CURRICULUM VITAE

ANDREW R. BARRON

Energy Safety Research Institute
Swansea University Bay Campus
Swansea
Wales SA1 8EN

Phone: 01792 606930
E-mail: a.r.barron@swansea.ac.uk
ORCHID (0000-0002-2018-8288)
DoB: 20 May 1962
Nationality: UK (USA Green Card)

PRESENT POSITIONS:

1) Sêr Cymru Chair of Low Carbon Energy and Environment, College of Engineering, Swansea University, Wales, UK (2013-).
2) Founder & Director, Energy Safety Research Institute, Swansea University, Wales, UK (2013-).
3) Professor Emeritus, Chemistry, Rice University (2019-).
4) Professor Emeritus, Material Science and Nanoengineering, Rice University (2019-).
5) Visiting Professor of Environmental Engineering, Universiti Technology Brunei (2020–).

PREVIOUS POSITIONS:

1) Charles W. Duncan, Jr. - Welch Chair of Chemistry, Rice University (1995-2019).
2) Professor of Nanoengineering and Materials Science, Rice University (1995-2019).
3) Associate Dean of Industry Interactions and Technology Transfer, Rice University, (2006-2009).
4) Director, National Corrosion Center, Rice University (2011-2012).
5) Director, Texas Center for Crystallography at Rice University (1997-2008).
6) Visiting Professor, Swansea University (2009-2013).
7) Visiting Professor, University of Wales (2009-2010).
8) Associate Professor of Chemistry, Harvard University (1991-1995).
9) Assistant Professor of Chemistry, Harvard University (1987-1991).
10) Post-doctoral Research Associate, University of Texas at Austin (1986-1987).

Non-academic

1) Team Principle Ross Racing (Chiefie Motorsport) American LeMans Series GTS (1999-2000).
2) Manager, Freemantle Hotel, London (1983).

EDUCATION:

1) B.Sc. (1st Class, Hons), Imperial College of Science and Technology, University of London (1983).
2) Associate of the Royal College of Science (ARCS), Imperial College of Science and Technology, University of London (1983).
3) Ph.D. Imperial College of Science and Technology, University of London. Thesis title "Transition Metal Aluminohydrides". Research under the supervision of Professor Sir Geoffrey Wilkinson F.R.S. (1986).
4) Diploma of Imperial College (D.I.C.) Imperial College of Science and Technology, University of London (1986).

AWARDS:

1) Star of Asia International Award – 2019.
2) Erasmus+ Vilnius University - 2016.
3) Applied Inorganic Chemistry Award (Royal Society of Chemistry) – 2013.
4) World Technology Award (Materials) – 2011.
5) Lifetime Achievement Award in Nanotechnology – 2011.

6) Prince of Wales Visiting Innovator – 2009.
7) Welch Foundation Norman Hackerman Award in Chemical Research – 2002.
8) Houston Police Bomb Squad Challenge Medal presented by the Houston Police Department and the International Association of Bomb Technicians and Investigators (IABTI) – 2001.
9) Fellow, Royal Society of Chemistry - 1995.
10) Hümboldt Senior Scientist Research Award – 1997.
11) Corday Morgan Medal and Prize (Royal Society of Chemistry) – 1995.
12) Meldola Medal and Prize (Royal Society of Chemistry) – 1991.
13) Alcoa Directors Fellowship – 1992.
14) Alcoa Directors Fellowship – 1993.
15) Alcoa Directors Fellowship – 1994.
16) Du Pont Young Faculty Fellow – 1987.
17) HVA Briscoe Prize – 1983.

ORGANIZATIONS:

1) Royal Society of Chemistry
2) American Chemical Society
3) Windsor Energy Group.
4) UK Carbon Capture and Research Centre (UKCCSRC).

RESEARCH INTERESTS:

1) Technology for industrial decarbonisation.
2) Inorganic nanomaterials for green energy production.
3) Improved environmental efficacy of energy processes.

FINANCIAL SUPPORT: 1987 – Present (funding details upon request)
Government Agencies

1) Advanced Research Projects Agency (ARPA).
2) Center for Biological and Environmental Nanotechnology (NSF).
3) Defense Advanced Research Projects Agency (DARPA).
4) Department of Defense (DOD).
5) Department of Defense: Navy Surface Warfare Center Panama City.
6) Department of Energy (DOE).
7) Environmental Protection Agency (EPA).
8) EPSRC.
9) European Regional Development Fund (ERDF).
10) Innovate UK.
11) National Academies Keck Futures Initiatives.
12) National Aeronautics and Space Administration (NASA).
13) National Research Network (NRN) Wales.
14) National Science Foundation (NSF).
15) Office of Naval Research (ONR).
16) Technology Strategy Board (TSB).
17) US Air Force Research Laboratory.
18) Welsh Government Sêr Cymru Programme.
19) Welsh European Funding Office (WEFO).

Foundations and Professional Societies

1) ACS Petroleum Research Fund (PRF)
2) Advanced Energy Consortium (AEC).
3) American Chemical Society, SEED Fund
4) Coleman Foundation
5) Dreyfus Foundation
6) Elsa U. Pardee Foundation.

7) Fleming and Davenport Awards.
8) Ford Foundation.
9) Richard E. Smalley Institute for Nanoscale Science and Technology
10) Robert A. Welch Foundation
11) Texas Medical Center Fleming and Davenport Awards
12) Virginia and L. E. Simmons Family Foundation

Industrial

1) Akzo Nobel
2) Albemarle Corporation
3) Apache Corporation
4) BP
5) Colgate-Palmolive Company
6) Condea Vista Company - SASOL North America
7) eCORP International, Inc.
8) Gentex Optics Inc.
9) Halliburton Energy Services
10) ICI
11) Isotron Corp.
12) Idemitsu Chemicals Corp.
13) Lithion Corp.
14) Natcore Technology, Inc.
15) Malakoff Industries (Reynolds International)
16) Lockheed Martin Corp.
17) Oman Oil.
18) SALTS Healthcare
19) TDA Research Inc.
20) Yardney Technical Products.
21) YTL.
22) Worldwide Eco-Corporation
23) Middle East Water Solutions
24) NIQ Filter Works

PUBLICATIONS:

Peer review Journals

1) 513 publications to date
2) h-factor (impact) = 71
3) Citations = 18,237
4) i10-index = 337
5) Full list attached.

Books

1) M. Barron and A. R. Barron, *Project Management*. OpenStax CNX. May 15, 2019 http://cnx.org/contents/5e9177d7-9998-43d0-9b98-91a369c6a371@11.6.
2) P. M. V. Raja and A. R. Barron, *Physical Methods in Chemistry and Nano Science*. OpenStax CNX. Jan 20, 2019 http://cnx.org/contents/ba27839d-5042-4a40-afcf-c0e6e39fb454@25.2.
3) A. R. Barron, *Chemistry of the Main Group Elements*. OpenStax CNX. Mar 22, 2014 http://cnx.org/contents/f46e8679-ee00-4073-9f5e-a87ca9955a9e@25.9.
4) A. R. Barron, *Chemistry of Electronic Materials*. OpenStax CNX. May 21, 2013 http://cnx.org/contents/1096167b-8518-4159-a88d-3b2ae4df6645@9.4.
5) A. R. Barron and D. Johnson, *Portland Cement in the Energy Industry*. OpenStax CNX. Jan 27, 2010 http://cnx.org/contents/a626e24b-9320-4b40-b481-99d93c25d63b@3.12.

6) A. R. Barron, *Hydrogen*. OpenStax CNX. Jan 27, 2010 http://cnx.org/contents/fe64dc8c-59d1-4e69-acdf-22381522a60f@4.6.
7) D. J. Flood and A. R. Barron, *Carbon Nanotubes*. OpenStax CNX. Sep 30, 2013 http://cnx.org/contents/a0309d0a-3759-4a07-8ef7-f6eb29220eb6@1.1.
8) A. R. Barron, *Nanomaterials and Nanotechnology*. OpenStax CNX. Mar 24, 2015 http://cnx.org/contents/7b4dfcf8-b28e-4141-8f2f-1ff39052669f@13.7.
9) M. Barron and A. R. Barron, *Project Management*. MiDAS Green Innovation, ISBN:978-1-83800-852-9.
10) A. R. Barron, *Chemistry of the Main Group Elements*. MiDAS Green Innovation, ISBN:978-1-83800-851-2.

Patents

1) US Patent 5,139,999, Gordon et al., Chemical vapor deposition process where an alkaline earth metal organic precursor material is volatilized in the presence of an amine or ammonia and deposited onto a substrate
2) US Patent 5,159,983, Barron et al., Apparatus and method for capping oil or gas wells
3) US Patent 5,238,711, Barron et al., Method of coating carbon fibers with a carbide
4) US Patent 5,300,320, Barron et al., Chemical vapor deposition from single organometallic precursors
5) US Patent 5,527,851, Barron et al., Stabilised olefin carbon monoxide copolymer compositions
6) US Patent 5,738,721, Barron et al., Liquid precursor and method for forming a cubic-phase passivating/buffer film
7) US Patent 5,760,462, Barron et al., Metal, passivating layer, semiconductor, field-effect transistor
8) US Patent 6,008,525, Barron et al., Minority carrier device comprising a passivating layer including a Group 13 element and a chalcogenide component
9) US Patent 6,207,130, Kareiva et al., Metal-exchanged carboxylato-alumoxanes and process of making metal-doped alumina
10) US Patent 6,322,890, Barron et al., Supra-molecular alkylalumoxanes
11) US Patent 6,369,183, Cook et al., Methods and materials for fabrication of alumoxane polymers
12) US Patent 6,770,773, Rose et al., Organic acid-Fe-OOH (ferroxane) particles and ferroxane-derived ceramics and ceramic membranes
13) US Patent 6,936,306, Barron et al., Chemical control over ceramic porosity using carboxylate-alumoxanes
14) US Patent 7,115,764, Barron et al., Mechanical shear based synthesis of alumoxane nanoparticles
15) US Patent 7,220,454, Barron et al., Production method of high strength polycrystalline ceramic spheres
16) US Patent 7,253,014, Barron et al., Fabrication of light emitting film coated fullerenes and their application for in-vivo light emission
17) US Patent 7,459,209, Smith et al., Composition and method for making a proppant
18) US Patent 7,491,444, Smith et al., Composition and method for making a proppant
19) US Patent 7,569,199 Barron et al., Method to remove sulfur or sulfur-containing species from a source
20) US Patent 7,669,658, Barron et al., High strength polycrystalline ceramic spheres
21) US Patent 7,682,527, Barron et al., Fabrication of light emitting film coated fullerenes and their application for in-vivo light emission
22) US Patent 7,692,218, Barron et al., Method for creating a functional interface between a nanoparticle, nanotube or nanowire, and a biological molecule or system
23) US Patent 7,718,550, Barron et al., Method for low temperature growth of inorganic materials from solution using catalyzed growth and re-growth

24) US Patent 7,736,430, Barron et al., Compositions and methods for controlling the setting behavior of cement slurries using carbonated fly ash
25) US Patent 7,867,613, Smith et al., Composition and method for making a proppant
26) US Patent 7,883,773, Smith et al., Composition and method for making a proppant
27) US Patent 7,887,918, Smith et al., Composition and method for making a proppant
28) US Patent 7,914,892, Smith et al., Composition and method for making a proppant
29) US Patent 8,003,212, Smith et al., Composition and method for making a proppant
30) US Patent 8,012,533, Smith et al., Composition and method for making a proppant
31) US Patent 8,062,702, Barron et al., Coated fullerenes, composites and dielectrics made therefrom
32) US Patent 8,075,997, Smith et al., Composition and method for making a proppant
33) US Patent 8,168,570, Barron et al., Method of manufacture and the use of a functional proppant for determination of subterranean fracture geometries
34) US Patent 8,201,517, Barron et al., Method for low temperature growth of inorganic materials from solution using catalyzed growth and re-growth
35) US Patent 8,217,137, Barron et al., Fullerene-based amino acids
36) US Patent 8,298,667, Smith et al., Composition and method for making a proppant
37) US Patent 8,361,349, Barron et al., Fabrication of light emitting film coated fullerenes and their application for in-vivo light emission
38) US Patent 8,562,935, Smalley et al., Amplification of carbon nanotubes via seeded-growth methods
39) US Patent 8,575,548, Barron et al., Analyzing the transport of plasmonic particles through mineral formations
40) US Patent 8,603,578, Smith et al., Composition and method for making a proppant
41) US Patent 8,636,830, Barron et al., Aliphatic amine based nanocarbons for the absorption of carbon dioxide
42) US Patent 9,034,085, Barron et al., Aliphatic amine based nanocarbons for the absorption of carbon dioxide
43) US Patent 9,242,876, Barron et al., Methods, systems and membranes for separation of organic compounds from liquid samples
44) US Patent 9,290,665, Barron et al., Coated fullerenes, compositions and dielectrics made therefrom
45) US Patent 10,232,342, Ghosh et al., Method, synthesis, activation procedure and characterization of an oxygen rich activated porous carbon sorbent for selective removal of carbon dioxide with ultra high capacity
46) US Patent 10,376,861, Ghosh et al., Method, synthesis, activation procedure and characterization of an oxygen rich activated porous carbon sorbent for selective removal of carbon dioxide with ultra high capacity
47) US Patent D668,213, Barron, Horizontal solar energy collector
48) US Patent D668,212, Barron, Vertical solar energy collector
49) European Patent 1,070,029, Bailey et al., Chemical control over ceramic porosity using carboxylate-alumoxanes
50) European Patent 1,200,498, Barron et al., Method and materials for fabrication of alumoxane polymers
51) European Patent 1,319,639, Barron et al., Chemical control over ceramic porosity using carboxylate-alumoxanes
52) European Patent 1,456,124, Barron et al., Coated fullerenes, composites and dielectrics made therefrom
53) European Patent 1,476,399, Rose et al., Organic acid-FeOOH (ferroxane) particles and ferroxane-derived ceramics and ceramic membranes
54) European Patent 1,563,530, Barron et al., Fabrication of light emitting film coated fullerenes and their application for in-vivo light emission
55) European Patent 1,563,545, Barron et al., Field effect transistor with functionalised nanotube and corresponding manufacturing method.

56) European Patent 1,579,490, Barron et al., Method for low temperature growth of inorganic materials from solution using catalyzed growth and re-growth
57) European Patent 1,713,723, Barron et al., Fullerene-based amino acids

COLLABORATIONS (past and present):

UK

1) Dr. Joseph C. Bear, Kingston University.
2) Dr. Richard Cobley, Swansea University.
3) Dr. Shareen Doak, Swansea University.
4) Dr. Julian Eastoe, University of Bristol.
5) Prof. Chenfeng Li, Swansea University.
6) Prof. Alex M. Lord, Swansea University.
7) Prof. Iseult Lynch, University of Birmingham.
8) Prof. Darren L Oatley-Radcliffe, Swansea University.
9) Prof. Paul O'Brien, Manchester University.
10) Prof. D. Roger J. Owen, Swansea University.
11) Prof. David R. Rankin, University of Edinburgh, Scotland.
12) Dr. Martin B. Ward, Leeds University.

USA

1) Dr. Atta Arif, University of Utah, UT.
2) Prof. Jerry L. Atwood, University of Missouri-Columbia, MO
3) Dr. Manoop Bhutani, University of Texas MD Anderson Cancer Center, Houston, TX.
4) Prof. Simon Bott, University of Houston, TX.
5) Dr. M. Bowes Hamill, Baylor College of Medicine, Houston, TX.
6) Prof. W. Edward Billups, Rice University, TX.
7) Dr. S. A. Curley, University of Texas, MD Anderson Cancer Center, TX.
8) Prof. Seamus A. Curran, University of Houston, TX.
9) Prof. Geoffrey Davies, North Eastern University, MA
10) Prof. Kerwin D. Dobbs*,* University of Delaware, DE
11) Prof. Mark E. Eberhart, Colorado School of Mines, CO
12) Prof. Michelle Francl, Bryn Mawr College, PA
13) Dr. Jason B. Fleming, Department of Surgical Oncology, The University of Texas, M. D. Anderson Cancer Center, TX.
14) Dr Dennis J. Flood, NASA Glenn, Cleveland, OH.
15) Prof. Thomas R. Gilbert, North Eastern University, MA
16) Prof. R. G. Gordon, Harvard University, MA
17) Prof. Norman Hackerman, Rice University, TX.
18) Dr. Al Hepp, NASA Glenn, Cleveland, OH.
19) Dr. Philip P. Jenkins, NASA Glenn, Cleveland, OH.
20) Dr. Tom R. Jervis, Los Alamos National Laboratory, NM.
21) Prof. Robert Kren, University of Central Michigan, MI
22) Prof. Paul E. Laibinis, Vanderbilt University, TN
23) Prof. Quilin Li, Rice University, TX.
24) Prof. Robert W. Lenz, University of Massachusetts, MA
25) Prof. Dennis L. Lichtenberger, The University of Arizona, AZ
26) Prof. Andreas Luttge, Rice University, TX.
27) Prof. Antonios G. Mikos, Rice University, TX.
28) Dr. Nancy Monteiro-Riviere, North Carolina State University, NC.
29) Dr. Benji Maruyama, Wright Patterson Air Force Base, OH.
30) Prof. Michael Nastasi, University of Nebraska-Lincoln, NE
31) Dr. Lewis Norman, Halliburton Energy Services, Duncan, OK.
32) Dr. Anthony J. Perrotta, ALCO, PA
33) Prof. W. S. Rees, Jr. Georgia Institute of Technology, GA.

34) Prof. Massood Tabib-Azar, University of Utah, UT.
35) Prof. David J. Singel, Montana State University, MT.
36) Prof. Richard Smalley, Rice University, TX.
37) Dr. Rei Suzuki, Department of Gastroenterology, Hepatology, and Nutrition, The University of Texas M. D. Anderson Cancer Center, Houston, USA.
38) Prof. Mark Wiesner, Duke University, NC.
39) Prof. Lon J. Wilson, Rice University, TX
40) Dr. Joseph Ziller, University of California, Irvine, CA.
41) Prof. Maria M. Fidalgo de Cortalezzi, University of Missouri, MO.

Europe

1) Dr. Jérome Rose, Institut national des sciences de l'univers (INSU), France.
2) Prof. Jean-Yves Bottero, Centre Européen de Recherche et d'Enseignement des Géosciences de l'Environnement, France.
3) Dr. Frédéric Guittard, University of Nice Sophia Antipolis and CNRS, France.
4) Prof. Aivaras Kareiva, Vilnius University, Lithuania.
5) Dr. Marta Sevilla, Instituto Nacional del Carbón (CSIC), Spain.
6) Prof. Antonio B. Fuertes, Instituto Nacional del Carbón (CSIC), Spain.
7) Prof. J. M. Tsangaris, University of Ioannina, Greece.
8) Prof. Manthos G. Papadopoulos, The National Hellenic Research Foundation, Greece.
9) Dr. Ionel Haiduc, Babeş-Bolyai University, Turkey.
10) Dr. Cristian Silvestru, Babeş-Bolyai University, Turkey.
11) Prof. Claudiu T. Supurm, University of Florence, Italy.
12) Prof. Michael Stuke, Max Planck Institute, Germany.
13) Prof. Herbert W. Roesky, University of Gottingen, Germany.
14) Dr. Stephan Schulz, University of Duisburg-Essen, Germany.
15) Prof. Janusz Lewinski, Warsaw University of Technology, Poland.
16) Prof. Janusz Stanislaw Lipkowski, Cardinal Stefan Wyszynski University, Poland.

Rest of World

1) Prof. Masanobu Sagisaka, Hirosaki University, Japan.
2) Prof. Zeyad Almutairi, King Saud University, Saudia Arabia
3) Dr. Sattam Fahad Al-Mojil, King Saud University, Saudi Arabia.
4) Dr. Abdullah A. Alabdulkarem, King Saud University, Saudi Arabia.
5) Dr. Rajan Jose, Universiti Malaysia Pahang, Malaysia.
6) Dr. Goshtasp Cheraghian, Islamic Azad University, Iran.
7) Dr. Goshtasp Cheraghian, Islamic Azad University, Iran.
8) Prof. David Potter, University of Calgary, Canada.
9) Prof. Serdar Durdagi, University of Calgary, Canada.
10) Dr. Nashaat N. Nassar, University of Calgary, Canada.
11) Prof. Felipe Feijoo, Pontificia Universidad Católica de Valparaíso (PUCV), Chile.

SERVICES TO ACADEMIC DISCIPLINE:

Editorial Board (Past and Present):

1) North American Regional Editor: Advanced Materials for Optics and Electronics, Wiley (1992- 2000)
2) Editorial Board: Advanced Materials, VCH. (1998-2005)
3) Editorial Board: Chemistry of Materials, ACS. (1998-2002)
4) Editorial Board: Polyhedron, Pergamon (1998 - 2002).
5) Editor/Symposium Organizer: Covalent Ceramics II, Materials Research Society Symposium Proceedings, Boston Meeting 1993.
6) Editor: Polyhedron Symposium-in-print number 10, Aluminium, Gallium and Indium, 1990, 9, (2,3), 149-453.

7) Editorial Board: Main Group Metal Chemistry (1995-1999).
8) Editorial Board, Dalton (2000-2008).
9) Editorial Board, Recent Patents in Nanotechnology (2006-2009).
10) Editorial Board: Main Group Chemistry (2006-present).
11) Editorial Board: Materials Science in Semiconductor Processing (2011-present).
12) Editor: Journal of Nanomaterials (2013-present).
13) Editor: Scientific Reports (Nature) (2014-present).
14) Editorial Board: Journal of Materials & Research (2016-present).
15) Editorial Board: Journal of Nanostructure in Chemistry (2018-present).

Organisation of Scientific Meetings

1) Conference Organizer, Transcending Incrementalism, ESRI, Swansea, UK, 2019.
2) Conference Committee, International Conference on Applied Energy (ICAE2017), Cardiff, 2019.
3) Co-chair, 1st European Workshop on Metal Phosphonates Chemistry – Materials for Energy Applications and Beyond, ESRI, Swansea, UK, 2018.
4) Co-chair, MSA/NASA Technical Workshop, Houston, 2000.
5) Chair, Inorganic Chemistry Gordon Conference, Newport, USA, 1997.
6) Symposium Chair for special symposium in honor of Sir. Geoffrey Wilkinson, ACS National Meeting, San Francisco, USA, 1997.
7) Symposium Organizer, Covalent Ceramics II, MRS Fall Meeting, Boston, USA, 1993
8) Co-chair, Inorganic Chemistry Gordon Conference, Newport, USA, 1996.

TEACHING:

1) Transition Metal Chemistry, CHEM 495 (1996-2013).
2) Chemistry of Electronic Materials, CHEM 496 (1995, 1997).
3) Honors Lab, CHEM 106 (1998).
4) Inorganic Chemistry, CHEM 360 (1997, 2001, 2003, 2004).
5) Special Topics in Inorganic Chemistry, CHEM 595 (1996).
6) Physical Methods in Inorganic Chemistry, CHEM 575 (1996-Present).
7) Physical Methods in Inorganic and Nano Chemistry, CHEM 575 (2009, 2010).
8) Effective Presentations in Chemistry, CHEM 606 (1997-2003).
9) Chemistry of Electronic Materials, CHEM 596 (1997, 1999).
10) Inorganic Seminar. CHEM 600 (1996, 1997, 1998, 1999, 2003)
11) Technology Management for Scientist and Engineers. CHEM/MSCI/MGMT 603 (1998, 1999).
12) Entrepreneurial Management for Science and Engineering, CHEM/MSCI/MGMT 750 (2000 - 2009).
13) New Venture Creation for Science and Engineering, CHEM/MSCI/MGMT 751 (2001-2009).
14) Advanced Module in Catalysis, CHEM 391 (2000, 2001).
15) Advanced Module in Experimental Chemistry, CHEM 351 (2000).
16) Management for Science and Engineering, NSCI/ENGI 610 (2006-2015).
17) Automotive Engineering: Materials and Dynamics, MSCI 615-616, 2005-2015).
18) Organometallic Chemistry, CHEM 105 (1987-1995).
19) Inorganic Chemistry, CHEM 40 (1993-1994).
20) General Chemistry, CHEM 5 (1988-1994).
21) Chemical Safety Seminar Series for the Faculty of Arts and Science, "Handling Hazardous Chemicals" (1988-1995).

EDUCATION DEVELOPMENT

1) Scientific Advisor to the National Science Resource Center (jointly operated by the Smithsonian Institution and the National Academy of Science) aimed at the

development of a national hands-on school science curriculum for K through 12th grade. Review and advisory role of all new science based programs.
2) Development of Open Access Education programs through Connexions (cnx.org) to allow students (85 students to date) to create user defined text book for University Courses to pass on their learning to the next generation.
3) Managerial Chemistry, Jones School of Business courses for senior petroleum, energy and chemical industry executives (1998, 1999).
4) Management for Science and Engineering, Rice University, joint education programme between Colleges of Science, Engineering and Management to provide Management skills for Science and Engineering students (1998-2019).
5) Co-founder of College of Science, Rice University, Professional Masters Program (https://profms.rice.edu/).
6) Development training program for Middle School Teachers, Houston, TX, through research experiences (2004-2001).
7) Developed Automotive Engineering programme at Rice University in partnership with Society of Automotive Engineering (SAE).
8) Promotion of the Athena SWAN Charter for excellence in Science, Technology, Engineering, Medicine and Mathematics (STEMM) employment in Higher Education at Swansea University.

REGIONAL AND MEDIA DEVELOPMENT

1) Science Advisor to the Library of Congress. Review and advisory role for mass deacidification program.
2) Scientific advisor appointed to the Cambridge School Committee (1990 – 1995).
3) Scientific advisor and lecturer to the Cambridge Fire Department, "Hazardous Metals", "Acids and Corrosives" and "Pyrophorics", (1990 - 1995).
4) Scientific advisor and lecturer to the Houston Fire Department (1995 - 2015).
5) Scientific advisor and lecturer to the Houston Police Department Bomb Squad (2006-2015).
6) Technical consultant Harris County District Attorney (1998-2019).
7) Scientific programs for CBS News (1997 - 2009).
8) Scientific programs for Fox News (1998 - 2010).
9) Scientific programs for NBC News (1998 - 2010).
10) Scientific programs for BBC (2018 - 2019).
11) Scientific programs for Discovery Channel (2000).

INTERNATIONAL DEVELOPMENT

1) Scientific Advisory Board Member for Scientific Fellowship Program, Republic of Ireland (2008-2009).
2) Founder and Manager, Texas/UK Collaborative (2000).
3) PI for BP 21CPD Education Program, which involved a 4-party collaboration between Rice University, Baylor College of Medicine, Manchester University, and Heriot Watt University to deliver education to BP staff world-wide.
4) Special advisor to the President Vilnius University, Lithuania (2017-present).
5) Founder King Saud-Swansea University $K(SU)^2$ Collaborative (2017).
6) Advisory Board, King Abdullah University of Science and Technology (KAUST), Saudi Arabia (2009-2012).
7) Advisor Yellow River Delta Efficient Eco-economic Development, Binzhou, China (2010-2011).
8) Board of Directors, Zhu Zhou International Research Institute China (ZIRIC) (2011-2012).
9) Member, Innovation and Leadership Committee of Greater Houston Energy Collaborative, Greater Houston Partnership (2006).
10) Developed & Negotiated Swansea University's partnership with King Khalid University (KKU) Saudi Arabia.

11) Developed & Negotiated Swansea University's partnership with Princess Nourah University (PNU) Saudi Arabia.
12) Developed & Negotiated Swansea University's partnership with Universiti Brunei Darussalam (UBD).
13) Developed & Negotiated Swansea University's partnership with Universiti Technology Brunei (UTB).
14) Developed & Negotiated Swansea University's partnership with University Technology Petronas (UTP).
15) Developed & Negotiated Swansea University's partnership with Universiti Malaysia Pahang (UMP).
16) Developed & Negotiated Swansea University's partnership with University of Malaya Power and Energy System (UMPES).

UNIVERSITY SERVICE:

1) Graduate Admissions Committee (1996 - 2000)
2) Chemistry Department Curriculum Committee (1996 -1998)
3) Department of Mechanical Engineering and Materials Science Chair Search Committee (1996)
4) School of Sciences Steering Committee (1996)
5) Jones School Dean Search Committee (1997)
6) Technology Transfer Committee (1996, 1997)
7) School of Continuing Studies: Lecture on Topics in Contemporary Science (1996)
8) Curriculum Innovations: Development of Weiss School/Jones School joint programs (1996)
9) Committee on Scholarships and Awards (1997, 1998)
10) Promotion and Tenure Committee (1998)
11) Search Committee for Vice Provost for Development (1999)
12) Materials Science Steering Committee (1998)
13) Departmental Seminar Committee (1998)
14) Provost Search Committee (1998)
15) Executive Education - Managerial Chemistry (1997 - 1999)
16) Academic Advisor, Baker College (1996 - Present)
17) Graduate Admissions Committee (2001)
18) Curriculum Committee (2001, 2002)
19) Graduate Recruiting Committee (2002)
20) Division Contacts Committee (2002)
21) Industrial Enterprise Committee (2002)
22) Steering Committee, Rice Alliance for Technology and Entrepreneurship (1999 - present).
23) Advisory Board for the Energy and Environmental Systems Institute, Rice University.
24) Board Member, National Corrosion Center, Rice University.
25) Founder and Director of the Energy Safety Research Institute (ESRI), Swansea University (2013-present).
26) College of Engineering Executive Committee, Swansea University (2018-present).

CORPORATE SERVICES:

1) Founder and Chairman Scientific Advisory Board, Gallia Inc. (1992-1997).
2) President: Aluminum Research Board (1991-1997).
3) Board Member, Velocita, Inc. (2008-2011).
4) Board Member, Houston Clean Energy Park (2009-2011).
5) Science Advisory Board, Nanotech Innovations (2008 -209).
6) Science Advisory Board, Yellowstone Energy Ventures (2008-2009).
7) Scientific Advisory Board, Tego Biosciences (2007-2009).
8) Scientific Advisory Board, and Board Member, Oxane Materials, Inc. (2002-2014).
9) Scientific Advisory Board, NatCore Technology, Inc. (2004-present).

10) Scientific Advisory Board, Vanguard Solar (2007-2009 acquired by Natcore Technology, Inc.).
11) Scientific Advisory Board, Molecular Filtration, Inc. (2009-2010).
12) Scientific Advisory Board, Lance Energy Services (2010-2014).
13) Board Member, Velocita, Inc. (2008-2011).
14) Board Member, Houston Clean Energy Park (2009-2011).
15) Chief Technology Officer, C-Bond Systems (2017-present).
16) Board Member, Trimtabs Ltd (2019-present).
17) Technical Advisor, Worldwide Eco-Corporation (2019 – present).
18) Founder, MiDAS Green Innovations, Ltd (2019-present).
19) Advisory Board, Macrocaps (2020-present)

ENTREPRENEURSHIP:

1) Founder, Natcore Technology, Inc. Solar cell materials technology, founded from Rice University IP.
2) Founder, Oxane Materials, Inc. Technology for reducing waste in oil and gas production through enabling higher yields per well, from Rice University IP.
3) Founder, Vanguard Solar, Inc. Nanotechnology systems for compound solar cells.
4) Founder, Gallia, Inc. Materials technology for GaAs chip devices for communications systems.
5) Founder, C-Bond Systems, Inc. developed technology for increasing glass strength to allow thinner glass with reduced energy consumption in manufacture.
6) Co-Founder, Worldwide Eco-Corporation for water treatment of industrial waste-water and pre-treatment of water for desalination.
7) Co-Founder, VLS-Decarbonisation Partners developing technology for large scale Carbon Capture and Storage (CCS) with zero carbon energy.
8) Co-Founder Alliance for Technology and Entrepreneurship (https://alliance.rice.edu/) internationally-recognized initiative devoted to the support of technology commercialization, entrepreneurship education, and the launch of technology companies. It is a catalyst for building successful ventures through education, guidance and connections. Its mission is to support the creation of technology-based companies and the commercialization of new technologies. Since its inception in 2000, more than 2300 companies have participated in over 190 Rice Alliance programs and have raised more than $5.9 billion in early-stage capital. More than 48,000 individuals have attended Rice Alliance events and over 36,000 individuals subscribe to the Rice Alliance Digest newsletter. The Rice University Business Plan Competition is the World's Richest and Largest, awarding more than $10 million in prizes since 2001. Over 201 past competitors are in business today or successfully exited having raised nearly $1.9 billion in capital and exit dollars.
9) Advisor to the Celtic Alliance for Nanohealth (2012). A partnership of between Swansea University, Trinity College Dublin, Dublin City University and University College Dublin to replicate the Rice Alliance for Technology and Entrepreneurship model between Ireland and Wales.

RESEARCH GROUP: Present (Total since 1987 in parentheses) (42% Female)

1) Graduate Students 4 (49)
2) Postdoctoral Associates 8 (32)
3) Undergraduate Assistants 0 (30)
4) Summer Research interns 0 (24)
5) Sabbatical and Visiting Scholars 0 (9)

THESES SUPERVISION:

1) Sterically Crowded Aryloxides of Aluminum, M. D. Healy, Harvard University (1992).
2) 1,3-Diphenyltriazenide Compounds of Aluminum and Indium, J. T. Leman, Ph.D., Harvard University (1993).

3) *Tert*-butyl Compounds of Gallium, W. M. Cleaver, Ph.D., Harvard University (1994).
4) Chemical Routes to Group 13-16 Materials, C. C. Landry, Ph.D., Harvard University (1994).
5) Intramolecular Coordination in Compounds of Aluminum, J. A. Francis, Ph.D., Rice University (1999).
6) Surface and Coordination Chemistry Related to GaAs, A. Keys, Ph.D., Rice University (1999).
7) Advanced Ceramic Composites and Coatings via Alumoxane Nanoparticles, R. L. Callender, Ph.D., Rice University (1999).
8) Chemical Vapor Deposition of Alumina-Based Thin Films, B. Fahlman, Ph.D., Rice University (2000).
9) Inorganic-Organic Materials Incorporating Alumoxane Nano-Particles, C. Vogelson, Ph.D., Rice University (2000).
10) Controlled Ceramic Porosity and Membrane Fabrication via Alumoxane Nanoparticles, C. Jones, Ph.D., Rice University (2000).
11) Cement Hydration Inhibition and Crosslinking in the Guar-Borate System, M. Bishop, Ph.D., Rice University (2001).
12) Aluminum and Gallium Chloride Stabilized Arene-Mercury Complexes, A. Borovik, Ph.D., Rice University (2001).
13) Development of Homogeneous and Heterogeneous Alkylalumoxane Catalysts, S. Obrey, Ph.D., Rice University (2001).
14) Controlling Ceramic Porosity Using Carboxylate-Alumoxane Nanoparticles, K. DeFriend, Ph.D., Rice University (2002).
15) Reversible Binding of Lewis Bases to Aluminum and Gallium Aryloxides, L. van Poppel, Ph.D., Rice University (2002).
16) Chemistry of Group 13 Lewis Acids, C. S. Branch, Ph.D., Rice University (2002).
17) Liquid Phase Deposition of Silica: Thin Films, Colloids and Fullerenes. E. Whitsitt, Ph.D., Rice University (2004).
18) Nanoparticles as crosslinking agents in polymer systems. N. Shahid, Ph.D., Rice University (2004).
19) Formation of Alumina Features & Cadmium Chalcogenide Coatings of Single-Walled Carbon Nanotubes. J. R. Loscutova, Ph.D., Rice University (2004).
20) Metal catalyzed reactions of fullerenes and single walled carbon nanotubes. D. Ogrin, Ph.D., Rice University (2005).
21) Transition Metal Catalyzed Reactions of Fullerenes and Carbon Nanotubes, R. Anderson, Ph.D., Rice University (2005).
22) From Fullerene Amino Acids to Fullerene Peptides. J. Yang, Ph.D., Rice University (2006).
23) Functionalization of Single Walled Carbon Nanotubes. L. Zhang, Ph.D., Rice University (2006).
24) Characterization via Nuclear Magnetic Resonance of Portland Cement and Related Materials. C. Edwards, Ph.D., Rice University (2006).
25) Nucleation and Growth of Carbon Nanotubes as a Function of Catalyst Composition. Christopher Crouse, Ph.D., Rice University (2008).
26) Single-Walled Carbon Nanotubes: Functionalization, Characterization and Application. L. Zeng, Ph.D., Rice University (2008).
27) Metal Ion Interactions with Single Walled Carbon Nanotubes. Jonathan Brege, Ph.D., Rice University (2009).
28) Functionalization, Characterization, and Coordination of Carbon Nanomaterials. C. Hamilton, Ph.D., Rice University (2009).
29) Various Coatings of Carbon fibers and Single Wall Carbon Nanotubes: Synthesis and Applications. H. Jafry, Ph.D., Rice University (2010).
30) In-vitro Model System for Calcific Band Keratopathy and Inhibitory Effects of C60 Fullerene Derivatives. N. Doostdar, Ph.D., Rice University (2010).

31) Fullerene Amino Acids and Peptides: Synthesis and Applications. T. A. Strom, Ph.D., Rice University (2010).
32) Steric Considerations in Copper(II)-Olefin Complexes Incorporating Substituted *Bis*-2-pyrol)amines. J. Allen, Ph.D., Rice University (2011).
33) Regular Arrays of QDs by Solution Processing, B. Oliva, MS, Rice University (2011).
34) Polyethylenimine functionalized nano-carbons for the absorption of carbon dioxide. E. Dillon, Ph.D., Rice University (2011).
35) Fabrication of Petrochemical and Viral Resistant Membranes, S. Maguire Boyle, M.S., Rice University (2012).
36) Synthesis of black silicon anti-reflection layers for silicon solar cells, Y.-T. Lu, Ph.D., Rice University (2015).
37) Coating and doping of Ge QDs, B. Oliva-Chatelain, Ph.D., Rice University (2016).
38) Branched aluminum oxide nanoparticles for enhanced oil recovery applications, W. A. A. D. Al-Shatty, MSc, Swansea University (2016).
39) Functionalization of carbon materials with metals, Wright D. Kourtney, PhD, Rice University (2017).
40) Catalytic growth of carbon nanotubes using a single molecule catalyst precursor, Gibran L. Esquenazi, PhD, Rice University (2018).
41) A Design Approach to the Synthesis and Characterization of Metal Phosphonate MOFs, Derek B. Barbee, PhD, Rice University (2019).
42) The Use Of Steelmaking Slags in Marine Applications, Lucy Fisher, MSc, Swansea University (2019).

PRESENTATIONS: 1995 - present

1) "A chemical approach for structural, composite, and coating materials for automotive applications", invited lecture, World Car Conference '96, Riverside, CA, January, 1996
2) "Alkyl alumoxanes: destroying the myth", invited lecture, University of Texas at Arlington, Arlington, TX, January, 1996
3) "Alkyl alumoxanes: destroying the myth", invited lecture, University of North Texas, Denton, TX, February, 1996
4) "Molecular control over materials synthesis", NREL Photochemical Sciences Workshop, Estes Park, CO, February, 1996
5) "Environmentally benign processing of aluminum-based ceramic materials: water soluble alumoxanes", ACS National Meeting; New Orleans, LA, March, 1996
6) "Gallium sulfide: molecules materials and transistors", invited lecture, University of Delaware, DE, May, 1996
7) "Alkyl alumoxanes: destroying the myth", invited lecture, DuPont Central Research, Delaware, DE, May, 1996
8) "Alkyl alumoxanes: destroying the myth", invited lecture, GE; Schenectady, NY, July, 1996
9) "Dialkylaluminum carboxylates: models for carboxylate alumoxanes", International Coordination Chemistry Conference, Vancouver, BC, August, 1996
10) "The future of inorganic chemistry: nano-science and technology", Monsanto, St. Louis, MO, October, 1996
11) "Alkyl alumoxanes: destroying the myth", invited lecture, ACS Southwestern Regional Meeting; Houston, TX, October, 1996
12) "Gallium sulfide: molecules materials and transistors", invited lecture, University of Southern Illinois, IL, October, 1996
13) "A new route to alumina-based ceramics via a novel transmetalation reaction", American Ceramic Society, San Antonio, TX; October, 1996
14) "Alumoxane precursors to designer catalysts and catalyst supports: catalytic oxidation of dichloromethane", invited lecture, MRS Fall Meeting, Boston, MA, December, 1996
15) Inorganic Gordon Conference, Salve Regina University, Newport, RI, July, 1997

16) Symposium Chair for special symposium in honor of Sir. Geoffrey Wilkinson, ACS National Meeting, San Francisco, CA. April 1997
17) Organometallic Gordon Conference, Salve Regina University, Newport, RI, July, 1997
18) MRS Fall Meeting, Boston, MA, December 1997.
19) 81st Canadian Society for Chemistry Conference & Exhibition, Vancouver, Canada, May 31 - June 4, 1998
20) 2nd Fargo Conference on Main Group Chemistry, Fargo, ND, June 4 - June 6, 1998
21) Hunter College Symposium, New York, NY, April 28 - April 30, 1998
22) "A new route to hexaluminate ceramics via a novel transmetalation reaction", American Ceramic Society, Coco Beach, FL, Jan. 25-Jan. 28, 1999
23) "Carboxylate Alumoxanes Environmentally Benign Routes to Ceramics", Alcoa Chemical Co., Alcoa, PA, March 9, 1999
24) "Enhancement of Intermolecular Hydrogen Bonding Through Coordination", American Chemical Society, Anaheim, CA, March 21, 1999
25) "Carboxylate Alumoxane Nanoparticles", University of Oldenburg, Germany, May 17, 1999
26) "Carboxylate Alumoxane Nanoparticles", University of Munchen, Munich, Germany, May 19, 1999
27) "Analytical Facilities at Rice University", Baker Hughes, Sugar Land, TX, June 4, 1999
28) "CVD of Conformal Alumina Films", Gordon Conference, Chemistry of Electronic Materials, New England College, New Hampshire, July 4 - July 9, 1999
29) "Aluminate Interphase Coatings for FRCMC", NASA Glenn Research Center, Cleveland, OH, July 13, 1999
30) "Gas Phase Structure of $Al(t\text{-}Bu)_3$ and $Ga(t\text{-}Bu)_3$", Gordon Conference, Inorganic Chemistry, Newport, RI, July 19 - July 23, 1999
31) "Reaction of Tert-Butylalumoxane with Trimethylaluminum", American Chemical Society, New Orleans, LA, Aug. 23 - Aug. 26, 1999
32) "Cleavage of Organosiloxanes by Aluminum Hydrides", American Chemical Society Regional Meeting, El Paso, TX, Oct. 20 - Oct. 22, 1999
33) "Activation of Small Molecules by Group 12/13 Complexes", International Conference on Lewis Acidity, Nagoya, Japan, Nov. 1 - Nov. 3, 1999
34) "Alumoxane Nanoparticles", Toyota Motor Company, Toyota City, Japan, Nov. 4, 1999
35) "Understanding Methyl Alumoxane", Sumitomo Chemical, Chiba, Japan, Nov. 5, 1999
36) "Understanding MAO", Albemarle Corp., Baton Rouge, LA, Dec. 7, 1999
37) "Understanding Alumoxanes", Albemarle Corp., Baton Rouge, LA, April, 2000
38) "Aluminum Oxides: How a New Look at an Old Material Can Provide Unexpected Results", Society of Minerals, Metals, and Materials, Rice University, Spring, 2000
39) "An Investigation in to the Mechanism of Cement Hydration Inhibition", Halliburton Energy, Duncan, OK, Spring, 2000
40) "A ^{11}B NMR Investigation into the Mechanism of Crosslinking in the Guar-Boron System", Halliburton Energy, Duncan, OK, Spring, 2000
41) "Fiber-Reinforced Ceramic Matrix Composites Using Alumina Nanoparticles", American Ceramic Society, St. Louis, MO, May, 2000
42) "Simple Solutions are Often the Best: Cross-Disciplinary Research from the Barron Group", presentation to Rice University Alumni, Rice University, March, 2000
43) "Carboxylate Alumoxanes: Inorganic-Organic Composite Materials for Automotive Applications", Rice University School of Continuing Studies, Spring, 2000
44) "Activation of Aromatics Using Group12/13 Lewis Acids", Gordon Conference, Inorganic Chemistry, Salve Regina College, Newport, RI, July, 2000
45) "Aluminum and gallium chloride stabilized arene-mercury complexes", American Chemical Society National Meeting, San Diego, CA, April, 2001

46) "Cement hydration inhibition: In situ creation of composite structures", American Chemical Society National Meeting, San Diego, CA, April, 2001
47) "Carboxylate-Alumoxanes: Environmentally Benign Precursors for Developing Aluminum Based Ceramic Membranes and Filters", Halliburton Energy Services, Duncan, OK, June, 2001
48) "Arene-Mercury Complexes Stabilized by Aluminum and Gallium Chloride: Catalysis for H/D Exchange of Aromatic Compounds." University of Arizona, Tucson, Arizona. January 18, 2002
49) "Arene-Mercury Complexes Stabilized by Aluminum and Gallium Chloride: Catalysis for H/D Exchange of Aromatic Compounds." Los Alamos National Laboratory, Los Alamos, New Mexico. January 24, 2002
50) "Carboxylate-Alumoxanes: A Journey from Understanding Sol-Gels to Catalysts, Composites, and Membranes." Sandia National Laboratory, Albuquerque, New Mexico. January 23, 2002
51) "Carboxylic Acid Functionalized Alumina Nanoparticles: A Flexible Class of Pre-Ceramics for Structural Composites and Ultrafiltration Membranes." Georgia Institute of Technology, Atlanta, GA. 9/16/2002
52) "Carboxylic Acid Functionalized Alumina Nanoparticles: A Flexible Class of Pre-Ceramics for Structural Composites and Ultrafiltration Membranes." Central Michigan University, Mount Pleasant, MI. 9/18/2002
53) "Carboxylic Acid Functionalized Alumina Nanoparticles: A Flexible Class of Pre-Ceramics for Structural Composites and Ultrafiltration Membranes." University of Houston, Houston, TX. 10/8/2002
54) "Nanotechnology Presentation." Cleantech Venture Network, Toronto, Canada. Workshop, November 13, 2002
55) "A Structural and Reactivity Model for MAO: Does Anyone Believe Me Now?." American Chemical Society, New Orleans, LA, March 22, 2003
56) "Controlling Surface Chemistry of Oxide Membranes." CBEN NanoDays 2003, Rice University. October 14, 2003
57) "Coating and Exposing SWNTs." CBEN NanoDays 2003, Rice University. October 14, 2003
58) "Coating and Exposing SWNTs." Welch Foundation, Houston, Texas. October 28, 2003
59) "Coatings, Spontaneous Interconnects, Regioselective Functionalization, and Interactions with Biological Systems of SWNTs." National Science Foundation, Jackson Hole, WY. June 1, 2003
60) "Interface of Wet and Dry Nanotechnology." Affymetrix, Inc., San Francisco, CA, San Francisco, CA. September 9, 2003
61) "Interface of Wet and Dry Nanotechnology." Puretech, Inc., Boston, MA. October 23, 2003
62) "Nanostructure Coating Technology." Valve Technologies Technical Conference International Seminar 2003, Houston, TX. October 24, 2003
63) "Use of Carboxylate Alumoxanes in Bone Replacement Materials." IRIS X 10th International Symposium on Inorganic Ring Systems, Burlington, VT. August 22, 2003
64) "Fabrication of Nanostructured Ceramic Membrane", France/Texas Water Treatment Research Congress: Emerging Technologies and Challenges. January 12, 2004
65) Lecture to CBEN for high school teachers, February 17th, 2004
66) Teaching at Lee High School for CBEN, February 17th, 2004
67) "Biological and Environmental Applications of Nanotechnology", Case Fellowship 'Societal Implications of Nanotechnology' March 15, 2004
68) "Reinforcement of Poly Propylene Fumarate -Based Networks with Surface Modified Alumoxane Nanoparticles for Bone Tissue Engineering". Alliance for NanoHealth Workshop, Texas Heart Institute, Houston, TX. May 14, 2004

69) "New High Density Fuels: A Chemical Approach" DARPA/TTO Seedling Study, Rice University, Houston, TX. (August 31, 2005
70) "Alumoxanes: A Journey from Research to Commercialization." Nanotechnology Colloquium, Houston, Texas. (October 31, 2005)
71) "Alumoxanes: A Journey from Ceramics and Catalysts to Bone Replacement and Fuel Cells" Baylor College of Medicine, Houston, TX. (January 14, 2005)
72) "Coating and Exposing SWNTs" University of Notre Dame, Notre Dame, IN. (February 17, 2005)
73) "Coating and Exposing SWNTs" United States Air Force, Wright Patterson Air Force Base, Ohio. (February 22, 2005)
74) "SWNTs and Fullerenes: From Composites and Catalysis to Biology and Remediation" Strategic Partnership for Research in Nanotechnology, Houston, Texas. (October 11-12, 2005)
75) "Membranes" Nanotechnologies for a Sustainable Environment, Rice University, Houston, TX. (December 15, 2005)
76) "Nano-Applications in Energy: Fuel Cells/Catalysis" Rice Energy Symposium, Rice University, Houston, TX. (January 10, 2006)
77) "Technology Transfer at Rice University" Nanotechnology Venture Forum 5, Rice University. (January 20, 2006)
78) "Evaluation and Accessing University Based Technology" Sino-US Small Business Development Forum & Expo, Houston, TX. (April 26-29, 2006)
79) "Water Purification with Nanostructured Membranes" VIII International Physics Symposium, Monterrey, Mexico. (February 16-18, 2006)
80) "How the Presence of Nanoparticles Control the Reactivity/Mobility of Biological Materials" Nano Tox Conference, Boston, MA. (April 24, 2006)
81) "The Chemistry Behind Explosives and the Application of Nanotechnology" Tactical Operations Division, Houston Police Department, Houston, TX. (September 11, 2006)
82) "Big Energy Solutions with Complex Licensing Issues" Licensing Executives Society, New York, NY. (September 10, 2006)
83) "Catalysts and SWNT Modification: Towards a Vision of SWNT Amplification" ACS Conference, San Francisco, CA. (September 12, 2006)
84) "Growth of Single Walled Carbon Nanotubes from Seeds" Trinity College, Dublin, Dublin, Ireland. (December 7, 2006)
85) "Fullerene Amino Acids as a Passport for Peptides Through Cell Membranes" University College Dublin, Dublin, Ireland. (December 8, 2006)
86) "Intellectual Property: Issues and Solutions", Baker Institute and Texas/UK Collaborative, Rice University, Houston, TX. (January 22, 2007)
87) "Energetic Materials", Strategic Partnership for Research in Nanotechnology, University of Houston, Houston, TX. (February 6, 2007)
88) "The Barron Research Group: Tackling Problems in Health and Energy Using Nanotechnology", Rice University, Houston, TX. (February 22, 2007)
89) "Rice's View of an Energy Future", Energy Innovation Academic Roundtable, San Francisco, CA. (March 8, 2007)
90) "Nanotechnology Commercialization and IP Issues", Nanoforum, Milan, Italy. (September 18, 2007)
91) "An Overview of Energy-Related Programs at Rice", Rice Alliance for Technology and Entrepreneurship, Houston, TX. (September 27, 2007)
92) "Presentation of Research and Q&A for the Beverage Institute for Health and Wellness", Rice University, Houston, TX. (September 28, 2007)
93) "A Vision of SWNT Amplification", NanoTX'07 Conference and Expo, Dallas, TX. (October 4, 2007)
94) "Nano Applications for Lockheed Martin", Rice University, Houston, TX. (October 12, 2007)

95) "Rice University Energy Vision", Next Generation Biofuels, Greater Houston Partnership/UK Trade & Investments, Houston, TX. (October 15, 2007)
96) "Recent Developments in Energy Research at Rice University", Texas/UK Research Collaborative Meeting, Glasgow, Scotland. (October 22, 2007)
97) "Academic and/or Company Research", Windsor Energy Group: Global Energy-Policy Needs and Priorities, Houston, TX. (November 6, 2007)
98) "Down Hole Nano: Investigating Nanotechnology in the Petroleum Reservoir", Baker Institute, Rice University, Houston, TX (January 8-9, 2008)
99) "Amplification of Carbon Nanotubes: A Problem in Understanding Catalysis", Texas Christian University, Dallas, TX. (January 15, 2008)
100) "The Unique Properties of Nano Materials Enable Alternative Approaches to Therapeutic Agents", Alliance for Nanohealth, Baker Institute, Rice University, Houston, TX. (March 17, 2008)
101) "NanoEnabled Intracellular and Trans-dermal Drug Delivery", DARPA Meeting on Nanohealth, M. D. Anderson Cancer Center, Houston, TX. (March 24, 2008)
102) "Down Hole Nano", BP-Rice University Meeting, Rice University, Houston, TX. (March 31, 2008)
103) "Single Walled Carbon Nanotubes: Metal Ion Interactions and Composite Applications", 2008 NanoMaterials for Defense Conference, Arlington, VA. (April 21-23, 2008)
104) "Revolutionizing Solar Energy", New Orleans Investment Conference, New Orleans, LA. (November 15, 2008)
105) "Carboxylate Alumoxanes - Modeling Calalysts, Surfaces, and Nanoparticles", Afton Chemicals, Richmond, VA. (November 21. 2008)
106) "Future of Energy at Rice University", Texas-United Kingdom Collaborative Workshop, Austin, TX. (January 25, 2009)
107) "Small Things, Big Changes", Windsor Energy Group, London, England. (March 8, 2009)
108) "Proving Covalent Attachment to Carbon Nanotubes", PittCon Conference and Expo, Chicago, IL. (March 12, 2009)
109) "Fabrication Approaches", American Physical Society, Pittsburgh, OH. (March 14, 2009)
110) "Nanotechnology for the Oil & Gas Industry." Houston Technology Center, Houston, TX. (September 18)
111) "Reactive Nanoparticle Materials for Enhanced Warfighter Operational Capabilities" Naval Surface Warfare Center, Panama City, FL. (October 8, 2009)
112) "Nanotechnology Investing: Where Is It Going?" New Orleans 2009 Investment Conference, New Orleans, LA. (October 10, 2009)
113) "An Academic Perspective of Collaboration: Bringing the Human Element to the Front." King Abdullah University of Science and Technology, Riyadh, Saudi Arabia. (November 1, 2009)
114) "Environmental Catalysis and Nanotechnology" to Nankai University Delegation Meeting, Rice University. (January 21, 2010)
115) "Patent Pooling in Energy and Nanotechnology". Energy R&D and Intellectual Property in the New "Green Economy", Baker Institute, Rice University. (January 26, 2010)
116) "Applications of Connexions in Teaching", Connexions Conference, Rice University. (February 2, 2010)
117) "Applications in Energy", Rice Alliance for Technology and Entrepreneurship, Rice University. (February 18, 2010)
118) "Challenges for the Future of the Automobile". Galveston College, Galveston, TX. (March 24, 2010).
119) "One Man's Inhibition is a Blind Man's Cure", South Texas Section of the American Institute of Chemical Engineers, Rice University. (April 8, 2010)

120) "Innovation in Carbon Capture Through Nanotechnology", Saudi Aramco Technology Symposium, Houston, TX. (October 11, 2010)
121) "Nanotechnology Applications for CO_2 Extraction From Gas Streams", Saudi Aramco Technology Symposium, Houston, TX. (October 12, 2010)
122) "The Evolution of a Serial Entrepreneur in Nanotechnology", The Rice Alliance Nanotechnology and Sustainability Venture Forum, Duncan Hall Atrium, Rice University, February 17, 2011
123) "How We Take Nanotechnology to Market", The MIT Enterprise Forum, McMurtry Hall, Rice University, February 16, 2011
124) "SWNT Amplification: Concepts and Results" Guadalupe Workshop on Nucleation and Growth Mechanisms of Single Wall Carbon Nanotubes (SWCNT), Boerne, TX, (April 12, 2011)
125) "Can Nanotechnology Provide a New Approach to Oil and Gas Shale Production?", Ryder Scott Reserves Conference, Houston, TX, (September 16, 2011)
126) "How Can Nanotechnology Make Your Frac More Productive, Environmentally Friendly, and Less Open to Litigation?", American Association of Mineral Owners, Houston, TX (September 15, 2011)
127) "Can Nanotechnology Provide a New Approach to Oil and Gas Shale Production?", Platts 6th Annual Oil & Gas Shale Developer Conference, Houston, TX (June 21, 2011)
128) "Nano Technology & Shale Gas Production", Korean-American Energy E&P Society, Houston, TX (November 4, 2011)
129) "Nanotechnology Has the Potential to Provide Power to the World", Pioneer Oil Producers Society, Houston, TX (November 21, 2011)
130) "How Can Nanotechnology Make Your Play More Productive, Environmentally Friendly, and Less Open to Litigation?", The Energy Forum Frontier Plays 2011, Farmers Branch, TX (September 14, 2011).
131) "Saving the E & P Industry, Nano Style", EPNano Net Summit, Houston, TX (June 22, 2011).
132) "More Oil, More Gas, Less Water", Presentation to National Science Foundation workshop on hydraulic fracturing, Washington, DC (May 15, 2012)
133) "Nanotechnology: More Oil, More Gas, Less Water, Less Pollution", Invited speaker at the Roughneck Camp Conference, Schlumberger-WesternGeco Office, Houston, TX (June 28, 2012)
134) "How nanotechnology can create more value and less risk in the energy industry", Presentation at the Houston ASA Energy Valuation Seminar, Houston Chapter of the American Society of Appraisers, Houston, TX (September 13, 2012)
135) "Creating Successful Technology Spin-Out Through Different Worlds", Celtic Alliance for Nanohealth, Venture Forum Swansea 2012, Swansea, UK (September 26, 2012).
136) "Turning Innovation into a Commercial Reality", BioWales 2013: Unveiled Connectivity Delivering Tomorrow's Health Solution, UK (March 19, 2013)
137) "Nanoparticle Chemistry for Water Treatment - Health and Energy Applications", Center for the Environmental Implications of Nanotechnology, Duke University, Durham, NC. (April 10, 2013)
138) "New Technology for a Better Oil and Gas Future", 11th Annual Forum of the Korean-American Offshore Engineers Association (May 9. 2013)
139) "Produced Water from Shale Oil", BlueTech Webinar Series (June 27, 2013)
140) "What Can Nanotechnology Do for the Oil and Gas Industry?", The Society of Petroleum Engineers Research and Development, Houston, TX (October 3, 2013)
141) "Analysis, treatment and tracing of frac and produced water.", American Chemical Society Symposium, 44th American Chemical Society, Western Regional Meeting, Santa Clara, CA (October 4, 2013)

142) "Metal coordination to oxidized fullerene and carbon nanotubes as routes to water purification/metal reclamation", American Chemical Society, Baylor University, Waco, TX (November 19. 2013)
143) "From Macroscopic Coatings to Molecular Treatments of Surfaces: How Can an Understanding of Nano Help With Corrosion?", CORROSION 2014 Conference, San Antonio, TX. (March 8, 2014)
144) "Evolution of Serial Entrepreneurs", Friends of the Fondren Library, Houston, TX (October 2, 2014).
145) "From Macroscopic Coatings to Molecular Treatments of Surfaces: How Can an Understanding of Nano Help With Corrosion?" CORROSION 2014 Conference, held in San Antonio, TX. (March 8, 2014)
146) "Imaging a Frac and Tracing the water Using Nanotechnology", Korean-American Energy E&P Society Meeting, Houston, TX, (November 2014)
147) "Nanotechnology for Enhanced Oil Recovery". Moderator and Presentation, Maximizing Oil Recovery: Boosting Production, UK Trade and Investment Breakfast Briefing, Houston, Texas. (May 5, 2014)
148) "The Global Skilled Workforce Shortage in the Energy Industry", Swansea University, Wales, UK (October 27, 2014)
149) "Design of Super Hydrophilic Membranes for Non-Fouling Treatment of Frac and Produced Water" Shell Technology Center Produced Water Symposium in Galveston, TX (May 20, 2015).
150) "What's Up? (Science United for Philanthropy)", Advanced Materials Workshop: Transcending Incrementalism, Texas A&M University (June 23, 2015).
151) "Fullerene Based Amino Acid and peptides: Designing Drug Delivery and Interactions", 3rd International BAU Drug Design Congress, Istanbul (October 2015).
152) "Energy Safety Research Institute (ESRI): Building Bridges to Sustainable Energy", University of Brunei Darussalam (May 2016).
153) "Copper/CNT Composites", Rice University (July 2016).
154) "SWNT Amplification: Concepts and Results" Guadalupe Workshop on Nucleation and Growth Mechanisms of Single Wall Carbon Nanotubes (SWCNT)", University of Vilnius, Lithuania (September, 2016).
155) "Flexible and Integrated Energy Systems: a smart opportunity" Welsh Government's Horizon 2020 Annual Event, Cardiff (March 2017).
156) "Fracking: The Good the Bad and the Ugly" Pennard Mens Club (March, 2017).
157) "Creating Research Opportunities through Ser Cymru II", SER Cymru II: Celebrating and Growing" Cardiff, (February 2017).
158) "Fracking: The Good the Bad and the Ugly" Swansea U3A (March, 2017).
159) "Electronic Measurements of Single- and Multi-Walled Carbon nanotubes: Evidence for Unusual Behaviour at Nanotube-Nantibe Junctions" 231st ECE Meeting, New Orleans (May 2017).
160) "Energy Safety Research Institute", EPSRC UK Nanotube Collaborative Inaugural Workshop, ESRI (March 2017)
161) "Next Generation of Energy Distribution: Electronic measurements of CNTs and copper-CNT composite fabrication", NCEM-5.4, Wolfson College, Cambridge (July, 2017).
162) "Fracking: The Good the Bad and the Ugly" Bishopston Men's Society (September, 2017).
163) Keynote speaker EcoBalt 2018 "Flexible approaches to water treatment and metal remediation: from a village to the oil patch" Vilnius, Lithuania (October 2018).
164) "The need for water re-use", British Council's Science Collaboration Symposium, Kuwait (March 2018).
165) "Copper/Carbon Nanotube Ultraconductive Wire: Conduction, Processing, and Stability", Knoxville, USA (December 2018)
166) "Possible game-changers – making carbon capture and storage commercial" Windsor Energy Group, Windsor Castle (March 2019).

167) “Helping welsh industries to reduce carbon dioxide emissions and drive a stronger, greener economy”, Storytelling and the Environment Symposium, The George Ewart Evans Centre for Storytelling, Cardiff (April 2019).
168) “Large scale carbon sequestration – making carbon capture and storage commercial”, Transcending Incrementalism, ESRI, Swansea, UK (April 2019).
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