

Dr. John R. Scully

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

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

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

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

Chairman, NACE Awards Committee, 2005-2007

Vice-chairman, NACE Awards Committee, 2002-2005

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

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-

Baltimore Chapter Program Chairman, 1980-1982

The Electrochemical Society

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

Member, Publications Committee, 1999-present

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

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

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
 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
 Consultant Columbia Accident Investigation Board (via Valador), 2003
 Apple Computer, Inc., 2005

Other Professional Activities

Advisory Boards

1. *Defense Science Board* on Corrosion Issues in the DOD, reporting to the Undersecretary of Defense, USA., Special Government Employee
2. *Defense Science Board* on Air Force Refueling Aircraft, reporting to the Undersecretary of Defense, USA., Special Government Employee
3. *Visiting Committee* of the Department of Materials Science and Engineering at the Ohio State University, 2002-2005.
4. Technical Consultant to *Columbia Accident Investigation Board*, 2003
5. *DOE Advisory Committee for Nuclear Facilities Safety*: - Structural Integrity of Defense Nuclear Reactors at Savannah River, SC, and Hanford, WA. 1989.
6. *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.
7. Advisor to U.S. Nuclear Waste Technical Review Board, 1997.
 8. *DOE Nuclear Energy Research Initiative*- Review Panel, March, 1999.
 9. *DOE Consultant* on Corrosion of Spent Nuclear Fuels in the Interim Fuel Storage Facility, 1999.

Editorial Boards of Scientific Journals

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

Board of Review of *Corrosion Journal*
Elected term from 1996-present (ongoing)

Patents

1. Magnetic Impedance Sensing of Corrosion” Moran, Hartong, Murphy, Bundy, Scully (1988).
2. A Multi-functional Al-Co-Ce Alloy for Corrosion, Shiflet, Poon, Scully (2005)

University Service Activities

Committees - SEAS

1. SEAS Graduate Studies Committee, 1993-96
2. Dean’s Research Advisory Committee, 1996-2001
3. Dean’s Research Advisory Committee (chair), 1999-2000
3. SEAS Undergraduate Studies Committee, 1998-present
4. SEAS Open-house, faculty participant (various)

Committees - Department

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

Awards and Honors

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

1997 H.H. Uhlig Award of National Association of Engineers (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

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

102. J.G. Hoekstra, *S.B. Qadri, J.M. Fitz-Gerald, J.R. Scully, "Laser Surface Modification of a Crystalline Al-Co-Ce Alloy for Enhanced Corrosion Resistance," *Advanced Engineering Materials*, submitted (2005).

101. M.A. Jakab, J.R. Scully, "Storage and Release of Inhibitor Ions from Amorphous Al-Co-Ce Alloys: Controlled Release on Demand," *Nature Materials*, submitted, (2005).

100. Michael F. Hurley, John R. Scully, "Threshold Chloride Concentrations for Localized Corrosion on Selected Corrosion Resistant Rebar Materials Compared to Carbon Steel", *Corrosion J.*, submitted, (2005).

99. L. Organ, J.R. Scully, A.S. Mikhailov, J.L. Hudson, "A Spatiotemporal Model of Interactions Among Metastable Pits and the Transition to Pitting Corrosion," *Electrochimica Acta*, accepted April, (2005).

98. M.A. Switzer, J.R. Scully, "Crevice Scaling Laws to Investigate Local Hydrogen Uptake in Rescaled Model Occluded Sites," *J. Electrochem. Soc.*, submitted, (2005).

97. D. Little, J.R. Scully, "The Effect of Surface Pretreatment on the Under-Paint Corrosion of AA 2024-T3 at Various Temperatures," *Corrosion J.*, submitted, (2005).

96. F. Presuel, M.A. Jakab, J.R. Scully, "Inhibition of the Oxygen Reduction Reaction on Copper Using Ce, Mo, and Co Compounds," *J. Electrochem. Soc.*, accepted, (2005).

95. J.H. Payer and J.R. Scully, "Research Opportunities in Corrosion Science for Long-Term Prediction

of Materials Performance - A Report of the DOE Workshop on "Corrosion Issues of Relevance to the Yucca Mountain Waste Repository", *Journal of Corrosion Science and Engineering*, Volume 7, Preprint #15 (in review), <http://www.jcse.org/>. (2005).

94. M.A. Jakab, F. Presuel, J.R. Scully, "The Oxygen Reduction Reaction on AA 2024-T3; Experiment and Modeling using the Theory of a Heterogeneous Electrode" *J. Electrochem. Soc.*, Accepted, (2005).

93. M.E. Goldman, N. Unlu, G.J. Shiflet, J.R. Scully, " Selected Corrosion Properties of a New Al-Co-Ce Alloy," *J. Electrochem. And Solid State Letters*," 8(2), B1-B5, (2005).

92. C. Punckt, M. Bolscher, H.H. Rotermund, A. S. Mikkailov, L. Organ, N. Budiansky, J.R. Scully, J.L. Hudson, "Sudden Onset of Pitting Corrosion on Stainless Steel as a Critical Phenomenon," *Science*, 305, pp. 1133-1136, August, (2004).

91. F.J. Presuel-Moreno, M.E. Goldman, R.G. Kelly, J.R. Scully, "Electrochemical Sacrificial Cathodic Prevention Provided by a Al-Co-Ce Metal Coating Coupled to A2024-T3," *Journal of the Electrochemical Soc*, accepted, Feb., (2005).

90. M.A. Jakab, F. Presuel, J.R. Scully, "Critical Concentrations Associated with Cobalt, Cerium and Molybdenum Inhibition of AA 2024-T3 Corrosion, Delivery from Al-Co-Ce-(Mo) Alloys," *Corrosion Journal*, 61(3), pp. 246-263, (2005).

89. N. Unlu, F.Q. Guo, G.J. Shiflet, S.J. Poon, J.R. Scully, " The Effect of Pd Addition on the Glass Formation Ability and Electrochemical Corrosion Behavior of a Ternary (Al₇₅Cu₁₇Mg₈) Alloy, submitted to Materials Science and Engineering, (2004).

88. N. Unlu, F.Q. Guo, J. Ferrel, G.J. Shiflet, S.J. Poon, J.R. Scully, "The Effect of Ni Additions on Corrosion Behavior of (Al₇₅Cu₁₇Mg₈)_(100-x)Ni_x (x=0,1,3,5,7 at%) Amorphous and Crystalline Alloys, submitted to Materials Science and Engineering, (2004).

87. B.A. Kehler, J.R. Scully, "Metastable Pitting in Alloy 22 and 625 Crevices and its Influence on Crevice Stabilization", accepted in *Corrosion Journal*, December (2004).

86. N.D. Budiansky, J.L. Hudson, J.R. Scully, "Methods for Study of Spatial Interactions Among Localized Corrosion Sites" *Journal of the Electrochemical Soc.*, 152(4), pp. B152-B160, (2005).

85. Brian J. Connolly, J.R. Scully, "An Electrochemical Framework for Intergranular SCC Susceptibility as a Function of Isothermal Aging Time for an Al-Li-Cu-X Alloy," *Corrosion Journal*, submitted May, (2004).

84. Brian J. Connolly, J.R. Scully, "The Transition from Localized Corrosion to SCC in a Severely Underaged Temper of Al-Li-Cu-Ag Alloy AA 2096," *Corrosion Journal*, submitted, December (2003).

83. O. Schneider, G.O. Ilevbare, J.R. Scully, R.G. Kelly, "Surface Metrology Studies of Corrosion on AA2024-T3 Using In-situ Confocal Laser Scanning Microscopy: Part 2. Influence of electrolyte composition on trench formation around particles," *J. Electrochem. Soc.*, B151(8), pp. B465-B472, (2004).

82. G.O. Ilevbare, O. Schneider, R.G. Kelly, J.R. Scully, "Surface Metrology Studies of Corrosion on AA2024-T3 Using In-situ Confocal Laser Scanning Microscopy: Part 1. Influence of electrolyte composition on the localized corrosion of constituent particles," *J. Electrochem. Soc.*, B151(8), pp. B453-

B464 (2004).

81. N.D. Budiansky, J.L. Hudson, J.R. Scully, "Origins of Persistent Interactions Among Localized Corrosion Sites" *Journal of the Electrochemical Soc.*, 151(4), B233-B243, (2004).

80. D. Li, R.P. Gangloff and J.R. Scully, "Hydrogen Trap States in Ultrahigh-Strength AerMet[®] 100 Steel," *Metallurgical and Materials Transactions, A*, 35A, pp. 849-864, March, (2004).

79. J.E. Switzer, G.J. Shiflet, J.R. Scully, "Localized Corrosion of Al₉₀Fe₅Gd₅ and Al₈₇Ni_{8.7}Y_{4.3} Alloys in the Amorphous, Nanocrystalline, and Crystalline States: Resistance to Micrometer-Scale Pit Formation", *Electrochimica Acta*, 48, pp. 1223-1234, (2003).

78. O. Schneider, G. O. Ilevbare, J.R. Scully, R.G. Kelly, "Confocal Laser Scanning Microscopy as a Tool for In Situ Monitoring of Corrosion underneath Organic Coatings," *J. Electrochem. And Solid State Letters*, 4(12), B35-B38, (2001).

77. G.A. Young, Jr., J.R. Scully, "The Effects of Test Temperature, Temper and Alloyed Copper on Hydrogen Controlled Crack Growth of an Al-Zn-Mg-(Cu) Alloy," *Metallurgical and Materials Trans. A*, 33A, pp. 1167-1181, (2002).

76. B.A. Kehler, G.O. Ilevbare and J.R. Scully, "Crevice Corrosion Stabilization and Repassivation Behavior of Alloys 625 and 22," *Corrosion J.*, 57(12), pp. 1042-1065, (2001).

75. T.T. Lunt, V. Brusamarello, J.R. Scully, J.L. Hudson, "Interactions amongst Localized Corrosion Sites: Electrode Array Experiments and Modeling," *J. Electrochemical Soc.*, 149(5), pp. B163-173, (2002).

74. G.O. Ilevbare and J.R. Scully, "Oxygen Reduction Reaction Kinetics on Chromate Conversion Coated Al-Cu, Al-Cu-Mg and Al-Cu-Mn-Fe Intermetallic Compounds," *J. of the Electrochem. Soc.*, 148(5), p. B196-207, (2001).

73. R.L.S Thomas, D. Li, R.P. Gangloff and J.R. Scully, "Trap-affected Hydrogen Diffusivity and Hydrogen Capacity in Ultrahigh-Strength AerMet[®] 100, *Metallurgical and Materials Transactions, A*, 33A, 1991-2004, (2002).

72. R.L.S Thomas, J.R. Scully and R.P. Gangloff, "Internal Hydrogen Embrittlement of Ultrahigh-Strength AerMet[®] 100, *Metallurgical and Materials Transactions, A*, 34A, pp. 327-344, (2003).

71. D.M. Symons, G.A. Young, Jr., J.R. Scully, "The Effect of Strain on the Trapping of Hydrogen at Grain Boundary Carbides in Ni-Cr-Fe Alloys," *Metallurgical and Materials Transactions, A.*, 32A, pp. 369-377, (2000).

70. G.O. Ilevbare, J.R. Scully, "Mass Transport Limited Oxygen Reduction Reaction Rates on AA 2024-T3 and Selected Intermetallic Compounds in Chromate-Containing Solutions," *Corrosion J.*, 57, pp.134-152, (2001).

69. B.J. Connolly, J.R. Scully, "Stress Corrosion Cracking Susceptibility in Al-Li-Cu Alloys 2090 and 2096 as a Function of Isothermal Aging Time," *Scripta Mater.*, 42, pp. 1039-1045, (2000).

68. S.Y. Yu, J.R. Scully, "Effects of Nb and Zr Alloying Additions on the Passivity of Titanium in HCl Solution," submitted to *J. Electrochemical Soc.*, (2000).

67. J.R. Scully, G.A. Young, Jr., S.W. Smith, "Hydrogen Solubility, Diffusivity and Trapping in High Purity Al and Selected Al-Base Alloys," *Materials Science Forum*, 331-337, pp. 1583-1600, (2000).
66. T.T. Lunt, V. Brusamarello, J.R. Scully, J.L. Hudson, "Interactions Amongst Localized Corrosion Sites Investigated with Electrode Arrays," *J. of Electrochemical and Solid State Letters*, 3(6), pp. 271-274, (2000).
65. R.A. Bley, J.R. Scully, J.S. Hsu, "Microstructure Dependency of Nanoscale Corrosion in Al-Ni-Y Glassy Alloys," *Phil. Mag. Letters*, 80(2), pp. 85-94, (2000).
64. D.G. Kolman, J.R. Scully, "Continuum Mechanics Analysis of Plastic Deformation-Induced Film Rupture-Repassivation on $\alpha+\beta$ Titanium," *Phil. Mag. A*, 79(10), pp. 2313-2338, (1999).
63. S.Y. Yu, C. Brodrick, M. Ryan, J.R. Scully, "Effects of Nb and Zr Alloying Additions on the Reactivation of Passivated Ti-Zr and Ti-Nb Alloys in 5 M HCl," *J. Electrochemical Soc.*, 146(12), pp. 4429-4438, (1999).
62. J.R. Scully, "The Polarization Resistance Method for Determination of Instantaneous Corrosion Rates: A Review," *Corrosion Journal*, 56(2), pp. 227-242, (2000).
61. G.O. Ilevbare, J. Yuan, R.G. Kelly, J.R. Scully, "Inhibition of the Corrosion of AA 2024: Chromate Conversion Coating versus Chromate Additions," *Corrosion J.*, 53(6), pp.179-193, (2000).
60. S.W. Smith, J.R. Scully, "The Identification of Hydrogen Trapping States in an Al-Li-Cu-Zr Alloy Using Thermal Desorption Spectroscopy," *Metallurgical and Materials Transactions A*, 31A, pp. 179-193, (2000).
59. M.A. Gaudett, J.R. Scully, "Metallurgical Factors Affecting the Grain Boundary Hydrogen Embrittlement of Aged Beta Ti-3Al-8V-6Cr-4Mo-4Zr," *Metallurgical and Materials Transactions A*, 31A, pp. 81-91, (2000).
58. D.G. Kolman, J.R. Scully, "An Assessment of the Crack Tip Potentials of $\beta+\alpha$ Titanium Alloys During Hydrogen Environmentally Assisted Crack Propagation Based on Crack Tip and Passive Surface Electrochemical Measurements," *Corros. Science*, Vol. 42(11), pp. 1863-1879, (2000).
57. D.G. Enos and J.R. Scully, "Hydrogen Embrittlement of Cold Drawn, Ultra-Fine Pearlitic Steel: Critical Strain Criterion for Fracture Initiation," *Metallurgical and Materials Transactions*, 33A, pp. 1151-1166, (2002).
56. S.Y. Yu, J.R. Scully, C.M. Vitus, "Influence of Nb and Zr Alloying Additions on the Anodic Dissolution Behavior of Activated Ti in HCL Solutions," *J. Electrochem. Soc.*, 148(2), pp. B68-B78, (2001).
55. M.A. Gaudett, J.R. Scully, "Thermally Stimulated Hydrogen Release from Titanium; Experiments and Modeling," *J. Electrochemical Soc.*, 148(9), pp. B368-B375, (2001).
54. R.S. Lillard, J.R. Scully, "Calcium Hydroxide as a Promoter of Hydrogen Absorption in 99.5% Iron and a Fully Pearlitic 0.8% C Steel During Electrochemical Reduction of Water," *Corros. J.*, 56(11), pp. 1119-1132, (2000).

53. J.R. Scully, "Environment-Assisted Intergranular Cracking," *Materials Research Society Bulletin*, 24(7), pp. 36-42, (1999).
52. J.E. Sweitzer, J.R. Scully, R.A. Bley, J.W.P. Hsu, "Nanocrystalline $\text{Al}_{87}\text{Ni}_{8.7}\text{Y}_{4.3}$ and $\text{Al}_{90}\text{Fe}_5\text{Gd}_5$ Alloys That Retain the Localized Corrosion Resistance of the Amorphous State," *Electrochemical and Solid State Letters*, 2(6), pp. 267-270, (1999).
51. M.A. Gaudett, J.R. Scully, "Effects of Pre-Dissolved Hydrogen on Cleavage and Grain Boundary Fracture Initiation in Metastable Beta Ti-3Al-8V-6Cr-4Mo-4Zr," *Metallurgical and Materials Transactions A*, 30A, pp. 65-79, (1999).
50. G.A. Young, J.R. Scully, "The Diffusion and Trapping of Hydrogen in High Purity, Polycrystalline Al," *Acta Mater.*, 46, No. 18, pp. 6337-6349, 1998.
49. D.G. Kolman, M.A. Gaudett, J.R. Scully, "Modeling Anodic Current Transients from Oxide Rupture on Plastically Strained $\beta + \alpha$ Titanium," *J. Electrochemical Soc.*, 145(6), p. 1829-1840, 1998.
48. R.S. Lillard, J.R. Scully, "Electrochemical Passivation of an Ordered NiAl Intermetallic Compound," *J. Electrochemical Soc.*, 145(6), p. 2024-2032, 1998.
47. D.G. Enos, A.J. Williams, Jr., G.G. Clemeña, J.R. Scully, "Impressed Current Cathodic Protection of Steel Reinforced Concrete Pilings: Protection Criteria and the Threshold for Hydrogen Embrittlement," *Corrosion Journal*, 54(5), pp. 389-402, 1998.
46. D.G. Kolman, J.R. Scully, "Understanding the Potential and pH Dependency of High Strength β -Titanium Alloy Environmental Crack Initiation," *Metallurgical and Materials Transactions A*, 28A, pp. 2645-2656, 1997.
45. B. Wu, J.R. Scully, A.S. Mikhailov, J.L. Hudson, "Cooperative Stochastic Behavior in Localized Corrosion: I. Model," *J. Electrochem. Soc.*, 144, pp. 1614-1620, 1997.
44. T.T. Lunt, S.T. Pride, J.R. Scully, A.S. Mikhailov, J.L. Hudson, "Cooperative Stochastic Behavior in Localized Corrosion: II. Experiments," *J. Electrochem. Soc.*, 144, pp. 1620-1629, 1997.
43. B.J. Connolly, R.S. Lillard, J.R. Scully, G.E. Stoner, "Water Staining of AA 3104-H19 Can Body Stock: The Double Crevice Assembly Test Method for Detecting Aluminum Crevice Corrosion," *Corrosion J.*, 53(8), pp 644-656, 1997.
42. M.A. Gaudett, J.R. Scully, "Effects of Pre-Dissolved Hydrogen on Fracture Initiation in Metastable and Aged Beta Ti-3Al-8V-6Cr-4Mo-4Zr," *Scripta Metall.*, 36(5), pp. 565-572, 1997.
41. G.A. Young, Jr., J.R. Scully, "Thermal Desorption Hydrogen Trapping Analysis in Annealed and Sensitized Ni-Cr-Mo-Fe Alloys," *Scripta Metall.*, 36(12), pp. 713-719, 1997
40. S.Y. Yu, J.R. Scully, "Corrosion and Passivity of Ti-13%Nb-13%Cr in Comparison to Other Biomedical Implant Alloys," *Corrosion J.*, 53(12), pp. 965-976, 1997.
39. D.G. Enos, A.J. Williams, Jr., J.R. Scully, "The Long Term Effects of Cathodic Protection on Pre-stressed Concrete Structures: Hydrogen Embrittlement of Pre-stressing Steel" *Corrosion J.*, 53, pp. 891-908, 1997.
38. D.G. Kolman, J.R. Scully, "On the Repassivation Behavior of High Purity Ti and Selected α , β and

- $\beta+\alpha$ Titanium Alloys in Aqueous Chloride Solutions," *J. Electrochemical Soc.*, 143(6), pp. 1847-1860, 1996.
37. R.S. Lillard, J.R. Scully, "Hydrogen Absorption in Iron Exposed to Simulated Concrete Pore Solutions," *Corrosion J.*, 52(2), p. 125, 1996.
36. D.G. Kolman, J.R. Scully, "Limitations of Potentiostatic Repassivation Techniques and Their Relationship to the Applicability of the High Field Approximation to the Repassivation of Titanium," *J. Electrochemical Soc.*, 142, pp. 2179-2188, 1995.
35. G.S. Frankel, J.R. Scully, C.V. Jahnes, "Repassivation of Pits in Aluminum Thin Films," *J. Electrochemical Soc.*, 143(6), 1996.
34. R.G. Buchheit, K.R. Zavadil, J.R. Scully, T.O. Knight, "The Electrochemical Behavior of the Al_3Ta Intermetallic Compound and Pitting in Two Phase Al-Ta Alloys," *J. Electrochem. Soc.*, 142(1), pp. 51-58, 1995.
33. S.T. Pride, J.R. Scully, J. Hudson, "Metastable Pitting of Aluminum and Criteria for the Transition to Stable Pit Growth," *J. Electrochem. Soc.*, 141, pp. 3028-3040, 1994.
32. R.S. Lillard, J.R. Scully, "Modeling of the Factors Contributing to the Initiation and Propagation of Crevice Corrosion of Alloy 625," *J. Electrochem. Soc.*, 141, pp. 3006-3015, 1994.
31. L.M. Young, G.A. Young, Jr., J.R. Scully and R.P. Gangloff, "Aqueous Environment Enhanced Crack Propagation in High Strength Beta Titanium Alloys," *Metall. Trans. A*, 26A, pp. 1257-1271, 1995.
30. G.A. Young, Jr., J.R. Scully, "Internal Hydrogen Embrittlement of Solution Heat Treated and Aged Ti-15V-3Cr-3Al-3Sn and Ti-15Mo-3Nb-3Al," *Corrosion J.*, (50)12, pp. 919-933, 1994.
29. J.R. Scully, S.T. Hensley, "Lifetime Prediction of Organic Coatings on Steel and a Magnesium Alloy using Electrochemical Impedance," *Corrosion J.*, 50(9), pp. 705-716, 1994.
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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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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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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)*.

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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 Predictions," *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 (63)

63. J.R. Scully, H. Dogan, D. Li, R.P. Gangloff, "Controlling Hydrogen Embrittlement in Ultra-High Strength Steel," Tri-Service Corrosion Conference, Las Vegas, NV, November (2003).
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.

58. J. Scully, M. Jakab, A. Lucente, M. Goldman, H. Wang, F. Persuel-Moreno, G. Shiflet, N. Unlu, "A Multi-Functional Metallic Coating Based on Al-TM-RE Compositions", NACE, Research in Progress, San Diego, 2003.

57. N.D. Budiansky, J.L. Hudson, J.R. Scully, "Origins of Persistent Interactions Among Localized Corrosion Sites" Symposium in Honor of Hans Bohni, Electrochemical Society Mtg., Salt Lake City, October 21, 2002.

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53. G.O. Ilevbare, C. Jeffcoate, J.R. Scully, "Electrochemical Behavior of Selected Intermetallic Compounds in AA 2024-T3 after Chromate Conversion Coating," 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.

52. T. Lunt, J.R. Scully, J.L. Hudson, "Investigations of Interactions between Localized Corrosion Sites Using Electrode Arrays," 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.

51. R.L. Thomas, R.P. Gangloff, J.R. Scully, "Hydrogen Embrittlement of AerMetTM100 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.

47. D.G. Kolman, J.R. Scully, "Understanding Film Rupture Repassivation Transients on Dynamically Strained β -Titanium Alloys Using a Superdislocation Model for Slip Step Emergence" The Electrochemical Society Spring Meeting, Montreal, CA, 1997.

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 δ -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/SOCl₂," *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/SOCl₂ 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

1. Daryl Little (Ph.D. Candidate)*
2. Mike Hurley (Ph.D. Candidate)
3. Sara Anatasio (M.S. Candidate)*
4. Noah Budiansky (Ph.D. Candidate)*
5. Marta Jakab (Ph.D. Candidate)**
6. Ashley Lucente (M.S. Candidate)**
7. Beth Kehler, (Ph.D. candidate)*
8. Jeff Hoekstra, (M.S. Candidate), joint with Fitz-gerald
9. Sami Al-Ghamdi (M.S. Candidate) joint with Gangloff
10. Hongbo Cong (Ph.D. Candidate)

* 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) *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)** , *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)

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. Candidate), "*Cooperative Interactions and Lateral Corrosion Spreading During Pitting, Intergranular and Depassivation Type Corrosion,*" (Ph.D. August 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).

12. Marta Jakab, (Ph.D. Candidate), "*Co, Ce and Mo Storage, Release, Transport and Inhibition when Delivered from Amorphous Al-Co-Ce Alloys,*" (Ph.D. expected September, 05)*

13. Daryl Little, (Ph.D. Candidate), "*The Effect of Alloy Composition and Pretreatment on the Under-paint Corrosion of Copper Bearing Aluminum Alloys,*" (Ph.D. expected July, 05)

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

15. Beth Kehler, (Ph.D. Candidate), "*Control of Hydrogen Environment Embrittlement in High Strength Alloys via Manipulation of Electrochemical and Chemical Parameters,*" (Ph.D. expected, Dec. 06).

16. Honbo Cong, (Ph.D. Candidate), "*Relationship between Drinking Water Chemistry and Electrochemical Properties of Cu Piping Relevant to Cold Water Pitting*" (Ph.D. expected, Aug, 07).

* 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 expected, August 05)
22. J. Hoekstra (M.S. degree expected August., 05)
23. Sami Al-Ghamdi (M.S. Candidate, June 06) joint with Gangloff

** 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 (Post-Doctoral Research Associate, March 02 - present)
8. F. Bocher (Post-Doctoral Research Associate, Jan 05 - present)

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 (Post-Doctoral Research Associate, 05-)

Technical Staff

1. Chris Marks (01-05)

Undergraduate Researchers Advised in CESE Laboratory - 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. Dalhquist (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)
- * Indicates student paper or poster award recipient

Thesis Committees Member or Chair (not advisor)

P.D. UVa: 30 students since 1991

Ph.D. (Other University): 2 students since 1991

M.S. UVa: 30 students since 1991