employees, and stimulating considerable further research.

Various teaching positions (part-time)

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Feb 1979 - Aug 1984.

From Feb 1983 to Aug 1984 Prof Galea was Senior Master at the Newcastle Power Coaching College (Australia). In addition to teaching mathematics and physics to 'A' level standard, he coordinated the activities of eight mathematics and physics teachers. His position also required him to meet parents and discuss with them the progress of their children. From Feb 1981 to Feb 1983, he was a mathematics tutor at the college. During his final year at Monash University (Feb 1979 to Oct 1979), he was mathematics tutor and computer programming consultant.

Warden/subwarden Various Halls of Residence Feb 1983 - Sept 1988

From Feb 1986 to Sep 1988, Prof Galea was Warden at Thomas Spencer Hall, Thames Polytechnic London. Thomas Spencer Hall was a student residence of some 200 beds with a residential staff consisting of one senior warden and two junior wardens. As senior warden Prof Galea's responsibilities included pastoral, disciplinary, academic and administrative duties. From Feb 1983 to Sep 1984, he was subwarden at Edwards Hall, University of Newcastle, Australia. Edwards Hall is a student residence of some 240 beds with a warden and six sub-wardens. His role there was similar to that at Thomas Spencer Hall.

7.0 RESEARCH INTERESTS:

Professor Galea is the author/co-author of over 270 academic and professional publications concerning fire and related topics. His research interests are diverse and include:

- Development of human behaviour models for evacuation
- Development of human behaviour models for pedestrian dynamics
- Experimental methods for the collection of human performance data
- Simulation of urban-scale crowd movement and evacuation
- Numerical methods for Computational Fluid Dynamics (CFD) based fire simulation
- Development of intelligent user interfaces for CFD fire simulation
- Aviation safety (fire and cabin safety)
- Building safety (fire and evacuation)
- Maritime safety (fire and evacuation)
- Rail safety (fire and evacuation)

Since 2008, Professor Galea has generated over £10 million in research and consultancy funding to maintain these interests.

8.0 CONSULTANCY:

Professor Galea's consultancy activities focus on, but are not restricted to, fire, ventilation, evacuation and pedestrian dynamics-related issues in the building, marine, aerospace and rail industries.

Consultancy projects/activities include:

- Third party review of fire engineered solutions for Local Government Authorities.
- Evacuation signage for Australian emergency lighting company, Clevertronics.
- Evacuation-related design advice for the aerospace industry, including Boeing, Airbus, Bombardier, DeHavilland of Canada, Mitsubishi Aircraft, Zodiac, Jet Aviation and British

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Airways, concerning the evacuation performance of new aircraft, crew procedures, etc.

- Evacuation analysis for high-rise buildings (e.g. One Canada Square (Canary Wharf), HSBC Bank)
- Evacuation analysis of historic buildings (e.g. Schonbourn Palace Vienna)
- Evacuation analysis under sub-contract to firms such as BuroHappold (e.g. Millennium Dome, Ascot Race-Course), Arup Transportation USA (e.g. BART underground)
- Fire simulation for aircraft, as part of the MD11 Swiss Air Inquiry
- Expert witness advice on fire and evacuation issues (e.g. Ladbroke Grove Rail Inquiry, Admiral Duncan Pub Bombing, Canadian Cabin Crew Union)
- Ship evacuation analysis for Lloyds Register, MoD, MCA, BP, Disney Lines, etc
- Rail evacuation issues (e.g. Engineering Link, AEA, SRA, etc)
- Provision of general advice to various firms on the acquisition and use of CFD software and the purchase of suitable hardware to perform CFD simulations
- Underground station fire simulation for one of the country's largest Engineering/architectural firms
- Fire safety analysis for the European Space Agency
- CFD-based pollution spread analysis for the HSE
- Project-specific advice to various fire brigades, such as Melbourne Fire Brigade and ESSEX Fire Brigade, on evacuation performance from large structures
- Provision of general advice to organisations, on a retainer basis, (e.g. 1991 – 1993, retained by CRAY RESEARCH Europe - a major international supercomputer manufacturer - to provide advice on developments within the CFD market, and the implications to their products, and in 2000 – 2001, retained by Sound Alert, a producer of innovative fire safety products, to provide advice on the fire safety market).

9.0 RECENT RESEARCH FUNDING:

Since 2008 Professor Galea has generated over £10 million in research and enterprise funding. Financial support has been derived from a range of organisations including the UK CAA, AGIP, Jet Aviation, Home Office, Office of the Deputy Prime Minister (ODPM), Arups, Canary Wharf Management Ltd, EU, EPSRC, NHS, Rockwool International, BAe Systems, Thales, BMT, Canadian Dept of Transportation, BuroHappold, Battelle, Bombardier, Airbus and Boeing.

Listed below are a selection of recent grants.

- DSTL/DfT. Modelling train security threats (Sept 2017 – Jan 2018), £100k.
- EU: IN-PREP, Horizon 2020 project. Concerned with disaster management with a focus on, Earthquake, Floods, Wild Fire research and Terrorism (Sept 2017 – Aug 2020), €540,000
- CLEVERTRONICS Dynamic signage. Concerned with assessing the performance of dynamic emergency exit signage. (May 2017 – April 2018), £65,915
- IOSH Construction Sites project. Project is concerned with evacuation from construction sites (May 2016 – Jan 2019), £169k.
- EU: GEO-SAFE, Marie Skłodowska-Curie RISE project. Concerned with Wild Fire research (May 2016 – April 2020), €150,000
- GATEway. Innovate UK, EPSRC project. Concerned with autonomous vehicles. We are investigating pedestrian interaction with autonomous vehicles. (Oct 2015 – March 2018). £150K.
- EU: AUGGMED, Horizon 2020 project. Concerned with developing augmented training environments for security forces (June 2015 – May 2018), €640,000

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- Australian DSTO. Develop a virtual simulator for damage control on naval vessels. Part I – III, Jan 2014 – Feb 2018, £202,000
- HSBC High Rise Building Evacuation Analysis, Sept 2014 – July 2015, £50,000.
- CPNI (UK Home Office). Experimental analysis of the impact of Bollard Arrays on Pedestrian movement – Part II, Feb 2014 – June 2015, £100,000.
- TSB/EP SRC (KTP). Kent Fire and Rescue Service, LIFE BID, understanding behaviour in domestic fires, July 2013 – Aug 2016, £158,250.
- CPNI (UK Home Office). Experimental analysis of the impact of Bollard Arrays on Pedestrian movement, Nov 2012 – Aug 2015, £100,000.
- ASH. Consultancy, fire analysis, Sept 2012 - Aug 2013, £21,000
- Nexen. Consultancy, off-shore evacuation analysis, July – Oct 2012, £33,500
- Fujitsu Europe. Evacuation associated with large scale flooding. Proof of Concept, March-June 2012, £17,000
- Bombardier: Consultancy aircraft evacuation project. April 2012 – Jan 2013, £20,000
- EU: GETAWAY. Framework VII STREP concerned with underground station emergencies (Nov 2011 – Oct 2014), Euro 572,438
- EU: INDIRA. Framework VII IP concerned with large scale emergencies (April 2011 – May 2015), Euro 640,000
- EU: AircraftFire. Framework VII STREP concerned with aircraft fire and evacuation simulation (Jan 2011 – Dec 2014), Euro 354,000
- EU: FIREPROOF. Framework VII STREP concerned with ship evacuation (June 2009 – June 2012), Euro 345,000
- EU: SAFEGUARD. Framework VII STREP concerned with ship evacuation, both experimental and modelling (April 2008 – April 2012), Euro 725,000
- EU: BeSeCu. Framework VII STREP concerned with cultural influence on evacuation. (May 2008 – Dec 2011), Euro 600,000
- Home Office. Review of state of the art in indoor-dispersion modelling for CBRN, March 2010 – March 2011, £45,000
- Jet Aviation: Consultancy, aircraft evacuation project, Sept 2010 – April 2011, £65,000
- Bombardier: Consultancy aircraft evacuation project. Sept 2010 – March 2011, £26,000
- AGIP: Consultancy demonstration project, evacuation analysis of large-scale oil refinery plant, Nov 2010 – Jan 2011, £20,000
- US Defence Dept: (Dec 2007 – Sept 2010). US\$90,000
- Federal Rail Administration: (Nov 2006 – Oct 2009). US\$110,000.
- Airbus A380: Analysis of A380 evacuation capabilities (Dec 2005 – March 2006). £31,000.
- Airbus Evacuation: Review of state-of-the-art in aircraft evacuation (Nov 2005 – Jan 2006). £25,000.
- Federal Rail Administration: (Aug 2005 – Dec 2005), £7,370 (US\$13,159).
- Bombardier Evacuation: Analysis of aircraft evacuation (July 2005 – Jan 2006). £10,000.
- EPSRC (GR/T23800/01) Travel Grant Brazil collaboration: (Nov 2004- Feb 2005), £10,116
- EPSRC (GR/T22100/1) Ship Evacuation: (Oct 2004 – Sept 2007), £256,145.
- MoD STG: Ship evacuation project. (May 2005 – Feb 2006). £50,000.
- EU: AVATARS. Framework VI STREP concerned with circulation analysis in stations. (April 2005 – Sept 2007), Euro 177,000
- EU: NACRE. Framework VI IP concerned with fire and evacuation analysis of Blended Wing Body aircraft. (April 2005 – March 2009), Euro 590,000
- Home Office. Civil Defence project 1. (March 2005 – Feb 2008), £150,000.
- Home Office. Civil Defence project 2. (March 2005 – Feb 2007), £290,000

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- EPSRC (GR/S74201/01 and EP/D507790): HEED Consortium lead by FSEG and Professor Galea involving University of Ulster and University of Liverpool. The team will study the evacuation of the World Trade Centre. (Sept 2004 – Oct 2007). £1.5 million.
- Borealis Project: Toxicity from cable combustion in fires. (2003-2005). Sweden funded. £55,000.
- Leverhulme Trust Grant: Funding for a post doctoral fellow and associated travel costs for 12 months. (2002 – 2003). £50,000.
- Lloyds Register: Funding for a post doctoral fellow and associated costs for 12 months. (2003 - 2004). £50,000.
- EU: VELA Large European Consortium, Fire and evacuation analysis for the next generation of aircraft (flying wing). (2002-2004). EU funded. £130,000
- EU: FIRE EXIT Consortium, evacuation from ships. (2002-2005). EU funded. £325,000.
- RAE: Rolling programme, funded by HEFC (Central Government) as part of the Research Assessment Exercise. (1997-2001) UK funded. £150,000.
- Taiwanese Government: Water Mist and fire simulation. (2002-2005). Taiwan funded £97,500.
- EU: VERRES European consortium, Research into emergency evacuation requirements of very large aircraft. (2001-2003) EU funded. £66,000
- EU: FIT Consortium, Fire In Tunnels, evacuation from tunnels. (2001-2004). EU funded. £17,000
- UK Civil Aviation Authority: An analysis of aircraft accident survivor accounts and the development of the AASK database. (2000-2002). UK funded. £116,000
- AIRBUS: Research into aircraft configuration options. (1999-2001), France/Germany funded. £170,000
- Canadian Department of Transport: Development of a Ship Evacuation Simulator. (2001-2002), Canadian funded CAN\$250,000 (equivalent of £125,000).
- UK MOD Royal Navy Project, Crew Behaviour in conditions of list. (2001-2002), UK funded. £60,000
- Canadian TSB: Study of Swiss Air aircraft fire. (2003-2004) Canadian Government funded. £40,000
- Borealis Project: Evacuation analysis of cable fire scenarios. (2001-2002). Sweden funded. £30,000.
- Rail Safety: Analysis of emergency signage systems on British Trains. (2001-2002). UK funded. £7,000.
- UK DTLR: Study of the evacuation of the World Trade Centre buildings on 9/11/01. (2002-2003) UK funded £50,000.
- British Airways: Predicting and analysing the evacuation performance of a proposed variant of the Boeing B777 aircraft. (2000-2001). UK funded. £15,750.
- EPSRC Grant GR/K38250: Fire and evacuation in aircraft environments (1996-1998) UK funded £41,000.
- EPSRC Grant GR/L56749/01: SMARTFIRE fire simulation environment. (1998-2000) UK funded £120,000

10.0 RESEARCH STUDENTS:

Professor Galea is actively involved in the supervision of PhD and Masters by Research students.

• PhD STUDENTS COMPLETED.

- | | | |
|----------------|--|-----------------|
| 1) N Hoffmann; | Modelling of two phase phenomena in fires. | Graduated 1990 |
| 2) S Taylor; | AI control of Fire model mesh generation. | Graduated 1997 |
| 3) J Fuchen; | Combustion Modelling. | Graduated 1999. |

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4)	S Gwynne;	Building evacuation simulation.	Graduated 2000.
5)	J Ewer;	Fire Simulation.	Graduated 2000
6)	D.Janes;	AI control of CFD fire simulation.	Graduated 2003
7)	S Blake;	Aircraft evacuation simulation.	Graduated 2003
8)	A Grandison;	Parallel computing and CFD fire simulation.	Graduated 2003
9)	Z Wang;	Toxicity models in CFD fire simulation.	Graduated 2007
10)	Y Wang;	AI configuration setup for CFD fire modelling.	Graduated 2007
11)	A Mahalingam;	Toxicity generation in fires.	Graduated 2007
12)	R M Tavares;	Evacuation optimisation.	Graduated 2010
13)	N. Chooramun;	Hybrid evacuation simulation techniques.	Graduated 2011
14)	H Xie;	Signage recognition and evacuation.	Graduated 2011
15)	H Jiang;	Graph theory in evacuation modelling.	Graduated 2011
16)	S. Deere;	Passenger Ship Evacuation.	Graduated 2011
17)	Y. Mohedeen;	Parallel evacuation simulation techniques.	Graduated 2011
18)	A. Veeraswamy;	Route finding and navigation techniques	Graduated 2011
19)	M. Kinsey;	Elevator evacuation	Graduated 2011
20)	D. Burton;	Hybrid fire modelling techniques.	Graduated 2011
21)	C. Hollmann	Emotion modelling	Graduated 2015
22)	M.Togher;	Aircraft Evacuation.	Graduated 2015
23)	M Sauter	Investigating the benefits of hardware accelerated CFD fire simulation	Graduated 2015
24)	X. Hu	Smoke modelling	Graduated 2015
25)	A. Hunt	Hospital evacuation	Graduated 2016
26)	R. Brown	Ship Evacuation	Graduated 2016
27)	A Kirori	Evacuation and the interaction with signage	Graduated 2018/19
28)	S AtharMPhil -	Fire and ventilation	Graduated 2018/19
29)	S Haasamen	An interactive evacuation simulation environment	Graduated 2020
30)	A Siddiqui	BIM in fire and evacuation modelling	Graduated 2020
31)	O Thompson	Human behaviour and evacuation in domestic fires	Graduated 2020

• **CURRENT PhD STUDENTS**

1)	M.Pretorias	Large scale urban evacuation modelling	2010 -
2)	V Pellacini	Modelling Vehicle Pedestrian interaction	2015 -
3)	I Nikolic	CFD simulation of fire suppression	2015 -
4)	S Vaiciulyte	Human Behaviour in WildFires	2016 –
5)	D M Gallego	Wildfire evacuation modelling	2016 –
6)	A Baddar	Waste fire modelling	2016 –
7)	M Joyce	Modelling evacuation devices	2017 –
8)	H Azizpour (HVL);	Pax ship evacuation in Arctic conditions	2017 –
9)	R Bruenig (HVL);	Pax ship evacuation in Arctic conditions	2017 –

• **MSc by RESEARCH STUDENTS COMPLETED.**

M Kauriala;	Smoke ventilation in building fires.	1999
T Aarons;	Evacuation modelling of sports grounds.	2000
A Siddiqui;	Web based data base for aircraft accidents.	2000
D Cooney;	VR environments and evacuation modelling.	2000

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H Westang;	WTC building evacuation.	2004
J Al Musharakh;	Forensic applications of CFE.	2005
T Adams;	Hospital evacuation.	2011

- **CURRENT MSc by RESEARCH STUDENTS.**

In addition, Professor Galea has successfully supervised over 35 MSc project students.

11. MEMBERSHIP OF UNIVERSITY COMMITTEES:

Elected to Academic Council of the University of Greenwich as professorial representative in November 1993, served several years and again 1996 – 1998 and 2013 – 2016.

Appointed to Chair of Faculty of Architecture, Computing and Humanities Research Committee 2013 – 2016.

Appointed to University Research Committee 2001 - 2016

Appointed to University Research Ethics Committee 2002 – 2009

Appointed to Higher Degree Committee 2001 – 2005

Appointed to the Research Committee of the University of Greenwich as faculty of Technology representative in November 1993, served several years

Elected to Academic Council, Thames Polytechnics' governing body as an observer in March 1992 - 2001

12. RELEVANT EXTERNAL ACTIVITIES:

Professor Galea is involved in a wide range of activities including:

- Serving member of SAPER (Scientific Advisory Panel for Emergency Response) from its inception in 2003 to its close in 2009. SAPER was chaired by Prof Sir David King – Government Chief Scientific Adviser – and was set up by the CCS, OST
- Serving member of the Home Office Committee on CBRN modelling since 2004
- Membership of several national and international standards committees, including BSI, ISO, IMO and SFPE
- Invited key note speaker at a range of international conferences
- Invited speaker at a range of international conferences
- Member of EPSRC college
- Referee for EPSRC and other research grant applications
- Referee for several academic journals
- Organising major international conferences and workshops
- Invited speaker at scholarly and professional societies
- Invited conference chair
- External examiner Trinity College Dublin (2014 - 2016)
- Media appearances
- Associate Editor of two journals.

Outlined below are examples of these activities.

- Expert to the Grenfell Inquiry (2017 -)
- Associate Editor of:
 - *The Aeronautical Journal* of the Royal Aeronautical Society (November 2013 -).
 - *The Elsevier Journal, Safety Science* (Feb 2017 -)

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- Member of Olympic security committee, chaired by UK Government Chief Scientific Adviser, Sir John Beddington (2010 – 2012)
- 2003 – 2009: member of a senior government committee, chaired by Prof Sir David King – Government Chief Scientific Adviser – reporting direct to the UK Government Cabinet. The committee known as SAPER (Scientific Advisory Panel on Emergency Response). The main role of SAPER was to support Sir David King in his COBRA role. The committee consisted of 10 leading scientists and engineers.
- Member Building Disaster Advisory Group, Office of the Deputy Prime Minister 2002-2004.
- Awarded ERCOFTAC Visiting Fellowship to visit the Swiss Federal Institute of Technology ETH June 2003
- Visiting Professor Institut Supérieur des Matériaux et Mécaniques Avancés (ISMANS), Le Mans, France (2010 - 2016)
- Visiting Professor Ghent University (2008 -)
- Visiting Professor University of Malta (2002-2003)
- Visiting Professor, Beijing Institute of Labour Protection (2002-2005)
- Visiting Professor, Brazilian university, Universidade Federal de Pernambuco (UFPE), located in Recife 2005
- Hosted fact-finding delegation from Beijing Government, concerning safety in public venues, Greenwich, Dec 2003
- Hosted delegation from US Congress General Accounting Office investigating state-of-the-art in aviation safety research, Greenwich, Sept 2002
- Fire and Evacuation expert to the Cullen Inquiry into the Ladbroke Grove rail crash, 2000
- Expert witness in the Admiral Duncan Pub Bombing case, 2003
- Core member of the EPSRC-funded Network FERN (2001 - 2005)
- Core member of the EPSRC-funded Network HUBFIN (2002 - 2006)
- Since 1992, I have acted as an external referee for the EPSRC and other European Government- based funding organisations
- Elected to EPSRC College 2005
- Nominated member, Science for Security mission to Boston/Washington, organised by UK Trade & Investment 30 Oct – 3 Nov 2006
- UK representative to International Standards Organisation committee TC92 (fire safety). 1997
- UK representative to International Maritime Organisation committee FP45 (ship evacuation) 1999
- UK representative to International Maritime Organisation committee FP46 (ship evacuation) 2002
- UK representative to International Maritime Organisation committee FP49 (ship evacuation) 2005
- UK representative to International Maritime Organisation committee FP50 (ship evacuation) 2006
- UK representative to International Maritime Organisation committee FP51 (ship evacuation) 2007
- UK representative to International Maritime Organisation committee SDC1 (ship evacuation) 2014
- UK representative to International Maritime Organisation committee SDC2 (ship evacuation) 2015
- UK representative to International Standards Organisation committee TC92 (fire modelling). 2000.
- Member US Society of Fire Protection Engineers Human Behaviour Task Group. 1999 –

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- Member British Standards Institute Committee fire calculation methods FSH/24/2. 1997 –
- Member British Standards Institute Committee life safety and evacuation FSH/24/5. 1997 –
- Member of the Home Office Advisory Group on the use of fire models and their role in performance based fire codes. 1995 - 1997
- Invited to judge British Computer Society awards for 2002, 2003 and 2004
- Organiser and chairman of the Second International Pedestrian and Evacuation Dynamics (PED) Conference held at the University of Greenwich in 2003
- Organised and hosted International Workshop on Survivable Aircraft Accident Data, Greenwich, April 2003
- Invited Chairman of session on fire safety at the 7th International Association of Fire Safety Science Symposium, USA, June 2002
- In 1998 Prof Galea served as joint chairman of the Cabin Safety Workshop organised as part of the JAA/FAA-organised meeting on Passenger Safety and Very Large Aircraft
- On numerous conference programme committees, most recently, IAFSS Human Behaviour Symposium, 2004
- Rapatour FERN EPSRC Network Workshop, Institute of Structural Engineers, 27 June 2003.
- In 1994, invited to spend two weeks at the NTSB Washington DC, discussing research in transportation safety
- In 1994 and again in 2001, invited to address the US NTSB board members on the implications of fire and evacuation modelling
- Invited to present research accomplishments at UK CAA Research Day, Gatwick, Oct 2002
- In 1995, invited to join UK delegation of observers at the B777 evacuation certification trial in Seattle USA
- Session Chair, 'Evacuation', Interflam 2007, 3-5 Sept 2007
- Session Chair, 'PhD student discussion group', Interflam 2007, 3-5 Sept 2007
- **Invited as Keynote Speaker at a range of international meetings, for example Prof Galea was invited to the following events:** European Union organised Conference on state-of-the-art in Surface Transportation, Valencia, June 2002; CERCA (Centre for Research on Computation and its Application) Workshop on 'Virtual Fire and HVAC simulation', Montreal, Oct 2002; International Conference on Information Visualisation 2003 (IVO3), London July 2003; Royal United Services Institute for Defence and Security Studies conference on Energy, Transport and Cargo Security, London, Oct 2003; Catastrophic Tunnel Fires, Boras Sweden, Nov 2003; Historic Buildings Conference, Vienna Austria, Dec 2003; Polish Association of Fire safety Engineers, 1-4 April 2004, DESSO workshop Sweden (ship safety) 14-17 June 2004, IAFSS Human Behaviour conference 31 Aug – 3 Sept 2004, European Commission Research Fund for Coal and Steel funded **DIFISEK** Fire Engineering Seminar held in Bilbo Spain, 14-17 Feb 2005, Fire and Emergency Services Asia (FSEA), Singapore, 22-24 Feb 2005; AFAC 2006, Melb Aust, 11 Aug 2006; KRRI Korea conference, 22 Aug 2006; 911 Conf, PACE Univ, 6 Sept 2006; Taipei Safety Conf 26-28 Sept 2006; Safety Seminar, Shanghai 13 March 2007 organised by Shanghai Inst of Traffic Engineering; Ocean Innovation 2007, 21-24 Sept 2007, Halifax Canada.
- **Invited Speaker at a host of international conferences, for example Professor Galea was invited to the following events:** Aircraft Cabin Safety conference Brighton, May 2002; Fire International, organised by the Institute of Fire Engineers, London, Sept 2002; NATO AGARD (AVTP), Fire Safety and Survivability Conference (two papers on aviation and marine safety),

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Aalborg, Sept 2002; Human Factors in Ship Design and Operation conference, Royal Institution of Naval Architects, London Oct 2002; Design and Safety of Ro-Ro Passenger Ships, Marine Safety conference, Denmark, Oct 2002; BAA Fire Safety Summit, Moreton-in-Marsh, Nov, 2002; IMO FP47, London, Dec 2002, Lloyds List conference, Fire on Ships, London, March 2003, 2nd Int Maritime Conference on Design for Safety, Osaka Japan, 28-30 Oct 2004, 4th Triennial Int Fire and Cabin Safety Research Conf, Lisbon, 15-18 Nov 2004, EU Cost Action C17 event, “Built Heritage: Fire Loss to Historic Buildings”, Vienna Austria, 7-9 Dec 2004, Cabin Safety Conference, London, 1-2 June 2005; 911 Conference organised by Police, Docklands, 26 Jan 2006; UTRC USA, 31 Jan 2006; Tunnel Safety Conference, Madrid, 13-17 March 2006; LTN Olympic Event, 24 May 2006; Chung Ang Univ, 23 Aug 2006; Fire Protection of Rolling Stock, London, 6-7 March 2007; MORE 21 Seminar 2007, “The role of risk management and loss prevention in fire insurance”, Paris, 24-25 Sept 2007.

- **Invited to address the a range of learned/professional Societies, for example:** SCI (Society of the Chemical Industry) AGM, Cambridge University, March 2002; BCS West Herts AGM, St.Albans, April 2002; BCS Hampshire AGM, May 2002; BCS Cardiff AGM, Cardiff, Oct 2002; Institute of Mechanical Engineers, Kent Branch annual meeting, Chatham, Oct 2002; Institution of Marine Engineers and Royal Institution of Naval Architects joint annual meeting, London, Dec 2002, University of Malta, Feb 2003; IOSH Hatfield, March 2003; ETH Zurich, June 2003; Air Accident Investigation Branch (AAIB), Farnborough July 2003; Society of Retired Chartered Engineers, South East Kent, April 2003; Invited to address the Foreign and Commonwealth Office on FSEG research and consultancy activities, Sept 2003.
- Since 1992, I have regularly refereed academic papers for journals such as: Fire Safety Journal, Fire Technology, Applied Fire Science, Fire and Materials, Journal of Applied Mathematical Modelling, etc.
- In 1991 and again in 1992 I was invited by the Department of the Prime Minister and Cabinet (Australia) to be a technical referee for their Cooperative Research Centre programme. This scheme involves Australian government investment of \$AUS100 million per year.
- From 1989 - 1996 I was editor of the IMA publication CFD News.
- From its inception in 1990 until 1996 I was the European editor of the international journal *Video Journal of Engineering Research* published by Wiley.

13. MEDIA EXPERIENCE:

- **POPULARISATION OF SCIENCE/ENGINEERING:**

From 1988 to 1993, Prof Galea wrote over 50 feature articles concerning his research interests for the national and international press, such as: The Guardian, The Times, The Daily Telegraph, The New Scientist, The Australian, etc. Below is a selection of these publications.

(7) The Model Revolution.

Authors: E.R.Galea

Competative Edge, Vol 1 No 1, Summer 1993, pp16-22

(6) How to exclude the engineer.

Author: E.R.Galea

New Scientist, 8th Sept 1990 p79.

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- (5) Safety in Numbers.
Authors: E.R.Galea and S.Cunnington-King.
The Guardian, 19th Oct 1989 p 35.
- (4) Too Hot to Handle.
Authors: E.R.Galea and S.Cunnington-King.
The Guardian, 3rd Aug 1989 p 27.
- (3) Maths Helps Model a Safe Fire Escape.
Authors: E.R.Galea and S.Cunnington-King.
The Sunday Times. 19 March 1989 p D22
- (2) The Burning Questions
Authors: E.R.Galea and S.Cunnington-King.
The Guardian, 26th January 1989, p 38.
- (1) Smoking out the Secrets of Fire.
Author: E.R.Galea.
New Scientist 7 July 1988 pp 44-48

- **ELECTRONIC MEDIA APPEARANCES**

Professor Galea's research has featured in a number of television and radio programmes. A selection of these can be found on the FSEG YouTube pages at:
<https://www.youtube.com/playlist?list=PL347623579CA57443>

A selection of programmes include:

- 1) EQUINOX: "Staying Alive", First broadcast 6 October 1996, Channel 4.
- 2) BBC WORLD SERVICE: Interview with Prof Galea describing evacuation modelling research. Broadcast Sept 1996.
- 3) Feature length interview with Prof Galea filmed by ITN for a documentary first broadcast on the DISCOVERY CHANNEL on 30th January 1997 9:30pm concerning aircraft disasters. The programme was entitled "Holiday Horror" and was part of the "Disasters" series.
- 4) BBC WORLD SERVICE: Interview with Prof Galea concerning fire research work at University of Greenwich. Broadcast on "New Ideas" programme 25th Feb 1997 at 7.30am.
- 5) DEUTSCHLANDFUNK (German National Radio): Interview with Prof Galea concerning the EXODUS model and Fire Safety Engineering. Broadcast 13th March and 22nd March 1998.
- 6) BBC RADIO 4: Programme: State of Emergency. Interview with Prof Galea concerning EXODUS and applications. Broadcast 1st July 1998 at 9:00pm.
- 7) BBC RADIO 4: Programme: State of Emergency. Interview with Prof Galea concerning EXODUS and applications. Broadcast 8th July 1998 at 9:00pm.

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- 8) BBC RADIO 5: Programme: The Formula. Interview with Prof Galea concerning evacuation modelling. Broadcast 2nd August 1998 at 9:40pm.
- 9) CHANNEL 5 and TLC: Programme: Into the FLAMES. Prof Galea was the technical consultant for this series consisting of three one hour documentaries concerned with fire safety (Fire in the Sky, Fire in the City and Forest Fire). May – September 1998.
- 10) BBC 1 and TLC: Programme: “Fire”, part of the “ESCAPE” series. Broadcast first half 1999.
- 11) CHANNEL 4: Programme: “Don’t Panic”, part of the “BLAZE” series. Broadcast June 1999. Also covered in a book by Nicholas Faith published by Channel 4 called “Blaze: the Forensics of Fire.”
- 12) CHANNEL 5 and TLC: Programme: Into the FLAMES II. Prof Galea was the technical consultant for this series consisting of three one hour documentaries concerned with fire safety. November 1999.
- 13) CHANNEL 4: Programme: DISPATCHES “A Matter of Life and Death”. Prof Galea was the technical consultant for the programme and appeared commenting about evacuation from rail vehicles. Broadcast 17th November 1999.
- 14) BBC 1: Programme: Tomorrows World “Survival Special”. Prof Galea was interviewed concerning the building EXODUS model. Broadcast 24th November 1999.
- 15) SKY TV: Programme: FAQ. Prof Galea was interviewed concerning the building EXODUS and SMARTFIRE models. Broadcast April 2000.
- 16) BBC RADIO 4: Programme: TODAY. Prof Galea was interviewed concerning Ladbroke Grove rail crash. Broadcast 10 May 2000.
- 17) BBC WORLD SERVICE: Interview with Prof Galea concerning his marine evacuation research work and the cruise industry. Broadcast 31st Aug 2001.
- 18) BBC 1: Panorama Special. Prof Galea interviewed concerning the World Trade Centre Disaster. Broadcast 11 Sept 2001.
- 19) BBC 2: News Night. Prof Galea interviewed concerning the World Trade Centre Disaster. Broadcast 12 Sept 2001.
- 20) SKY NEWS: Prof Galea interviewed concerning the World Trade Centre Disaster. Broadcast 12 Sept 2001.
- 21) ABC NEWS Radio: Prof Galea interviewed concerning the World Trade Centre Disaster. Broadcast 12 Sept 2001.
- 22) German TV ARO: Prof Galea interviewed concerning the World Trade Centre Disaster. Broadcast 12 Sept 2001.

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- 23) Irish Radio RTE: Prof Galea interviewed concerning the World Trade Centre Disaster. Broadcast 12 Sept 2001.
- 24) ITN documentary, Channel 5: Prof Galea interviewed concerning the World Trade Centre Disaster. Broadcast 14 Sept 2001.
- 25) ABC Science Programme “The BUZZ”, Radio National: Prof Galea interviewed about the EXODUS evacuation model. Broadcast 17 Sept 2001.
- 26) ITV London NEWS: Prof Galea interviewed concerning the award of the Queen’s Anniversary Prize for Higher Education. Broadcast 19 Feb 2003.
- 27) DISCOVERY CHANNEL USA: Unsolved History: The Wilhelm Gustloff, World’s Deadliest Sea Disaster. Prof Galea describes how maritime EXODUS was used to investigate this disaster. Broadcast first half 2003.
- 28) DISCOVERY CHANNEL USA: Documentary following the investigation of the MD11 Swiss Air disaster. Prof Galea describes how SMARTFIRE was used to investigate the disaster. Broadcast first half 2003.
- 29) DISCOVERY CHANNEL Europe: The War at Home. Documentary investigating preparedness for terror attack. Prof Galea describes evacuation issues and the EXODUS software. First broadcast 6 July 2003.
- 30) BBC WORLD SERVICE: Discovery Programme. Interview with Prof Galea describing evacuation modelling research. First broadcast 30 July 2003.
- 31) BBC 4 RADIO 4 Programme: Material World. Interview with Prof Galea concerning fire and evacuation simulation in buildings and the future of aviation. First broadcast 18 December 2003.
- 32) BBC WORLD SERVICE: The World Today. Interview with Prof Galea describing WTC evacuation research. First broadcast 30 Oct 2005 at 2300 GMT.
- 33) London LBC Radio: The Breakfast Show. Interview with Prof Galea describing WTC evacuation research. First broadcast 31 Oct 2005 at 0736 GMT.
- 34) BBC1: Evening London News. Interview with Prof Galea describing WTC evacuation research. First broadcast 31 Oct 2005 at 1830 GMT.
- 35) SKY NEWS: Evening National News. Interview with Prof Galea describing WTC evacuation research. First broadcast 3 Nov 2005 at 1900 GMT.
- 36) Prof Galea made over 23 appearances in the electronic media during 2006. These include: NY Public Radio. Interview describing WTC project. 7 Feb 2006 NY City, USA; CNN Radio syndicated in the US. Interview describing WTC project. 8 Feb 2006 NY City USA; C-SPAN (USA) TV, Preparedness of First Responders, discussion panel, first broadcast in the USA on 06/09/06; All of the following coverage was generated by interest in the Horizon programme which

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focused on FSEGs work on aircraft evacuation. The Horizon programme was viewed by 2.1 million people and the web site had 350,000 hits on the first day. The article on the ABC NIGHTLINE programme website was the most emailed news story they had up to the night of broadcast. BBC 2 HORIZON PROGRAMME, Survivors guide to plane crashes, 03/10/06; ABC (USA) NIGHTLINE TV PROGRAMME, Staying Alive during a plane Crash, 03/11/06; BBC WORLD SERVICE IV, 02/10/06; BBC RADIO 4 TODAY Programme, broadcast 03/10/06 at 0650; BBC RADIO 5 LIVE, broadcast 03/10/06 at 0720; BBC WALES (radio) 03/10/06 at 0800; BBC WORLD TV, 03/10/06 at 0920; LBC RADIO NICK FERRARI SHOW, 03/10/06 0935; BBC WORLD SERVICE NEWS HOUR, 03/10/06, 1000; BBC WORLD SERVICE UPDATE, 03/10/06; BRITISH FORCES RADIO, 03/10/06, 11:00; BBC NORTHERN ISLAND (Radio), 03/10/06; BBC NEWS24 TV, 03/10/06, 1500; ABC RADIO (Australia) AM/PM programme, 03/10/06, 1530; BBC WORLD SERVICE BRAZIL, 03/10/06; BBC SOUTHERN COUNTIES RADIO, 04/10/06, 1010; DUBLIN RADIO, 04/10/06, 1610; BBC BRAZIL TV, 05/10/06; SOUTH AFRICAN RADIO, 06/10/06; AUSTRIAN BROADCASTING COMMISSION FM3, REALITY CHECK, 14/10/06.

37) Prof Galea made 12 appearances in the electronic media during 2007 concerning the Phuket plane crash.

1) BBC News24: 20:15 16/09/07; 2) BBC World TV: 20:30 16/09/07; 3) BBC5 newsradio: 07:10 17/09/07; 4) BBC Midlands radio: 08:05 17/09/07; 5) Between 16:30 - 17:30 on 17/09/07 interviewed on the following "Drive time programmes": BBC Scotland; BBC Bristol; BBC Southern Counties; BBC Cambridgeshire; BBC Derby; BBC Southern Counties (Sussex Drive); BBC Mersyside; 6) BBC Southern Counties - Gordon Astley Show, 09:30 - 10:00 18/09/07 .

38) Sky News concerning the BA777 Heathrow crash, 07:15 on 18/01/08.

39) BBC Radio 5 Live Breakfast Programme, Use of escalators on London Underground, 07:25 on 18/01/16.

40) BBC Radio 4 Today Programme. Use of escalators on London Underground (10 March 2016).

41) BBC WorldService 'Weekend' programme (16 April 2016 [07:50](#) GMT+1), use of escalators on London Underground.

42) Mummies Alive' programme Series 1 Episode 6, Hero of Herculaneum, broadcast on 22 May 2016 in the UK, the documentary was produced for the History Channel Canada, Smithsonian Channel USA, UKTV in the UK, ZDF in Germany (and shown on Yesterday in the UK).

43) Prof Galea made a number of appearances in the print and electronic media during 2017 discussing FSEG research associated with the AUGGMED project and the Grenfell fire.

- **BBC Click, 28 April 2017. FSEG AUGGMED project featured in BBC News' technology programme, CLICK.** The feature also appeared on BBC World News as well as several regional BBC news stations.
<https://www.bbc.co.uk/iplayer/episode/b08vgqh9/click-50-shapes-of-goo>

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- **Crises Response Magazine, May 2017. 'Augmed, the serious game platform'.** FSEG AUGMED project featured in the May issue of the magazine.
<https://www.facebook.com/notes/fire-safety-engineering-group-fseg/auggmed-featured-in-crises-response-magazine-special-edition/1710943808920852/>
- **BBC Radio 4, Inside Science, 15 June 2017.** Prof Ed Galea was interviewed concerning the Grenfell fire. <http://www.bbc.co.uk/programmes/b08tbf4v#play> (bbc.in/ed-grenfell)
- **New York Times, 19 June 2017. 'U.K. Officials Said Material on Tower Was Banned. It Wasn't'.** Interview with Prof Ed Galea concerning the Grenfell fire.
<https://www.nytimes.com/2017/06/19/world/europe/uk-grenfell-tower-london-fire.html> (https://nyti.ms/2yzyDnO)
- **New York Times, 24 June 2017. 'Why Grenfell Tower Burned: Regulators Put Cost Before Safety'.** Interview with Prof Ed Galea concerning the Grenfell fire.
<https://www.nytimes.com/2017/06/24/world/europe/grenfell-tower-london-fire.html>
- **The Economist, 24 June 2017. 'Tall buildings are becoming more common. They need not be dangerous. With proper enforcement, fire regulations can keep tower-dwellers safe'.** Interview with Prof Ed Galea concerning the Grenfell fire.
<https://www.economist.com/news/international/21723821-proper-enforcement-fire-regulations-can-keep-tower-dwellers-safe-tall-buildings-are> (https://econ.st/2yFZX9)

44) Prof Galea was interviewed for the BBC RADIO 4 programme, 'All in the Mind' (08/05/18) on his research concerned with how pedestrians interact with autonomous road vehicles as part of the GATEway Autonomous Vehicle project.

<https://www.bbc.co.uk/programmes/b0b1r3j1> (bbc.in/ed-gateway)

14. PUBLICATIONS:

Professor Galea is the author of over 300 academic and professional publications concerning fire and related topics.

• AUTHORED BOOKS

2 Engineering Escape: The Mathematical Modelling of Evacuation Behaviour.

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• **OTHER FORMS OF OUTPUT**

Professor Galea is responsible for the development, production and distribution world wide of the following software products, licensed through the FSEG University of Greenwich:

- buildingEXODUS software product,
- airEXODUS software product,
- maritimeEXODUS software product,
- SMARTFIRE software product.

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