

Biography (2014)

Dr. John R. Scully
Charles Henderson Chaired Professor of Materials Science and Engineering
Co-director Center for Electrochemical Science and Engineering
The Department of Materials Science and Engineering
The University of Virginia

Born

October 4, 1958
Baltimore, Maryland

Research and Professional

Education

Doctor of Philosophy in Materials Science and Engineering,
The Johns Hopkins University, Baltimore, MD, May 1987.

Master of Engineering Science in Materials Science and Engineering,
The Johns Hopkins University, Baltimore, MD, May 1983.

Bachelor of Engineering Science in Materials Science and Engineering,
The Johns Hopkins University, Baltimore, MD, May 1980.

Professional Experience

Charles Henderson Chaired Professor, 2009-present

Full Professor, 2000-present

Associate Professor, 1995-2000

Assistant Professor of Materials Science and Engineering, 1990-1995

University of Virginia, School of Engineering and Applied Science,

Department of Materials Science and Engineering, Charlottesville, VA 22904-4745

Phone: 434-982-5786, FAX: 434-982-5799

Senior Member of Technical Staff

April 1988 to November 1990

Sandia National Laboratories -Metallurgy Department, Albuquerque, NM 87185

A.T.& T. Bell Laboratories (Visiting Research Scientist from Sandia)

April 1988 to December 1988

Materials Reliability and Electrochemistry Research Department -Dept 11534, Murray Hill, NJ 07974

Ship Materials Engineer

July 1982 to April 1988

David W. Taylor Naval Ship Research and Development Center, Marine Corrosion Branch,
Code 2813, Annapolis, MD 21402

Graduate Research and Teaching Assistant

Full-time: January 1979 to July 1982, Part-time: July 1982 to May 1987

The Johns Hopkins University, Department of Materials Science and Engineering,
Baltimore, MD 21218

Professional Society Memberships and Activities

The National Association of Corrosion Engineers

Technical Editor of CORROSION, Jan. 2012-present

Past-chairman, NACE Awards Committee, (2008-2010)

Co-organizer NACE Topical Research Symposium 2003, with D. Shoesmith

Co-organizer NACE Topical Research Symposium 2001, with J. Frankel

Chairman, NACE Awards Committee, 2005-2008

Vice-chairman, NACE Awards Committee, 2002-2005

Chairman of H.H. Uhlig Award Subcommittee, 2000-2003

Member of the Board of Review for Corrosion Journal., 1996-2011

Chairman of the NACE Research Committee, 1997-2000

Member Technical and Research Activities Committee, 1997 -present

Vice-chairman Research Committee, 1995-96

Member of the NACE Research Committee, 1988-2003

Chairman - T3-E Symposium, Corrosion/97

Vice-chairman - T3-E Symposium, Corrosion/96

Chairman - NACE Research and Progress Symposium, 1995

Session Organizer - General Session, NACE Research in Progress Symposium, 1994

Session Organizer - Nucleation Phenomena in Corrosion, NACE Research in Progress Symposium, 1993

Chairman, T3-L Symposium, Corrosion/90

Vice-Chairman, T3-L Symposium, Corrosion/89

Chairman, T3-L Workshop, Corrosion/88

Chairman, Student Poster Session, Corrosion/1990-91

Vice-Chairman, Student Poster Session, Corrosion/1989

Chairman of the Baltimore-Washington Section, 1987-88

Vice-Chairman of the Baltimore-Washington Section, 1986-87

The Minerals, Metals and Materials Society (TMS) and The American Society for Metals

Board of Review of Metallurgical and Materials Transactions, 1994-2002

Baltimore Chapter Program Chairman, 1980-1982

The Electrochemical Society

Co-organizer, Amorphous Metals and Nanocrystalline Materials Symposium, 2008

Co-organizer, Stress Effects on Electrochemical Processes, 2007

Co-organizer, Perspectives in Corrosion Science and Engineering Symposium, 2002

Member, Publications Committee, 1999-2003

Chairman and Organizer, "Corrosion and Corrosion Protection of Light Metals and Alloys and Composites Symposium," Corrosion/Electrodeposition Divisions, October 1995

Chairman and Organizer, "Environmentally Enhanced Fracture Symposium," Corrosion Division, October 1990

Session Chairman, General Corrosion Session, 1989, 1992, 1993

Session Chairman, Localized Corrosion Symposium, 1991, 2008

The American Society for Testing of Materials

Book section-editor: "Manual on Corrosion Tests and Standards, Analysis and Interpretation" June, 2001-03.

Chairman, Electrochemical Techniques Subcommittee, G1.11, 1984 to 1992

Co-chairman, 1st International Symposium on Electrochemical Noise, STP 1277, 1994

Co-chairman, 1st International Symposium on Electrochemical Impedance and editor of Special Technical Publication 1188, 1991

Book section-editor: "Manual on Corrosion Tests and Standards, Analysis and Interpretation" June, 1995.

Professional Interests

Conducts research emphasizing interdisciplinary studies of corrosion electrochemistry, passivity and passivity breakdown, stress corrosion, hydrogen entry and hydrogen interactions in ferrous, nickel, aluminum, magnesium, and titanium-base alloys and model materials. Also, actively investigating the electrochemistry and passivity of intermetallic phases.

Consulting

Galson Science UK (2011-2012)

NWMO of Canada (2013-2014)

RWMO of UK (2014)

DNV (for Petrobras) 2012-2013

Mandaree (for CERL), 2010, 2012-2013

ARCO Oil and Gas Company, 1991

Henkel Chemical Company, 1991

Sperry Marine, 1990

General Electric Corporate R&D, 1992-93

Carter Brown and Osborne Law Offices, 1992-93, 1998

Peter Richardson Law Offices, 1992

Digital Equipment Co., Inc. 1992

Knolls Atomic Power Lab., 1993

Eakin and Richardson Law Firm, 1994-95

Optimetrics Inc. (U.S. Army - Liquid Propellant Canon), 1995-96

Metals Samples, Inc., 1997

L3 Communications, 1997-98

NCI Corporation, 1997-99

TRW Environmental Safety Systems, 1997-98

Metal Container Corp., 1998
Medtronics Corp., 1999, 200-2012, 2013
3M Company, 1999
Lockheed Martin Idaho Technologies Co., 1999
Walker Law Offices, 1999
Carter, Brown, Osborne Law Firm, 2000
Wilson, Hajek & Shapiro, P.C., 2001
Ferris, Eakin, and Brown Law Firm, 1999
Day, Berry, and Howard Law Firm, 2000-2001
Schochor, Federico and Staton Law Firm, 2000-2003
Bell, Boyd, and Lloyd Law Firm, 2000-2001
Pratt & Witney Aircraft Co., 2000-2001
Nalco Chemical Co., 2000-2001
Gentry, Locke, Rakes & Moore, 2004-2005
Consultant Columbia Accident Investigation Board (via Valador), 2003
Apple Computer, Inc., 2005-07
United Technologies, Inc. 2006-07
Spriggs and Hollingsworth, 2006-2008
Baker-McKenzie, 2006-2007, 2009
Petrobras, 2006-2007; 2012
CCI Corporation, 2006-2007
Southwest Research Inst. 2006-2007
LUNA Innovations, 2000-2012
S&KT Corporations, 2002-2005
Faratech, 2000-2011
Winthrop and Weinstine 2007
Chinese Drywall Litigation MDL, 2009-2010

Other Professional Activities

Advisory Boards

1. Review of Corrosion Issues for Radioactive Waste Management Organization of UK (RWMO), (2014)
2. Review of Copper Corrosion for Swedish Nuclear radiation safety Authority (SSM), (2011-2012)
3. Review of Copper Corrosion for NWMO, Canada (2012-13)
4. Corrosion Research and Engineering Study Group Member (ROCSE) National Academy of Science - National Materials Advisory Board (2008-10)
5. Corrosion Education Study Group Member (ACE), National Academy of Science - National Materials Advisory Board (2007-08)
6. Corrosion Education Workshop Co-organizer, National Academy of Science - National Materials Advisory Board (2007)
7. DOE-DES and OCRWM Joint Workshop on Needs, Gaps and Opportunities in Corrosion Science Pertinent to Nuclear Waste Disposal Engineered Waste Barriers, 2004

8. Defense Science Board on Corrosion Issues in the DOD, reporting to the Undersecretary of Defense, USA., Special Government Employee, (2004-2005)
9. Defense Science Board on Air Force Refueling Aircraft, reporting to the Undersecretary of Defense, USA., Special Government Employee, (2004-2005)
10. Visiting Committee of the Department of Materials Science and Engineering at the Ohio State University, 2002-2008.
11. Technical Consultant to Columbia Accident Investigation Board, 2003
12. DOE Advisory Committee for Nuclear Facilities Safety: - Structural Integrity of Defense Nuclear Reactors at Savannah River, SC, and Hanford, WA. 1989.
13. DOE International Waste Package Degradation Elicitation Expert Panel Member: Materials Issues Concerning Engineered Barriers for the High Level Nuclear Waste Repository Site at Yucca Mountain (TSPA-97 Waste Package Expert Elicitation Project). 1997-1998.
14. Advisor to U.S. Nuclear Waste Technical Review Board, 1997.
15. DOE Nuclear Energy Research Initiative- Review Panel, March, 1999.
16. DOE Consultant on Corrosion of Spent Nuclear Fuels in the Interim Fuel Storage Facility, 1999.

Editorial Boards of Scientific Journals

Technical Editor-in-Chief from 2012-
CORROSION Journal

Board of Review of Metallurgical and Materials Transactions
Elected term from 1994-2003

Board of Review of Corrosion Journal (Associate Editor)
Elected term from 1996-2012 (ongoing)

Advisory Board of Materials and Corrosion
Term from 2004-present (on-going)

Patents or Patent Disclosures

Magnetic Impedance Sensing of Corrosion” Moran, Hartong, Murphy, Bundy, Scully (1988).

A Multi-functional Al-Co-Ce Alloy for Corrosion, Shiflet, Poon, Scully (2005).

University Service Activities

Committees – Univ.

1. Vice-president of Research Committee – Ethics and Misconduct (2008-)

Committees - SEAS

1. SEAS Promotion and Tenure Committee, member (2007-2010)
2. SEAS Graduate Studies Committee, 1993-96
3. Dean’s Research Advisory Committee, 1996-2001
4. Dean’s Research Advisory Committee (chair), 1999-2000
5. SEAS Undergraduate Studies Committee, 1998-2002
6. SEAS Open-house, faculty participant (various)

7. SEAS Faculty Mentor – Tau Beta Pi (2002-2006)
8. SEAS URDS committee (2013)

Committees - Department

1. Chair – fracture and fatigue tenure track faculty position 2013-14
2. Chair – Alcoa Supported Faculty Recommendation Committee 2013
3. Chair, Long range planning committee, Department of Materials Science and Engineering 2002-2008
4. Curriculum Committee, Department of Materials Science and Engineering 1992-present
5. Undergraduate MSE Option Committee (Chair), Department of Materials Science and Engineering 1994-2004
6. Undergraduate Advisor for Materials Science Option (Minor) Students in the Engineering Science Curriculum, 1992-2001
7. Undergraduate First Year Advisor, 1993-1997
8. Engineering School Common Reading Experience, 1993
9. Mechanical Metallurgy Hire Faculty Search Committee, 1999-2000
10. Merit–Base faculty Review Committee, 1999
11. Graduate Student Recruitment Committee, 1996-present
12. MSE Open House Coordinator (1995-2001)
13. Head, Search Committee, MURI Faculty Hire, 2002
14. SEAS Faculty Advisor, Tau Beta Pi National Engineering Honor Society, 2000-2003
15. Member, Committee on Redirection of Engineering Science Major, 2005
16. Nanoscale Characterization Facility Equipment Committee

Teaching

Corrosion, Batteries, Fuel Cells and Super-capacitors, Undergraduate Engineering Technical Elective presented to all engineering majors as a technical elective. 2000-2014, over 300 students from other engineering disciplines besides MSE

Materials Characterization, 2013 taught to SEAS graduate students

Advanced Corrosion, Ph.D. level class focusing on Electrochemical Aspects of CORROSION, 1991-2012; 120 participants at Ph.D. level

Numerous short courses on Corrosion Electrochemistry and AC Impedance, 1988-2002; >600 participants

Materials Science and Engineering, 1990-2000; Undergraduate Engineering Technical Elective presented to all engineering majors as a technical elective. 1992-2002, over 400 students from other engineering disciplines besides MSE

Materials Characterization 2009, 2013: Graduate Class

Awards and Honors

Faraday Discussion “*Corrosion Chemistry*” Closing Lecturer, 2015 London UK

U.R. Evans Award, “*for Corrosion Science*,” U.K. Institute of Corrosion, (2013).

Lee Hsun Lecture Award, Institute of Materials Research (IMR), Chinese National Academy of Science (2012).

W.R. Whitney Award (from NACE) for recognition of career achievements based on scientific advances in corrosion science and engineering (Awarded 2012)

H.H. Uhlig Award (from ECS) for recognition of career achievements based on scientific advances in corrosion science from the Electrochemical Society (Awarded 2009)

Charles Henderson Chaired Professor, Materials Science and Engineering (Elected 2008)

Fellow of the Society, American Society for Metals (ASM) – (Elected 2007)

Fellow of the Society, National Association of Engineers (NACE) –International (Elected 2002)

Fellow of the Society, The Electrochemical Society (ECS) – International (Elected 2005)

Francis LaQue Award, For outstanding contributions in the Science of Corrosion (ASTM), 2005.

1997 H.H. Uhlig Award of National Association of Engineers (from NACE) - Recognition of Outstanding effectiveness in post-secondary, corrosion education either at the undergraduate or graduate level as exhibited by young educators who excite their students through outstanding and innovative teaching in corrosion.

David A. Harrison, Jr. Faculty Recognition Award (Univ. Of Virginia) - recognizes outstanding faculty dedication to teaching, teaching through research, and service to the University community.

1995 William H. Blum Award of the National Capitol Section of the Electrochemical Society - For original contributions to the science and/or technology of corrosion and/or electrochemical sciences.

National Science Foundation Presidential Young Investigator Award - 1993-98

Oak Ridge Junior Faculty Enhancement Award - Engineering; for Stress Corrosion Cracking Research, 1992

A.B. Campbell Award, NACE; Best Science or Engineering Paper in a National Association of Corrosion Engineers Journal by an author under 35 years of age, 1985

ASTM Award of Appreciation, 1986

Department of Defense Outstanding Performance Award - 1983, 1985, 1986, 1987

Tau Beta Pi National Engineering Honor Society - Elected 1980

Omicron Delta Kappa - Elected 1980

Publications and Lectures

**Google Scholar: Citations=6576 H-index=43; i10 index=131; citations in 2014: 575
date of record: 12/31/14**

CORROSION journal Editorials (these are citable articles with a DOI; they are not peer reviewed)

7. J.R. Scully, Corrosion Celebrates the Inaugural Publication of Poster Award Research Letters, Corrosion 70 (12), 1171-1171 (2014).

6. J.R. Scully, Corrosion's Impact Factor Leads the Field in Percentage Improvements Corrosion 70 (9), 871-871 (2014).

5. J.R. Scully, Corrosion Celebrates its Support of CORROSION 2014 and the Student Poster Session, Corrosion 70 (2), 111-111 (2014).

4. J.R. Scully, Corrosion Impact Factor on the Rise Corrosion 69 (8), 743-743 (2013).

3. J.R. Scully, Elapsed Time Period from Submission to First Decision Corrosion 69 (1), 3-3 (2013).

2. J.R. Scully, Online Early Preprints Corrosion(Houston) 68 (8), 675-675 (2012).

1. J.R. Scully, Two "New" Categories of Papers Welcomed in CORROSION Corrosion(Houston) 68 (4), 1-1 (2012).

Refereed Journal Articles (underline indicates GRA, PDRA, or UGRA co-author),

178. K. Gusieva, C.H.J. Davies, J.R. Scully, N. Birbilis, Corrosion of magnesium alloys: the role of alloying, International Materials Reviews. (accepted 2014).

177. R.F. Schaller, S. Thomas, N. Birbilis, J.R. Scully, Spatially resolved mapping of the relative concentration of dissolved hydrogen using the scanning electrochemical microscope, Electrochemistry Communications 51, 54-58. (accepted 2014).

176. A.D. King, J.S. Lee, J.R. Scully, Galvanic Couple Current and Potential Distribution between a Mg Electrode and 2024-T351 under Droplets Analyzed by Microelectrode Arrays, Journal of The Electrochemical Society 162 (1), C12-C23 (accepted 2014).

175. M.L. Tayler, M Blanton, C Konecki, J Rawlins, JR Scully, Scribe Creep and Underpaint Corrosion on Ultra High Molecular Weight Epoxy Resin Coated 1018 Steel

(UNS G10180) Part II: Scribe Creep Model as a Function of Environmental Severity Factors," *Corrosion J* (2014). Accepted 2014.

174. M.L. Tayler, M Blanton, C Konecki, J Rawlins, JR Scully, Scribe Creep and Underpaint Corrosion on Ultra High Molecular Weight Epoxy Resin Coated 1018 Steel (UNS G10180) Part I: Comparison of Scribe Creep in Lab and Field Tests," *CORROSION*, 71(1), pp. 71-91 (2015). Accepted, 2014. doi: <http://dx.doi.org/10.5006/1348>

173. V. Shirskiy^[b], A.D. King^[c], O. Gharbi^[b], P. Volovitch^[b], J.R. Scully^[c], K. Ogle^[b] and N. Birbilis^{*[a]} Revisiting the electrochemical impedance spectroscopy of magnesium using online ICP-AES, *ChemPhysicalChem*, accepted (2014).

172. L.G. Bland, A.D. King, N. Birbilis, and J.R. Scully, "Assessing the Corrosion of Commercially Pure Magnesium and Commercial AZ31B by Electrochemical Impedance, Mass-loss, Hydrogen Collection and ICP-OES Solution Analysis," *CORROSION*. (2014). accepted.

171. T. Cain, L. Bland, N. Birbilis, J.R. Scully, A Compilation of Corrosion Potentials for Mg alloys and Phases, *CORROSION*, 70(10), pp. 1043-1051, (2014).

170. N. Birbilis, A.D. King, S. Thomas, G.S. Frankel, J.R. Scully, "Evidence for enhanced catalytic activity of magnesium arising from anodic dissolution," *Electrochem. Acta*, accepted, 132, pp. 2777-283, <http://dx.doi.org/10.1016/j.electacta.2014.03.133> (2014).

169. Madden, S.B., and J.R. Scully. "Inhibition of AA2024-T351 Corrosion Using Permanganate." *Journal of The Electrochemical Society* 161(3) (2014): C162-C175. Impact Factor of Journal of the Electrochemical Society: 2.588 (5 yr IF - 2.59)

168. Schaller, R. F., and J. R. Scully. "Measurement of Effective Hydrogen Diffusivity Using the Scanning Kelvin Probe." *Electrochemistry Communications*, 40(3), pp. 42-44, (2014). Impact Factor of Electrochemistry Communications: 4.425 (5 yr - 4.950)

167. King, A. D., N. Birbilis, and J. R. Scully. "Accurate Electrochemical Measurement of Magnesium Corrosion Rates; a Combined Impedance, Mass-Loss and Hydrogen Collection Study." *Electrochimica Acta*, 121(3), pp. 394-406, (2014). Impact Factor of Electrochimica Acta: 3.777 (5 yr-4.088).<http://dx.doi.org/10.1016/j.electacta.2013.12.124>

166. D. J. Horton and J. R. Scully, "Crystallographic Controlled Dissolution and Surface Faceting in Disordered FCC Fe₅₀Pd₅₀" *Materials Research Society Communications – Research Letters*, 4(3), pp. 113-119, doi:10.1557/mrc.2014.23, September (2014).

165. D. J. Horton and J. R. Scully, "Crystallographic Controlled Dissolution and Surface Faceting in Disordered FCC Fe₅₀Pd₅₀" *Metall and Mater. Trans A*, in preparation (2013).

164. X.B. Chen, T. Cain, J.R. Scully, N. Birbilis, Technical Note: Experimental Survey of Corrosion Potentials for Rare Earth Metals Ce, Er, Gd, La, and Nd as a Function of pH and Chloride Concentration, *Corrosion* 70 (4), pp. 323-328 (2013).

163. H. Cong and J. R. Scully, "Effects of Aluminum Solids on the Under Deposit Corrosion of Copper in Synthetic Potable Water: the Arguments for and Against a Semi-permeable Membrane," *J. Electrochem. Soc.* 160(9), pp. C1-C11, (2013).

162. A.D. King and J. R. Scully, Environmental Degradation of a Mg-Rich Primer in Selected Field and Laboratory Environments - Part I. Without a Topcoat, *CORROSION J.*, 70(5) pp. 512-535, doi: <http://dx.doi.org/10.5006/0988>, (2013).

161. A.D. King and J. R. Scully, Environmental Degradation of a Mg-Rich Primer in Selected Field and Laboratory Environments - Part II. Primer and Topcoat, *CORROSION J.* 70(5), pp. 536-557, doi: <http://dx.doi.org/10.5006/0989>, (2013).

160. Derek Horton, Hung Ha, Hannah Bindig, John Scully, "Tarnishing and Cu Ion release In Selected Copper-Base Alloys: Implications of Alloying Elements Towards Anti-Microbial Functionality," submitted to *Electrochimica Acta*.

159. Hung M. Ha, Jiahe Ai and John R. Scully, Effects of Prior Cold Work on Hydrogen Trapping and Diffusion in API X-70 Line Pipe Steel during Electrochemical Charging, *CORROSION*, 70(2), pp. 166-184, doi: <http://dx.doi.org/10.5006/0990> (2014).

158. S. Jain, M.C. Lim, J.L. Hudson, J.R. Scully, "Effects of constituent particles and sensitization on surface spreading of intergranular corrosion on a sensitized Al-4.4Mg alloy, *Electrochimica Acta*, <http://dx.doi.org/10.1016/j.electacta.2013.06.036>, 108, Oct., pp. 253-264 (2013).

157. R.P. Gangloff, H Ha, J. Burns, J.R. Scully, Measurement and Modeling of Hydrogen Environment Assisted Cracking in Monel K-500, *Metall. And Materials Transactions, A*, 45(A), 7; <http://dx.doi.org/10.1007/s11661-014-2324-z> (2014).

156. R. Holloman, V.S. Deshpande, A. Hanssen, K. Fleming, J.R. Scully and Haydn N.G. Wadley "Tubular Aluminum Cellular Structures: Fabrication and Mechanical Response" *The Journal of Mechanics and Materials of Structures (J. of Mech. And Matl. Structures)* 8(1) pp. 65-94 (2012).

155. N. Birbilis, M.L.C. Lim, R.K. Gupta, C.H.J. Davies, S.P. Lynch, R.G. Kelly and J.R. Scully, "Quantification of sensitization in AA5083-H131 via imaging Ga-embrittled fracture surfaces," doi: http://dx.doi.org/10.5006/0804_CORROSION, 69(4), pp. 396-402 (2012).

154. M.F. Hurley, J.R. Scully, "Lateral and Radial Corrosion Propagation Behavior of 9-21% Cr and 18% Cr + 2.8% Mo Stainless Steel Reinforcing Materials in Simulated

Concrete Environments" Materials and Corrosion, 63 DOI 10.1002/macro.201206737, pp. 1-13 (2012).

153. J.R. Scully, W.L. Harris, "Opportunities and Challenges in Corrosion Education: Review of a National Research Council Assessment," The Electrochemical Society Interface, pp. 55-59. Spring (2012).

152. K.M. Fleming, A. Zhu, J.R. Scully, "Corrosion of AA 6061 Brazed with an Al-Si Filler: Effects of Si on Metallurgy and Corrosion, CORROSION, 68(12), pp. 1126-1145, (2012).

151. Jia-He Ai, J.R. Scully, "Hydrogen Diffusivity in High Purity Aluminum Under Corroding Conditions," CORROSION, 69(8), pp. 752-767. doi: <http://dx.doi.org/10.5006/0826> (2013).

150. Jiahe Ai, M.L. Lim, J.R. Scully, "Hydrogen Permeation Behavior in an Al-Mg alloy (AA 5083) as a function of Degree of Sensitization and Orientation," CORROSION, 69(12), pp. 1225-1239, <http://dx.doi.org/10.5006/0987> (2013).

149. H. Ha, J.R. Scully, "Effects of Phosphate on Pit Stabilization and propagation in Copper in Synthetic Potable Waters," Corrosion 69(7), pp. 703-718 doi: <http://dx.doi.org/10.5006/0883>, (2013).

148. H. Ha, J.R. Scully, "Artificial Pit Studies on Effects of Bulk Solution Composition Changes on Copper Pitting Propagation in Synthetic Potable Water," J. Electrochem. Soc., 159(12), C1-C12, (2012).

147. M.L. Lim, S. Jain, R.G. Kelly, J.R. Scully, "Intergranular Corrosion Penetration in AA 5083 as a Function of Electrochemical and Metallurgical Conditions, Corrosion, 69(1) doi: <http://dx.doi.org/10.5006/0722>, pp. 35-47, (2013).

146. J. Ai, H. Ha, R.P. Gangloff and J.R. Scully, "Hydrogen Diffusion and Trapping in a precipitation hardened nickel-copper-aluminum alloy Monel K-500 (UNS N05500)" Acta Metallurgica, 61, pp. 3186-3199, <http://dx.doi.org/10.1016/j.actamat.2013.02.007>, (2013).

145. S. Jain, M.C. Lim, J.L. Hudson, J.R. Scully, "Surface Spreading of Intergranular Corrosion on AA 5083," Corrosion Science, <http://dx.doi.org/10.1016/j.corsci.2012.02.018>, (59), pp. 136-147, (2012).

144. D. Horton, J.R. Scully, "The Effect of the Amorphous and Crystalline States on Preferential Corrosion of Hf from a Cu75Hf20Dy05 Alloy", Metall. and Mater. Trans. A. August 2012, 43, Issue 8, pp 2706-2720. <http://rd.springer.com/article/10.1007/s11661-011-1065-5>.

143. H. Ha, C. Taxen, K. Williams, J.R. Scully, "Effects of Applied Potential on Pit Propagation Kinetics on Copper as a Function of Drinking Water Chemistry," J. of the Electrochem. Soc. 159(2), C59-C73 (2012).

142. H. Ha, C. Taxen, K. Williams, J.R. Scully, "Effects of Selected Water Chemistry Variables on Pit Propagation Kinetics in Copper: Connection between Corrosion Product Identity, Properties and Pit Growth Behavior," Electrochimica Acta, [doi:10.1016/j.electacta.2011.04.008](https://doi.org/10.1016/j.electacta.2011.04.008), 56(17): p. 6165-6183 (2011).

141. A. King, J.R. Scully, "Sacrificial Anodic Based Galvanic and Barrier Corrosion Protection of 2024-351 by a Mg-Rich Primer and Development of Test Methods for Remaining Life Assessment" Corrosion J., 67(5), 55004-1 to 055004-22, (2010).

140. N. Tailleart, B. Gauthier, S. Eidelman, J.R. Scully, "Metallurgical and Physical Factors Controlling the Multi-Functional Corrosion Properties of Pulsed Thermal Sprayed Al-Co-Ce Coatings," Corrosion J., 2010 Research Topical Symposium on Coatings, Corrosion 68(3), 035006-1 to 035006-26 (2012); [doi:http://dx.doi.org/10.5006/1.3693697](http://dx.doi.org/10.5006/1.3693697).

139. T. Aburada, J.M. Fitz-Gerald, and J.R. Scully, "Effect of Minor Alloying Element (Ni) on Local Corrosion Behavior (Pitting and Dealloying) of Solute Rich Al-Cu-Mg Metallic Glasses", J. of the Electrochem. Soc., 158(9), pp. C253-C265, (2011).

138. T. Aburada, J.M. Fitz-Gerald, and J. R. Scully, "Synthesis of Nanoporous Copper by Dealloying of Al-Cu-Mg- Amorphous Alloys: Mediation by Minor Nickel Additions Corrosion Science, 53(5), pp. 1627-1632 (2011).

137. N.R. Tailleart, R. Huang, T. Aburada, D.J. Horton, and J.R. Scully, "Effect of Thermally-Induced Relaxation on Passivity and Corrosion of an Amorphous Al-Co-Ce alloy", Corrosion Science, 59, pp. 238-248, (2012). DOI [10.1016/j.corsci.2012.03.012](https://doi.org/10.1016/j.corsci.2012.03.012) (2012).

136. F. Presuel-Moreno, J.R. Scully, and S.R. Sharp, "Literature Review of Commercially Available Alloys that Have Potential as Low-Cost Corrosion Resistant Concrete Reinforcement", Corrosion J. 66(8), pp. 0860001-1 to 13, (2010).

135. H. Cong, J.R. Scully, "Effect of Chlorine Concentration on the Natural Pitting of Copper as a Function of Water Chemistry," J. Electrochem. Soc., 157(5), C200-211, (2010).

134. H. Cong, J.R. Scully, "The Use of Coupled Multi-electrode Arrays to Elucidate the pH Dependence of Copper Corrosion as a Function of Water Chemistry," J. Electrochem. Soc., 157(1), (2010).

133. F. Bocher, R. Huang, J. R. Scully, "Prediction of Critical Crevice Potentials for Ni-Cr-Mo Alloys in Simulated Crevice Solutions as a Function of Mo Content," *Corrosion J.*, 66(5), 55002-1 to 13, (2010).
132. J.H. Macha, J.R. Scully, "Corrosion Properties of Laser-Welded Superaustenitic Stainless Steel Sandwich Structures, *Corrosion*, 65(7), pp 472-490 (2009).
131. S. Jain, Noah D. Budiansky, J.L. Hudson, J.R. Scully, "Surface Spreading of Intergranular Corrosion on Stainless Steels," *Corrosion Science*, 52(3), pp. 873-885, (2010).
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63. J. Scully, "Cooperative Interactions During Localized Corrosion Processes: Experiments, Analysis and Modeling, DOE Contractor meeting, University of Western Ontario, Canada, February, 2002.

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Materials, The Minerals, Metals & Materials Society, materials Research Society, September 21st, 2000.

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51. "Corrosion Allowance Versus Immunity," American Inst. of Chemical Engineers Mtg., Dallas TX, Nov. 1999.

50. "Hydrogen Desorption Mechanisms In Metastable Beta Ti-3Al-8V-6Cr-4Mo-4Zr," Electrochemical Soc. Spring Mtg., Toronto, CA, May, 2000.

49. "Corrosion Mechanisms in Partially Nanocrystalline-Amorphous Alloys," Brown Univ. Div. of Eng., Materials Science and Eng. Seminar, Providence RI, April 17, 2000.
48. "Hydrogen Solubility, Diffusivity and Trapping in High Purity Al and Selected Al-Base Alloys," ICAA 7 Conference, Charlottesville, VA., April 2000.
47. J.S. Scully, "Nanocrystalline-Glass Matrix Aluminum Alloys: Retaining the Macroscopic Corrosion Resistance but not the Nanometer Scale Corrosion Resistance of the Amorphous State," Materials Science and Engineering Seminar, Texas A&M University, Nov. 1999.
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36. S.R. Taylor, A.M. Mierisch, R.G. Leggat, J. Yuan, G. Ilevbare, R.G. Kelly, J.R. Scully, "The Role of Coating and Substrate Heterogeneities in the Long-Term Performance of Painted Aluminum Structures," NACE CORROSION/98, Research in Progress Symposium, San Diego CA, March, 1998.
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27. J.R.Scully, "Criteria for Pit Stabilization and Localized Dissolution Path Connectivity," Catholic University Dept. of Chemistry Seminar, October, 1994, (Invited).
26. J.R.Scully, M.A. Gaudett, D.G. Kolman, J.A. Grandle, B.P. Somerday, R.P. Gangloff, "Hydrogen Environment Embrittlement of High strength β -Titanium Alloys," TMS Hydrogen Interactions in Materials Conf., Jackson, Wyoming, September, 1994.
25. J.R.Scully, Corrosion and Environmental Cracking of Beta Titanium Alloys, Gordon Conf. on Corrosion, New London, NH, July 1994, (Invited).
24. J.R. Scully, Electrochemical, Chaos and Bond Percolation Analysis of Localized Corrosion, Gordon Conf. on Physical Metallurgy, Plymouth, NH, June 1994, (Invited).
23. J.R.Scully, "New Approaches to Understanding Environmentally Assisted Cracking," Blum Award Lecture, The Electrochemical Soc., May 1994, (Invited).
22. J.R.Scully, "Recent Advances in Corrosion Protection of Steels," Armco Distinguished Lecture, Northwestern University, Department of Materials Science and Engineering. February 1994, (Invited).
21. J.R.Scully, S. Smith, "High Resolution Thermal Desorption Analysis of Trapped Hydrogen in Metals," Allegheny-Ludlum Steel Technical Seminar, Allegheny Ludlum, Brackenridge, PA, January 10, 1994, (Invited).
20. J.R.Scully, S.T. Pride, and T.O. Knight, "The Influence of CO₂ Sparging on the Electrochemistry of the 2-Al₂Cu Phase and Its Relevancy to the Metastable Pitting of Al Thin Films," Presented at the 182nd Meeting of the Electrochem. Soc., Toronto, CA, 1992, (Invited).
19. R.P.Gangloff, J.R. Scully, "Effect of Strain Rate on Environmental Assisted Crack Growth," ASTM symposium on Slow Strain Rate Testing: Research and Engineering Applications," R. Kain, editor, ASTM, Pittsburgh PA, May 1992, (Invited).
18. J.R.Scully, "Corrosion of Al Alloy Thin Films in Microelectronics," Digital Equipment Corporation Research Seminar Series, Hudson MA, May 1992, (Invited).
17. J.R.Scully, H.S. Scully, "Investigation of the Environmental Cracking Susceptibility of AISI 422 Stainless Steel in NH₄HCO₃/NH₄OH Solution," ASM Tidewater Region Spring Meeting, Hampton VA, March 1992, (Invited).

16. J.R.Scully, "Lifetime Prediction of Organic Coatings on Steel and Magnesium Alloys," Research Session of the NACE Northwest Regional Meeting, Alberta CANADA, February 1992, (Invited).
15. J.R.Scully, "Keynote Lecture: Electrochemical Impedance Analysis for Practical Corrosion Predications," Princeton Applied Research Seminar on Electrochemical Techniques and Their Applications to Corrosion, December 1991, (Invited).
14. J.R.Scully, J.A. Van Den Avyle, M.J. Cieslak, A.D. Romig, Jr., C.R. Hills "The Influence of Palladium on the Hydrogen Assisted Cracking Resistance of PH 13-8 Mo Stainless Steel Base Metal and Electron Beam Welds," NACE Baltimore-Washington Meeting, May 1991, (Invited).
13. J.R.Scully, "Lifetime Prediction of Organic Coatings on Metals," Henkel Chemical Co. Research Seminar Series, April 1991, (Invited).
12. J.R. Scully, "On the Hydrogen Assisted Cracking Resistance of Palladium Modified PH 13-8 Mo Stainless Steel," Presented at the University of Virginia, Dept. of Materials Science, February 1990, (Invited).
11. J.R. Scully, "Keynote Lecture: Practical Applications of Electrochemical Impedance in Corrosion," Princeton Applied Research Electrochemical Methods Symposium, Baltimore, MD, December 1989, (Invited).
10. J.R. Scully, "Environmental Assisted Cracking of Metals," Univ. of Southern California, Dept. of Materials Science and Engineering, June 1989, (Invited).
9. J.R. Scully, "Influence of Strain on the Hydrogen Assisted Cracking of AISI 4340 and HY-130 High Strength Steels in Sodium Chloride Solution," Presented at the Mars Fontana Corrosion Center, Ohio State University, September 1989, (Invited).
8. J.R. Scully, "Corrosion of Aluminum Thin Films During IC Metallization Processing," Department 11534 Seminar, A.T.&T. Bell Laboratories, Murray Hill, NJ, September 1988, (Invited).
7. J.R. Scully, "Electrochemical Impedance of Organic Coated Steel: Correlation of Impedance Parameters with Long Term Coating Deterioration," Princeton Applied Research Electrochemical Methods Symposium, Houston, TX, December 1987, (Invited).
6. J.R. Scully, "Influence of Strain on the Hydrogen Assisted Cracking of AISI 4340 and HY-130 High Strength Steels in Sodium Chloride Solution," Presented at the ASTM Symposium on Environmentally Assisted Cracking - Science and Engineering, Bal Harbor, FL, 1987, (Invited).

5. J.R. Scully, "Electrochemical Impedance Methods for Coating Evaluation," Presented at the Naval Civil Engineering Laboratory Coatings Evaluation Seminar, Port Hueneme, CA, September 1985, (Invited).
4. J.R. Scully, "Electrochemical Impedance Methods in Corrosion Science and Engineering," Univ. of Delaware, Dept. of Ocean Science and Engineering, 1985, (Invited).
3. J.R. Scully, H.P. Hack, "Tube-Tubesheet Galvanic Corrosion Prediction Using Long Term Electrochemical Polarization Data," Military Tri-service Conference on Corrosion, Orlando, FL, December 1985, (Invited).
2. J.R. Scully, "Electrochemical Measurement of Steel Pipe Corrosion Rates in Soils," A.B. Campbell Award Lecture Presented to the NACE Baltimore Washington Section, September 1985, (Invited).
1. J.R. Scully, H.P. Hack, "Galvanic Corrosion Prediction Using Long and Short Term Electrochemical Polarization Data," Military Tri-service Conference on Corrosion, Annapolis, MD, September 1983, (Invited).

Contributed Presentations and Lectures (88 as 2007, stopped recording)

88. N. Tailleart and J.R. Scully, "Characterization and Corrosion Properties of Thermally Sprayed Al-Co-Ce Alloys," 212th Electrochemical Society Meeting, Washington, DC (2007).
87. N. Tailleart, J.R. Scully, "Characterization and Corrosion Properties of Thermally Sprayed Al-Co-Ce Alloys," Tri-Service Corrosion Conference, Denver, Co, (2007).
86. H. Cong, F. Bocher, N. D. Budiansky, M. F. Hurley, and J. R. Scully, "Use of Couple Multi-Electrode Arrays to Advance the Understanding of Selected Corrosion Phenomena", Symposium on Advances in Electrochemical Techniques for Corrosion Monitoring and Measurement, ASTM International, G01.11 Committee, May 22-23, 2007, Norfolk, VA.
85. A.M. Lucente, John. R. Scully, "Pitting Corrosion of Partially Crystalline Aluminum-Based Glassy Alloys with Solute-Lean Nanocrystals," 2007 Annual Mtg, Orlando, FL, March, 2007.
84. F. Bocher, F.J. Presuel-Moreno, N.D. Budiansky and J. R. Scully, "Investigation of Crevice Corrosion of AISI 316 Stainless Steel and Ni-Cr-Mo Alloy 625 Using Coupled Multi-Electrode Arrays," NACE Corrosion 06, Nashville, TN (2007).
83. N.D. Budiansky, F. Bocher, H. Cong, M. F. Hurley and J.R. Scully, "Use of Coupled Multi-Electrode Arrays to Advance the Understanding of Selected Corrosion Phenomena," NACE Corrosion 07, San Diego, CA (2006).

82. F.Bocher, F. J. Presuel-Moreno, N.D. Budiansky, J.R. Scully, "Coupled Multi-Electrode Investigation of Crevice Corrosion of 316 Stainless Steel," NACE Corrosion 06, Research in Progress Symposium, San Diego, CA (2006).

81. F.Bocher, F.J. Presuel-Moreno, N.D. Budiansky and J.R. Scully, "Coupled Multi-Electrode Investigation of Crevice Corrosion: 316 Stainless Steel Compared to Ni-Cr-Mo Alloy 625," in Critical Factors in Localized Corrosion 5, a Symposium in Honor of Hugh S. Isaacs, The 210th Electrochemical Society Meeting, Cancun Mexico, October (2006).

80. F.J. Presuel-Moreno, F. Bocher, J.R. Scully, R.G. Kelly, "Modeling of Crevice Corrosion Stability and Stifling of a NiCrMo Alloy and Stainless Steel," in Critical Factors in Localized Corrosion 5, a Symposium in Honor of Hugh S. Isaacs, The 210th Electrochemical Society Meeting, Cancun Mexico, October (2006).

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78. F. Bocher, F. Presuel-Moreno, J.R. Scully, "Coupled Multi-Electrode Investigation of Crevice Corrosion," Gordon Research Conference, Aqueous Corrosion, Colby-Sawyer College, New London, NH (2006).

77. S.Anatasio, John R. Scully, "Corrosion of Cellular Metals in Marine Environments," CORROSION/05, Student Poster Session, NACE, Houston, April, 2005.

76. Sara Anatasio, John R. Scully, "Corrosion of Cellular Metals in Marine Environments," CORROSION/05, Gordon Research Conference on Corrosion – Poster Session, July, 2004.

75. Beth Kehler, John R. Scully, Potential Dependency of Environmental Hydrogen Embrittlement of a Trap Rich High Strength Steel, CORROSION/05, Research in Progress Symposium, NACE, Houston, April, 2005.

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62. M. Goldman, N. Unlu, G.J. Shiflet, and J.R. Scully, "Amorphous Metallic Coatings with Tunable Corrosion Properties Based on Al-Co-Ce-(Mo) Alloy Compositions," Paper No. 04276, CORROSION/2004, New Orleans, LA, March (2004).

61. D.A. Little, J.R. Ferrel, and J.R. Scully, "The Effect of Pretreatment and Temper on the Under-Paint Corrosion of AA 2024" Paper No. 04277, CORROSION/2004, New Orleans, LA, March (2004).

60. Meghan Goldman, Tunable Barrier Corrosion Properties of Amorphous Aluminum-Based Metallic Glasses, Student Poster Session, NACE, San Diego, 2003.

59. M. Jakab, J. Scully, "Storage State and Mechanism of Cerium, Cobalt and Molybdate Ion Release from Oxides on Aluminum and Synthesized Al -Transition Metal - Rare Earth Metal Alloys", Gordon Research Conference on Aqueous Corrosion, New London, 2002.

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54. B.A. Kehler, G.O. Ilevbare, J.R. Scully, "Comparison of the Crevice Corrosion Resistance of Alloys 625 and 22," In the International Symposium in Honor of Prof. Norio Sato: Passivity and Localized Corrosion," The Electrochemical Soc. and The Electrochemical Soc. of Japan Meeting, Hawaii, 1999.

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51. R.L. Thomas, R.P. Gangloff, J.R. Scully, "Hydrogen Embrittlement of AerMet™100 Steel," 1999 Aero-Materials Conf. and Materials Exposition, Dayton, OH, 1999.

50. G.A. Young, Jr., J.R. Scully, "Investigations of AA 7050 Crack Wake Hydrogen Concentrations and Their implications in Hydrogen Environment Assisted Cracking," NACE Research in Progress Symposium, CORROSION/99, San Antonio, April, 1999.
49. B.J. Connolly, J.R. Scully, "Critical Factors in the Transition from Pitting Corrosion to Stress Corrosion in AA 2096," NACE Research in Progress Symposium, CORROSION/99, San Antonio, April, 1999.
48. B.J. Connolly, R.S. Lillard, J.R. Scully, "Crevice Corrosion Phenomena Associated with Aluminum Alloy AA3104," In Critical Factors in Localized Corrosion III, J. Kruger Symp., Boston, Nov. 1998.
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46. R.S. Lillard, J.R. Scully, "Electrochemical Passivation of the Ordered NiAl Intermetallic Compound," In Surface Oxide Films, J.A. Bardwell, ed., The Electrochemical Society Fall Meeting, San Antonio, TX, 1996.
45. S.Y. Yu, J.R. Scully, "Enhanced Resistance to Steady State Active Dissolution and passivity of Titanium Alloyed with Niobium and Zirconium," In Surface Oxide Films, J.A. Bardwell, ed., The Electrochemical Society Fall Meeting, San Antonio, TX, 1996.
44. S.W. Smith, M.A. Gaudett, D. Enos, J.R. Scully, "Thermal Desorption Spectroscopy Analysis of Hydrogen-Metal Defect Interactions in Engineering Alloys," NACE Research in Progress Symposia, CORROSION/96, Denver, CO., 1996.
43. D.G. Enos, A.J. Williams, Jr., J.R. Scully, "Understanding the Long-term Effects of Cathodic Protection on Pre-Stressed Concrete Structures: Hydrogen Embrittlement of of Prestressing Steel," Corrosion 96 Symposium on Corrosion in Concrete, March, 1996.
42. B. Wu, S. Pride, T. Lunt, J. Hudson, J. Scully, M. Mikhailov, "Stochastic Behavior of Localized Corrosion: Experiment and Model," 1995 Annual AIChE. meeting, Miami, FL, Nov. 1995.
41. A.J. Williams, D.G. Enos, J.R. Scully, "Determination of Safe Cathodic Protection Limits in Prestressed Pilings - Laboratory Pilings," NACE CORROSION 1995 Poster session. Orlando, FL, March 1995.
40. M.A. Gaudett, J.R. Scully, "Hydrogen Interactions and Hydrogen Embrittlement in Metastable Beta Titanium Alloys," TMS Hydrogen Interactions in Materials Conf., Jackson, Wyoming, September, 1994.

39. S.T. Pride, J.R. Scully, J.H. Hudson, "Analysis of Electrochemical Noise associated with Pitting in Al, Al-2%Cu and AA 2024-T3, 1st International Symposium on Electrochemical Noise Analysis of Corrosion Phenomena, ASTM, May 1994.
38. M. Gaudett, J.R. Scully, "Distributions of Sensitization Levels in 304 Stainless Steel and its Implications with Respect to Intergranular Stress Corrosion Cracking," NACE CORROSION/94 Research in Progress Symposium, March 1994.
37. M. Gaudett, J.R. Scully, "Distributions of Sensitization Levels in 304 Stainless Steel and its Implications with Respect to Intergranular Stress Corrosion Cracking," The Electrochemical Society Fall Meeting, October 1993.
36. R.S. Lillard, J.R. Scully, "Secondary Current Distribution Modeling of Factors Contributing to the Initiation and Propagation of Crevice Corrosion in Alloy 625," Electrochem. Soc. Fall Meeting, October 1993.
35. J.R. Scully, L.M. Young, G.A. Young, D. Kolman, R.P. Gangloff, "SCC of Beta Titanium Alloys in Seawater," NACE Research in Progress Symposium, March 1993.
34. S.T. Pride, J.R. Scully, J.L. Hudson, "Metastable Pitting of Al and Criteria for the Transition to Stable Pitting," NACE Research in Progress Symposium, March 1993.
33. G.A. Young, Jr., J.R. Scully, "Comparison of the Influence of Hydrogen on the Mechanical Properties of Timetal 21S and 15-3," TMS symposium on Environmental Aspects of Beta Titanium Alloys, January 1993.
32. J.R. Scully, S.T. Hensley, "Lifetime Prediction of Organic Coatings on Steel and Magnesium," NACE Corrosion/93 Electrochemical Techniques T3-L Symposium, March 1993.
31. M.J. Jurinski, J.R. Scully, R.S. Lillard, "Crevice Corrosion of Alloy 625 in Chlorinated ASTM Artificial Ocean Water," NACE Corrosion/93 T7-C Symposium, March 1993.
30. R. Buchhiet, K. Zavadil, M. Bode, T. Knight, J.R. Scully, "Electrochemistry of the β -Al₃Ta Phase and Pitting of Aged Al-Ta Metastable Alloys," Presented at the 182nd Meeting of the Electrochem. Soc., Toronto, CA, 1992.
29. S. Pride, J. Scully, J. Hudson, "Analysis of Electrochemical Transients Associated with the Metastable Pitting of Al and Al-Cu in Dilute Halide Solution," Presented at the 182nd Meeting of the Electrochem. Soc., Toronto, CA, 1992.
28. D. Kolman, J.R. Scully, "Passivity of High Strength Titanium Alloys in Aqueous Solutions," Presented at the 182nd Meeting of the Electrochem. Soc., Toronto, CA, 1992.

27. M.J. Jurinski, J.R. Scully, "Crevice Corrosion of Alloy 625 in Chlorinated ASTM Artificial Ocean Water," Presented at the 182nd Meeting of the Electrochem. Soc., Toronto, CA, 1992.

26. J.R. Scully, T.O. Knight, R.G. Buchheit, D.E. Peebles, "Electrochemical Characteristics of Al₂Cu, Al₃Ta, and Al₃Zr Intermetallic Phases and Their Relevancy to the Localized Corrosion of Al Alloys," Presented at the UMIST 20th Anniversary Symp. on Corrosion and Protection, Manchester, UK, June 1992.

25. D. Kolman, J.R. Scully, "Passivity of High Strength Titanium Alloys in Aqueous Solutions," World Titanium Congress Poster Session, San Diego CA, June 1992.

24. G. Young, Jr., J.R. Scully, "The Effects of Hydrogen on the Mechanical Properties of High Strength Titanium Alloys," World Titanium Congress Poster Session, San Diego CA, June 1992.

23. J.R. Scully, "Characterization of the Corrosion of Aluminum Thin Films using Electrochemical Impedance Methods," ASTM International Symposium on Electrochemical Impedance for Practical Corrosion Prediction, San Diego, CA, November 1991.

22. R. Bourcier, J.R. Scully, W. Jones, "A Probabilistic Model of Intergranular Stress Corrosion Cracking," NACE Conference on the Lifetime Prediction of Corrodible Structures, Hawaii, November 1991.

21. J.R. Scully, "Metastable Pitting Corrosion of Aluminum, Al-Cu, and Al-Si Thin Films in Dilute HF Solutions," Electrochemical Society Symposium on Critical Factors in Localized Corrosion, Phoenix, AZ, October 1991.

20. J.R. Scully, D.E. Peebles, "CO₂ Induced Inhibition of the Localized Corrosion of Al-Al-Cu, and Al-Si Thin Films in Dilute HF Solution," Corrosion Inhibitors Symposium, The Electrochem. Soc., Washington, D.C., May 1991.

19. J.R. Scully, D.E. Peebles, "Metastable Pitting Corrosion of Aluminum, Al-Cu and Al-Si Thin Films in Dilute HF Solutions and its Relevancy to the Processing of Integrated Circuit Interconnections," Materials Research Society Symposia on Reliability in Electronic Components, Anaheim, CA, May 1991.

18. J.R. Scully, J.A. Van Den Avyle, M.J. Cieslak, A.D. Romig, Jr., C.R. Hills "The Influence of Palladium on the Hydrogen Assisted Cracking Resistance of PH 13-8 Mo Stainless Steel," NACE Research Symposium, CORROSION/91 Cincinnati, OH, 1991.

17. J.R. Scully, J.A. Van Den Avyle, M.J. Cieslak, A.D. Romig, Jr., C.R. Hills "The Influence of Palladium on the Hydrogen Assisted Cracking Resistance of PH 13-8 Stainless Steel," Electrochem. Soc. Fall 1990 meeting, Seattle, WA, October 1990.

16. J.R. Scully, D.E. Peebles, A.D. Romig, Jr., D.R. Frear, C.R. Hills, "Metallurgical Factors Influencing the Corrosion of Aluminum, Al-Cu, and Al-Si Sputtered Thin Films in Dilute HF Solution," Electrochem. Soc. Fall 1990 meeting, Seattle, WA, October 1990.

15. R.J. Bourcier, J.R. Scully, W.B. Jones, "Stochastic Modelling of Intergranular Stress Corrosion Cracking Processes," Electrochem. Soc. Fall 1990 meeting, Seattle, WA, October 1990.

14. N.R. Sorensen, J.R. Scully, "Application of Acoustic Wave Devices and Electrochemical Impedance to Corrosion of Aluminum Thin Film Metallizations," NACE CORROSION 1990 Symposium, Las Vegas, NV, April 1990.

13. T.R. Guilinger, J.A. Knapp, M.J. Kelly, J.R. Scully, B.L. Doyle, D.S. Walsh "Real Time Measurements of Electrochemically Loaded Deuterium in Metals Using Ion Beam Analysis," 16th DOE Surface Studies Conf., Golden, CO, June 1990.

12. J.R. Scully, F.S. Bovard, "Corrosion Studies of Materials for Lithium Batteries," 40th Meeting of the Lithium Battery Technical Safety Group, Sandia National Laboratories, Albuquerque, NM, October 1989.

11. F.S. Bovard, W.R. Cieslak, G.A. Knorovsky, J.R. Scully, "Corrosion of Nickel 200 to Molybdenum Resistance Welds in 1.5M LiAlCl₄/SOC12," 176th Meeting of the Electrochem. Soc., Hollywood, FL, October 1989.

10. J.R. Scully, W.R. Cieslak, F.S. Bovard, "Intergranular Stress Corrosion Cracking of Cathodically Polarized Nickel in LiAlCl₄/SOC12 Electrolyte," 176th Meeting of the Electrochem. Soc., Hollywood, FL, October 1989.

9. J.R. Scully, R.P. Frankenthal, K.J. Hanson, D.J. Siconolfi, J.D. Sinclair, "Localized Corrosion and Its Inhibition by CO₂ of Aluminum and Al-0.5%Cu in Dilute HF Solutions," 176th Meeting of the Electrochem. Soc., Hollywood, FL, October 1989.

8. J.R. Scully, "Electrochemical Impedance of Organic Coated Steel: Correlation of Impedance Parameters with Long Term Coating Deterioration," Electrochem. Soc. Fall 1987 Meeting, Honolulu, HI, October 1987.

7. J.R. Scully, P.J. Moran, "Influence of Strain on Environmental Hydrogen Assisted Cracking of Steel," NACE Corrosion 1987 Research Symposium, San Francisco, CA, March 1987.

6. P.J. Moran, J.R. Scully, "Utilization of Electrochemical Hydrogen Permeation Methods for the Study of Surface and Bulk Effects Relevant to Hydrogen Embrittlement," Electrochem. Soc. Fall 1986 Meeting, San Diego, CA, October 1986.

5. J.R. Scully, P.J. Moran, "Hydrogen Assisted Cracking of AISI 4340 Steel Under Cathodic Polarization in ASTM Artificial Seawater," NACE Corrosion 1985 Research Symposium, Boston, MA, March 1985.
4. J.R. Scully, H.P. Hack, and D.G. Tipton, "Tube-Tubesheet Galvanic Corrosion Prediction Using Long Term Polarization Curves and Experimental Verifications," NACE Corrosion 1984 Research Symposium, New Orleans, LA, March 1984.
3. E.M. Hackett, P.J. Moran, J.R. Scully, "The Influence of Cathodic Polarization on the Fracture Properties of High Strength Steels in Seawater," Electrochem. Soc. Fall 1983 Meeting, Washington, D.C., October 1983.
2. J.R. Scully, M.G. Vassilaros, "The Hydrogen Embrittlement Susceptibility of Monel Alloy K-500," Electrochem. Soc. Fall 1983 Meeting, Washington, D.C., October 1983.
1. J.R. Scully, P.J. Moran, "Electrochemical Effects Pertinent to Potentiodynamic Techniques," Electrochem. Soc. Fall 1983 Meeting, Washington, D.C., October 1983.

Undergraduate, Graduate, and Post-graduate Researchers

Current Graduate Students (2014-2015)

1. Andrew King (Ph.D. degree 2014)*, *
2. Arwen Wilson (Ph.D. degree expected, May 2015)*, *
3. Sam Madden (M.S. degree 2014)*
4. Merrill Tayler (Ph.D. degree 2014)*
5. Mary Lyn Lim (Ph.D. degree expected 2015)* - Joint with Kelly
6. Rebecca Schaller (Ph.D. degree expect 2015)*, *
7. Balaji Kannan (Ph.D. degree expect 2015)
8. Taylor Cain (Ph.D. degree expect 2016)
9. Mike Melia (Ph.D. degree expect 2016) – Joint with Jim Fitzgearld
10. Leslie Bland (Ph.D. degree expect 2016)* – Joint with Jim Fitzgerald
11. Leanna Foster (M.S., degree expected 2014)
12. Thaddeus Waterman (MMSE. 2015) – Joint with Burns
13. Veronica Rafla (Ph.D. 2017)
13. Mike Hutchinson (Ph.D. 2018)
14. R.J Santucci (MSE, 2016)
15. Katie Lutton (Joint GRA/UGRA)
16. Tony (Ruiliang) Liu (Monash) – Joint with Birbilis

*** Indicates that the student was a paper or poster award recipient at an international conference**

Ph.D. Students Advised/Degree Status

1. S.W. Smith, "Hydrogen Interactions and Their Correlation to the Hydrogen Embrittlement Susceptibility of Al-Li-Cu-Zr Alloys," (Ph.D. degree, May 1995)
2. D.G. Kolman, "Passivity and Bare Surface Electrode Kinetics on β - Titanium Alloys in Aqueous Chloride Solutions and Their Relevancy to Environment-assisted Cracking,"(Ph.D. degree, January 96) ECS Morris Cohen Award*,*
3. S.T. Pride, "Metastable Pitting of Aluminum and Al-Cu Alloys," (Ph.D.degree, Jan.1997)* joint with J. Hudson
4. M.A. Gaudett, "Investigation of the Metallurgical Factors Affecting Hydrogen Embrittlement of Solution Heat Treated and Aged Ti-3Al-8V-6Cr-4Mo-4Zr (wt. %) Employing Fracture, Microscopy and Desorption Methods," (Ph.D. degree, May 1997), NSF GEE Fellowship
5. D. Enos, "The Long Term Effects of Cathodic Protection on Corroding, Pre-Stressed Concrete Structures: Hydrogen Embrittlement of the Reinforcing Steel," (Ph.D. degree, August 1997)*,*, NACE A.B. Campbell Award
6. S. Y. Yu, "Mechanisms for Enhanced Active Dissolution Resistance and Passivity of Ti Alloyed with Nb and Zr," (Ph.D. degree, Jan. 1998) ECS Morris Cohen Award
7. G.A. Young, Jr., "Hydrogen Environment Assisted Cracking in an Al-Zn-Mg-(Cu) Alloy," (Ph.D., May 99)*, Mobil Scholarship
8. T. Lunt, "Interactions among Corrosion Sites: Experiments and Models," (Ph.D. September, 00) - Joint with J. Hudson
9. B.J. Connolly (Ph.D.)*, *, Mobil Scholarship, "The transition from Localized Corrosion to SCC of Al-Li-Cu Alloy AA 2090 as a function of Isothermal Heat Treatment," (Ph.D. degree, May 02)
10. N. Budiansky, (Ph.D.), "Cooperative Interactions and Lateral Corrosion Spreading During Pitting, Intergranular and Depassivation Type Corrosion," (Ph.D. Dec. 06)*
11. Levent Organ, (Ph.D.), "Spatial and temporal Patterns in Corrosion: Computer Simulations of Metastable Pitting and Experimental Bursting Oscillations in Iron Dissolution," (Ph.D. degree October 2003). Joint with J. Hudson
12. Marta Jakab, (Ph.D.), "Co, Ce and Mo Storage, Release, Transport and Inhibition when Delivered from Amorphous Al-Co-Ce Alloys," (Ph.D. degree Dec. 05)*,* NACE A.B. Campbell Award Winner
13. Daryl Little, (Ph.D.) , "The Effect of Alloy Composition and Pretreatment on the Under-paint Corrosion of Copper Bearing Aluminum Alloys," (Ph.D. degree, Aug. 06)**

14. Mike Hurley, (Ph.D.), "Corrosion Initiation and Propagation on Candidate Rebar Materials in Concrete," (Ph.D. Degree, Dec. 06)

15. Beth Kehler, (Ph.D.), "Predicting the Potential Dependency of Hydrogen Environment Embrittlement in High Strength Alloys," (Ph.D. Dec. 07).*,* NACE A..B. Campbell Award Winner.

16. Hongbo Cong, (Ph.D.), "Relationship between Drinking Water Chemistry and Electrochemical Properties of Cu Piping Relevant to Cold Water Pitting" (Ph.D. Feb.. 2009).*,* ECS Morris Cohen Award Winner

17. Ashley Lucente, (Ph.D.), "Mechanisms of Corrosion Resistance Amorphous-Nanocrystalline Alloys with Solute Lean Nanocrystals Embedded in an Amorphous Matrix," (Ph.D. Dec. 2008)*,*
GRS Student Organizer – 1st GRC/GRS in Aqueous Corrosion

18. Sami Al-Ghamdi (Ph.D.), "Inhibition of the Environment Assisted Cracking of an ultra-High Strength Steel with Ionic Chemical Inhibitors," (Ph.D. August 2010).*,*

19. Nicole Tailleart, (Ph.D.), "Design of a Spray Applied Al-Co-Ce Coating with Multi-functional Corrosion Properties," (Ph.D. Dec. 2010).* NACE Corrosion Journal Best Paper Award

20. Derek Horton, (Ph.D.) "Effect of Model Structural Defects on the Localized Corrosion Behavior of Amorphous Alloys: Polymorphic Phases Embedded in an Amorphous Matrix," (Ph.D. Dec. 2011).*

* Gordon Research Conference, GRS Symposium Speaker 2012.

21. Tomohiro Aburada, (Ph.D.), "Effect of Minor Alloying Elements on the Corrosion Behavior of Metallic Glasses as Ideal Solid Solutions (Ph.D. March 2011). Joint with Jim Fitzgerald. Gordon Research Conference, GRS Symposium Speaker 2010.

22. Swati Jain, (Ph.D.), "Modeling of Intergranular Corrosion Spreading with Experimental Verifications, (Ph.D. May 2011). Joint with John L. Hudson.

23. Merrill Tayler (Ph.D. , "Underpaint Corrosion Mechanisms in Laboratory vs. Field Exposures (Ph.D. 2014).*

24. Arwen Wilson (Ph.D. Candidate), Corrosion Inhibition By Synergistic Inhibitor Combinations in Thin Film Electrolytes (Ph.D. expected 2015).*,*

25. Andrew King (Ph.D.), Corrosion Inhibition By Magnesium Rich Primers (Ph.D. 2014).*,* NACE A.B. Campbell Award Winner

26. Samuel Madden, (Ph.D.), Corrosion Inhibition of 2024 Surface Corrosion and EAC (Ph.D. 2014).*

27. Mary Lyn Lim (Ph.D. Candidate), Intergranular Corrosion in AA 5083 as a Function of Degree of Sensitization (Ph.D. expected 2015)* * Poster Award Winner NACE, DOD.

28. Rebecca Schaller (Ph.D. Candidate), Atmospheric Corrosion and Hydrogen Uptake in Low Alloy and Precipitation Hardened Steel Alloys (Ph.D. expected 2015)*,*,*
* Gordon Research Conference, GRS Symposium Speaker 2012. Poster Award Winner NACE.

29. Balaji Kannan (Ph.D. Candidate), Effects of Aluminum Alloy Surface Pretreatments on MgRp Performance: Comparison of LALT and Field Exposures (Ph.D. expected 2015).

30. Veronica Rafla (Ph.D. Candidate), Corrosion Metallurgy Governing Damage Evolution in Stainless Steel – Al-Mg-Zn-Cu alloy Galvanic Couples (2018).

31. Mike Hutchinson (Ph.D. Candidate), Anti-microbial Copper Alloy Design (2018).

32. Leslie Bland (Ph.D. Candidate), Corrosion of Magnesium and Mg Alloy AZ31 Welds in NaCl (Ph.D. expected 2016).* * Poster Award Winner, NACE 2014.

33. Taylor Cain (Ph.D. Candidate), Corrosion Protection Strategies for Mg Alloy AZ31 Based on Multi-functional Metallic Coatings (Ph.D. expected 2016).

34. Mike Melia (Ph.D. Candidate), Corrosion Protection Strategies for Mg Alloy AZ31 Based on Laser Surface Processing for Enhanced Conversion Coating (Ph.D. expected 2016).

****Indicates that the student was a paper or poster award recipient at an international conference***

M.S. Students Advised/Degree Status

1. G. Young, Jr. (M.S. degree - June 1993)*, Mobil Scholarship, Virginia Space Grant Fellowship
2. M. Jurinski (M.S. degree - August 1992)
3. M. Gaudett (M.S. degree - March 1993)
4. A. Williams, Jr. (M.S. degree - August 1995)*
5. H. Su (M.S. degree, May 1995) joint with W.C. Johnson
6. B. Connolly (M.S. degree, May 1996)**
7. J. Johnson (M.S. degree, August 1997)
8. J. Sweitzer (M.S. degree, August 1998)*
9. B. Coe (M.S. degree, May 1999)* joint with J. Hudson
10. C. Brodrick (B.M.E. degree, August 99)
11. Beth Kehler (M.S. degree, September, 00)**
12. Richard Thomas (M.S. degree, May 00) - Joint with R. Gangloff

13. Daryl Little (M.S. degree, May 00)*
14. M. Hurley (M.S. degree, May 02)
15. N. Budiansky (M.S. degree, March 03)*
16. M. Switzer (M.S. degree, July 03)
17. C. Wichman (MMSE degree, Dec. 03)
18. Hakan Dogan (M.S. degree, March, 04)
19. A.M. Lucente (M.S. bypass, Sept. 04)*
20. M. Goldman (M.S. degree, Aug 04)**
21. S. Anastasio (M.S. degree Aug. 05)*
22. J. Hoekstra (M.M.S.E. degree August., 05) joint with Jim Fitzgerald
23. Sami Al-Ghamdi (M.M.S.E. degree, June 06)* joint with Gangloff
24. Joshua James (M.S. degree, Oct. 07)* A.B. Campbell Award Winner
26. John Macha (M.S. Degree Dec. 2008)*
27. Andrew King (MME degree, Aug. 2010)*
28. Arwen Wilson (MME degree, Aug. 2010)*
29. Sam Madden (MME degree, Aug. 2010)*
30. Katie Fleming (MSE, Aug. 2011)
31. R. Schaller (MMSE, Aug. 2013)
32. Taylor Cain (MMSE, 2014)
33. Leanna Foster (MSE, 2014)
34. Leslie Bland (MMSE, 2014) joint with Jim Fitzgerald
35. Mike Melia (MMSE, 2014) joint with Jim Fitzgerald
36. Thad Waterman (MMSE 2015), joint with Burns

*** Indicates that the student was a paper or poster award recipient at an international conference**

PDRA Researchers

1. S. Lillard (Post-Doctoral Research Associate, 1992-1995)
2. T. Johnson (Post-Doctoral Research Associate, 1993)
3. G. Ilevbare (Post-Doctoral Research Associate, 1996-2000)
4. R. Bley (Post-Doctoral Research Associate, 1997-1999)
5. W. Benson (Post-Doctoral Research Associate, Sept. 98 - Nov. 98)
6. D. Li (Post-Doctoral Research Associate, March 00 – 2002)
7. F. Presuel–Moreno (Post-Doctoral Research Associate, March 02 - 07)
8. F. Bocher (Post-Doctoral Research Associate, Jan 05 – Dec. 08)
9. Ruoshuang Huang (Post-Doctoral Research Associate, 06-09)
10. Hung Ha (PDRA, RS; Dec. 2009 – Dec 2009)
11. Derek Horton (PDRA; Jan 2011- Sept 2012)
12. Brendy Rincon Troconis (PDRA, July 2013-)

Visiting Research Scientists

1. Dr. Peter Rhodes, retired Shell Development Corp., 1998
2. G. Ilevbare (Post-Doctoral Research Associate, October, 1999-2003)
3. D. Li (Post-Doctoral Research Associate, 02-03)

4. D. Ho (Ph.D. student, Univ. of Monash, Jan. 05)
5. F. Bocher (Research Associate, 08-10)
6. T. Muster (Research Associate, 07) CSIRO, visiting scientist
7. Dr. Syun Kim (Research Associate) POSCO Steel, visiting scientist
8. H. Ha (PDRA 2009-2010, Research Scientist 2011-2012)
9. J. Ai (Research Scientist 2011-2012)
10. Ivan Cole (Research associate), CSIRO, visiting scientist 2011
11. Walmar Baptista (visiting research associate), Petrobras, 2012
12. Prof. Nicholas Birbilis, Monash Univ., 2013, 2014
13. Dr. Ricardo Nolasco, Vallouric Tubos Do Brazil, 2014-2015

Technical Staff

1. Chris Marks (01-05)

Undergraduate Researchers Advised in CESE Laboratory and/or Senior Thesis Advisor

1. T. Hensley (Senior Thesis, May 1992)
2. T. Knight (Senior Thesis, May 1993)
3. J. Johnson (Senior Thesis, May 1995)
4. D. Dalquist (Senior Thesis, May 1995)
5. K. Junkins (Senior Thesis, May 1995)
6. R. Palmer (Senior Thesis, May 1996)*
7. Andrew Inglis (1998)
8. M. Hurley (Senior Thesis, May 1999)
9. C. DeBernard (1999)
10. C. Quarmby (Senior Thesis, 2001)
11. D. Pflieger (Senior Thesis, 2000)
12. A. Lucente (Senior Thesis, 2002)*
13. J. Ferrer (Senior Thesis, 2004)
14. G. Biddick (Senior Thesis, 2005)
15. R. Amunfu (2004-2005)
16. J. Webb (2004-2005, Va. Tech)
17. K. Flynn (2004-2005, Ga. Tech)
18. L. Stohr (2006, UVA)
19. Grahame Burke (Senior Thesis, 2007-08)
20. Pablo Gallegos (Senior Thesis, 2007-08)
21. Hannah Bindig (Senior Thesis 2008-2011)*
22. Rebecca Verley (Senior Thesis 2010)
23. Walker McCarthy (2010-2011)
24. Alexandra Nyugen (2011-2012)
25. Samantha Hollman (2013, NSF REU)
26. Katherine Lutton (2013-2015)

*** Indicates student paper or poster award recipient URDS**

Thesis Committees Member or Chair (not advisor)

Ph.D. UVa: 30 students since 1991
Ph.D. (Other University): 2 students since 1991
M.S. UVa: 30 students since 1991

Graduate Student Technical Society Awards:

Gordon Research Student Conference Speaker or Organizer

Ashley Lucente, (Ph.D. 2008), *GRS Student Organizer – 1st GRC/GRS in Aqueous Corrosion 2008*

Tomohiro Aburada, (Ph.D. 2011), *Gordon Research Conference, GRS Symposium Speaker 2010.*

Derek Horton, (Ph.D. 2011), *Gordon Research Conference, GRS Symposium Speaker 2012.*

Rebecca Schaller (Ph.D. Candidate) Atmospheric Corrosion and Hydrogen Uptake in Low Alloy and Precipitation Hardened Steel Alloys (Ph.D. expected 2015)*
(2014)

A.B. Campbell Award (NACE)

Andrew King (Ph.D. Candidate), Corrosion Inhibition By Magnesium Rich Primers (Ph.D. expected 2013). NACE A.B. Campbell Award Winner.

Beth Kehler, (Ph.D., 2007), "Predicting the Potential Dependency of Hydrogen Environment Embrittlement in High Strength Alloys," NACE A.B. Campbell Award Winner.

Marta Jakab, (Ph.D., 2005), "Co, Ce and Mo Storage, Release, Transport and Inhibition when Delivered from Amorphous Al-Co-Ce Alloys," NACE A.B. Campbell Award Winner

D. Enos, (Ph.D. degree, August 1997) "The Long Term Effects of Cathodic Protection on Corroding, Pre-Stressed Concrete Structures: Hydrogen Embrittlement of the Reinforcing Steel," NACE A.B. Campbell Award

Joshua James (M.S. degree, Oct. 07), "Effects of Braze Clearance on Super austenitic Stainless Steel Braze Corrosion," NACE A.B. Campbell Award Winner

CORROSION Best Paper Award (NACE)

Nicole Tailleart, (Ph.D. 2010) and Francisco Presuel Moreno (PDRA 2002-07) , “Design of a Spray Applied Al-Co-Ce Coating with Multi-functional Corrosion Properties,” NACE Corrosion Journal Best Paper Award

Morris Cohen Award (ECS)

Hongbo Cong, (Ph.D. 2009),, “Relationship between Drinking Water Chemistry and Electrochemical Properties of Cu Piping Relevant to Cold Water Pitting” Electrochemical Society Morris Cohen Graduate Student Award.

Y. Yu, (Ph.D. degree, 1998) “Mechanisms for Enhanced Active Dissolution Resistance and Passivity of Ti Alloyed with Nb and Zr,” Electrochemical Society Morris Cohen Graduate Student Award.

D.G. Kolman, (Ph.D. degree, 1996) “Passivity and Bare Surface Electrode Kinetics on β - Titanium Alloys in Aqueous Chloride Solutions and Their Relevancy to Environment-assisted Cracking,” Electrochemical Society Morris Cohen Graduate Student Award.

Australia Endeavor Award

Rebecca Schaller (Ph.D. Candidate) Atmospheric Corrosion and Hydrogen Uptake in Low Alloy and Precipitation Hardened Steel Alloys (Ph.D. expected 2015)*
(2014)

National Science Foundation Graduate Fellows

M.A. Gaudett (Koul)

Leanna Cooper (Foster)

Student Poster Presentation Awards

27 since 1992

