CURRICULUM VITAE FOR CARL R. McMILLIN, Ph.D.

EDUCATIONAL BACKGROUND

Ph.D. 1974 Case Western Reserve University
Major: Macromolecular Science
Minor: Operations Research

M.S. 1971 Case Western Reserve University - Macromolecular Science

B.M.E. 1969 General Motors Institute of Technology - Mechanical Engineering
Major: Material Science

PROFESSIONAL AFFILIATIONS AND HONORS

University Hospitals and Case Medical Center, Cleveland, OH - Scientific Member of the Institutional Review Board for Human Protection (IRB), June 2005 – present (initial, modifications and continuing review of all human research protocols & informed consents, 26 meetings/year). Certified in Human Research Protection.

Named ***Fellow, Biomaterials Science and Engineering (FBSE*** after my name***)*** by International Union of Societies for Biomaterials Science and Engineering (UUSBSE). Awarded at World Biomaterials Congress, December 2020.

Albert Nelson Marquis Lifetime Achievement Award, 2020

Recipient of 2015 C. William Hall Award from the Society for Biomaterials "For significant contributions to the Society for Biomaterials and an outstanding record in establishing, developing, maintaining, and promoting the objectives and goals of the Society" (lifetime achievement award), April 2015.

Delegate on first People-to-People program on Biomaterials, Peoples Republic of China, October 26 to November 6, 2010 (and attended World Biomaterials Congress, Changdu, China June 2012).

Edison Biotechnology Center and Omeris (State of Ohio) 1992 – 2002, plus. Commercialization Cabinet 1997-2002; Scientific Advisory Council 1992-1994, Executive Advisory Committee 1992-1996

External Advisory Board, Center for Cardiovascular Biomaterials, Case Western Reserve University, Cleveland, OH, 1994-1998

Executive Editor (U.S.A.) of the international journal, *Bio-Medical Materials and Engineering*, Pergamon Press, 1990-1996

Editorial Advisory Board of *Medical Plastics and Biomaterials*, Canon Communications, Inc., 1994-1998

Society for Biomaterials offices: Member of the ruling Council 1999, 2000, 2001, Chair of the Biomaterials & Medical Device Commercialization Special Interest Group 1998, 1999 & 2005–2012 (renamed from Biomaterials Availability and Policy special interest group), and Vice Chair, 2000 – 2004 & 2012 - present. Chair of the K-12 Education Task Force, 1999-2001,

Reviewer for J. Biomedical Materials Res., J. Artificial Organs, Macromolecules, J. of Applied Biomaterials, Biomaterials Society annual meetings/Transactions, and Nanomedicine and Nanobiotechnology

Member: Society for Biomaterials, American Society for Testing and Materials, and others when they existed - Cleveland Area Research Directors, NeoBio (Northeast Ohio interactive group on biomedical topics),

One of thirty University of Akron faculty honored for "Significant Accomplishments in Teaching, Research, and Public Service," in 1984-1985

One of ten U.S. scientists selected for participation in Second Joint USA/USSR Symposium on Circulation and the Artificial Heart (Houston - September l98l)

One of seven U.S. scientists selected for participation in Third Joint USA/USSR Symposium on Artificial Heart Research and Development (Moscow, USSR - June 1985)

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Chairman, Research (Faculty Grants) Committee of Univ. Akron (1987- 1989); Committee member 1984-87
Adjunct Faculty, Cleveland State University, Applied Biomedical Engineering doctoral program, 2001-present
Adjunct Staff, The Cleveland Clinic Foundation, Cleveland, OH (1984-1993, 1995, 1996)
Member of several N.I.H. Contract and Grant Peer Review Panels, and reviewed grants for Edison Biotechnology Center and Summa Health System Foundation
Member, Akron Campus Clinical Deans (1984-88)
Session Chairman: Southern Biomedical Engineering Conference (1996), IUPAC Macromolecular Symposium (1994), Society for Biomaterials (1994), Academy Experimental Surgical Research (1992), Society Advancement Materials & Process Engineering (1992), Society for Biomaterials (various years since 1986)
Topic Coordinator: Novel Biomaterials, 6th World Biomaterials Congress, May 2000
Invited speaker at Gordon Conference on Biomaterials, l980
Grantsmanship Director, State of Ohio Jaycees (1978,1979). Member Greater Dayton Jaycees with various offices, 1976-1979.
N.I.H. (Heart, Lung & Blood Institute) Post-Doctoral Research Fellowships (l974, l975)
Macromolecular Science Graduate Fellowships (l969-l974),
Girnell Scholarship (1964)
DoD Secret Clearance (1980-1983)

RECENT MEETINGS ATTENDED

2020 – World Congress for Biomaterials, Glasgow, Scotland (virtual)
2019 – Society for Biomaterials annual meeting, Seattle, WA
2018 – Society for Biomaterials annual meeting, Atlanta, GA
2017 – Society for Biomaterials annual meeting, Minneapolis, MN
2016 – World Congress for Biomaterials, Montreal, Canada
2015 – Society for Biomaterials annual meeting, Charlotte, NC
2014 – Society for Biomaterials annual meeting, Denver, CO
2013 – Society for Biomaterials annual meeting, Boston, MA
2012 – World Congress for Biomaterials, Chengdu, China
2011 – Society for Biomaterials annual meeting, Orlando, FL
2011 – North American Spine Society (NASS), Chicago, IL
2010 – People to People Biomaterials Delegation to China (First "Biomaterials" delegation, organized by the President of the Society for Biomaterials)
2010 – Society for Biomaterials annual meeting, Seattle, WA
2009 – Orthopaedic Manufacturing and Technology Exposition & Conference, Chicago, IL
2009 – Society for Biomaterials annual meeting, San Antonio, TX
2008 – Orthopaedic Manufacturing and Technology Exposition & Conference, Chicago, IL
2008 – World Congress for Biomaterials, Amsterdam, Netherlands

WORK EXPERIENCE DETAIL

1997 – present**: Independent Consultant**, Brecksville, OH, dba **Synthetic Body Parts, Inc.** Biomedical product development and biomaterials consulting conducted for >100 start-up to multi-national companies. Occasional expert witness in patent and product liability lawsuits. Member of the Institutional Review Board (IRB) for human protection, University Hospitals Case Medical Center, gratis (June 2005– present, 26 meetings/year). Honey Alchemist (mead maker) and co-owner of Feisty Brood Meadery.

1999 – 2006+: **Adjunct Faculty**, Cleveland State University, Applied Biomedical Engineering doctoral program. Taught graduate engineering courses in Biomaterials, Artificial Organs, and Cardiovascular Complications of Diabetes.

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1989 - 1997: AcroMed Corporation, Cleveland, Ohio
Senior Scientist, Director Polymer Laboratory, Director of R&D. Conducted and directed research, development, evaluation, and commercialization of many metal, polymer, polymer/carbon fiber composite and elastomer based orthopedics products, primarily for the spine. Assessed potential business opportunities in Technology Assessment and Business Acquisition department.

1983 - 1989: The University of Akron, **Associate Professor**, Dept. Biomedical Engineering, **Director of the Cardiovascular Laboratory**, Institute for Biomedical Engineering Research. Conducted research on accelerated rubber fatigue testing of rubber, blood-materials interactions, permeability of elastomers, hemodynamics of artificial hearts, heart preservation techniques, synthesis & production of artificial heart rubber components for Cleveland Clinic & Univ. Washington. Taught graduate engineering courses in Biomaterials (& laboratory), Biocompatibility, and Artificial Organs.

1975 - 1983: Monsanto Research Corporation, Dayton Laboratory, Dayton, Ohio
1978 - 1983: **Contract Manager**, Managed over 30 biological and analytical research contracts for a variety of government agencies (~$1,000,000/year). Conducted and directed research and proposal writing (~100 contract proposals) on many topics including ambient air analysis and development of accelerated fatigue tests for elastomers. Corporate computer information retrieval expert - taught computerized information retrieval techniques to over 100 staff members.
1975 - 1978: **Senior Research Chemist**, Conducted research on elastomer fatigue in blood. Initiated and conducted short-term biomedical feasibility projects.

1974 - 1975: Case Western Reserve University, Cleveland, Ohio, **NIH Postdoctoral Research Fellow**. Studied blood/materials interactions and protein sequence/structure relationships of collagen and collagen analogs.

1974 - 1975: The Cleveland Clinic Foundation, Cleveland, Ohio, **Visiting Scientist**. Consulted on materials and blood/materials interactions research in the Artificial Internal Organs Department.

1972 - 1974: Case Western Reserve University, Cleveland, Ohio, **Doctoral Research**. Developed a circular dichroism spectroscopy technique for studying blood protein monolayers. Elucidated the conformation of blood clotting proteins and changes in structure with surface interaction.

1971 - 1972: Queen Mary College, University of London, England, **Research Associate**. Studied solvent effects on craze and crack growth in amorphous and semicrystalline polymers (with the world-renowned fracture mechanics expert, Professor Andrews).

1969 - 1971: Case Western Reserve University, **Masters Research**. Evaluated vacuum ultraviolet spectroscopy for characterizing the conformation of biopolymers. Evaluated reflectance circular dichroism as a method to study collagen structure in intact bone.

1964 - 1969: Packard Electric Division, General Motors Corporation, Warren, Ohio, **Jr. Engineer, Engineer**. Worked in Plastics Laboratory in support of plant problems, evaluated new polymers, and investigated the flammability of polymers for use in electrical wiring harnesses. Worked as co-op engineer as department foreman, and in product engineering, production engineering, standards lab, physical testing laboratory, and other departments.

JOURNAL, SYMPOSIA, AND CONTRACT RESEARCH PUBLICATIONS, BOOK CHAPTERS, PATENTS AND THESES

103. "Orthopaedic Implant and Method of Making Same," Brogan; Cynthia (Cleveland Heights, OH); McMillin; Carl (Brecksville, OH); US Patent Number **9,993,337** assigned to Osteosymbionics, LLC, filed July 21, 2008, issued June 21, 2018.

102. "On Implant Materials Unavailability – Historical Flashback," Carl McMillin, *Biomaterials Forum*, **38** (3), 4, 2016.

101. "Biomedical Applications of Rubbers and Elastomers," Carl R. McMillin, *Rubber Chemistry & Technology*, **79** (3), 500-519, July/August 2006.

100. "Orthopedic Biomaterials," Katz, J. Lawrence; Ambrose, Catherine G.; McMillin, Carl; Spencer, Paulette, *Encyclopedia of Biomaterials and Biomedical Engineering*, eds. Gary Wnek and Gary Bowlin, Marcel Dekker, NY, NY, June, 2004.

99. "Artificial spinal disc," DiNello: Alexandre (Franklin, MA), Kuras; James (Macedonia, OH); McMillin; Carl (Brecksville, OH); European Patent **EP1041945** B1, assigned to DePuy Acromed Inc., filed December 9, 1998, issued May 7, 2003 for designated states of AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, AND SE.

98. "Spinal disc," Serhan; Hassan (Cleveland, OH); Kuras; James (Macedonia, OH); McMillin; Carl (Brecksville, OH); Persenaire; Maarten (Chagrin Falls, OH)), US Patent Number **6,669,732**, assigned to DePuy Acromed Inc., filed August 2, 2001, issued December 30, 2003.

97. "Artificial spinal disc," Kuras; James M. (Macedonia, OH); DiNello; Alexandre M. (Franklin, MA); McMillin; Carl R. (Brecksville, OH), US Patent Number **6,162,252** assigned to DePuy Acromed Inc., filed December 12, 1997, issued December 19, 2000.

96. "Composite Structure and Method of Forming Same," Carl R. McMillin, European Patent **EP 0706876 B1**, for 11 countries, assigned to Acromed Corp., priority October 14, 1994, filed September 15, 1996, granted July 12, 2000.

95. "Spinal Disc Prosthesis," James Kuras, Carl McMillin, Maarten Persenaire, Kari Zimmers, European Patent **WO 99/20209** A61F 2/44 A1, filed October 16, 1998, priority US, October 17, 1997, filed for 19 countries and assigned to DePuy AcroMed, Inc., granted June 9, 2000.

94. "Artificial spinal disc," James M. Kuras, Alexandre M. DiNello, Carl R. McMillin, European Patent **WO 99/30651**, assigned to DePuy Acromed Inc., application September 12, 1998, Published June 4, 1999.

93 "Spinal Disc Prosthesis," James Kuras, Carl McMillin, Maarten Persenaire, Kari Zimmers, Australia Patent **AU 1999010952**, assigned to Depuy Acromed, Inc., for AU, CA, JP, & KR, filed October 16, 1998.

92. "Crisis Background and the Withdrawal of Biomaterials," Carl McMillin, Produced by Society for Biomaterials and handed out at the registration desk to all attendees of 25th Annual Meeting Society for Biomaterials, Providence, RI, April 28-May 2, 1999.

91. "Crisis Background and the Withdrawal of Biomaterials," Carl McMillin, *Biomaterials Forum*, Society for Biomaterials, **21** (1), 3, January-February 1999.

90. "Spinal disc," Serhan, Hassan; James M. (Macedonia, OH); McMillin; Carl R. (Brecksville, OH), and Persenaire, Maarten (Chagrin Falls, OH), US Patent Number **5,824,094**, assigned to AcroMed Corporation, filed October 17, 1997, issued October 20, 1998.

89. "AcroMed Interbody Fusion Devices, 'Our Story' " Hank Brown, Maarten Persenaire, Hassan Serhan, and Carl McMillin, For Use by AcroMed Personnel Only - Not for Distribution, 62 pages on Nocopi Security Paper, Copyright - AcroMed Corporation, February 1997.

88. "Mechanical Breakdown in the Biological Environment," Carl R. McMillin, pp. 267-272 in *Biomaterials Science: An Introduction to Materials in Medicine*, B. D. Ratner, A. S. Hoffman, F. J. Schoen, J. E. Lemons editors, Academic Press, New York, 1996.

87. "Composite Structure Suitable for Use as a Bone Plate and Method for Making Said Structure," Carl R. McMillin, US Patent Number **5,556,687**, assigned to AcroMed Corporation, filed October 14, 1994, issued September 17, 1996. (Structure patent for PEEK/PEKEKK carbon fiber composite for spine products)

86. "Spine Disc," Richard R. Navarro, Carl R. McMillin, and Kari B. Zimmers, US Patent Number **5,534,030**, assigned to AcroMed Corporation, filed April 25, 1994, issued July 9, 1996.

85. "Fiber Reinforced Composite Structure," Carl R. McMillin, US Patent Number **5,429,863**, assigned to AcroMed Corporation, filed October 29, 1993, issued July 4, 1995. (Device patent on pseudorandom composite structure for PEEK and PEKEKK spinal products)

84. "Spine Disc," Richard R. Navarro, Carl R. McMillin, and Kari B. Zimmers, European Patent **EP 0610837 A1**, assigned to AcroMed Corporation, priority February 9, 1993, filed February 7, 1994, granted August 17, 1994.

83. "Legislative Action on Biomaterials Availability Crisis," Carl McMillin, *Biomaterials Forum*, **17** (2), 4, May-June 1995.

82. "Elastomers for Biomedical Applications," Carl R. McMillin, *Rubber Chemistry & Technology*, **67** (3), 417-446, July/August 1994.

81. "Orthopedic Joints and Fasteners Using Aerospace Composites," Carl McMillin, *The 17th Conference on Metal Matrix, Carbon, and Ceramic Matrix Composites*, NASA Conference Publication 3235, Part 1, ed. John D. Buckley, pp. 137-151, May 1994. {Note: Conference publication 3235 contains information that falls under the purview of the U.S. Munitions List and shall not be transferred to foreign nationals without specific approval.}

80. "Method of Making a Fiber Reinforced Composite Structure Including Randomizing the Reinforcing Fibers," Carl R. McMillin, US Patent Number **5,294,391** assigned to AcroMed Corporation, filed January 26, 1993, issued March 15. 1994. (Method patent for making pseudorandom composite material for interbody fusion cages)

79. "Artificial Disc Replacement: Preliminary Report With a 3-Year Minimum Follow-up," P. Enker, A. Steffee, C. McMillin, L. Keppler, R. Biscup, and S. Miller, *Spine*, **18** (8), 1061-1070, June 15, 1993.

78. "Design of CFRP Lumbar/Thoracic Stackable Spine Fusion Cages," Carl R. McMillin and John W. Brantigan, *38th International SAMPE Symposium and Exhibition*, ed. V. Vailey, G.C. Janicki, and T. Haulik, SAMPE International Business Office, Covina, CA, **38** (1), 582-590, 1993.

77. "Evaluation of PEKEKK Composites for Spine Implants, " Carl R. McMillin *38th International SAMPE Symposium and Exhibition*, ed. V. Vailey, G.C. Janicki, and T. Haulik, SAMPE International Business Office, Covina, CA, **38** (1), 591-598, 1993.

76. "Synthesis of a Hexene Based Rubber for Artificial Spinal Discs," K. B. Zimmers, J. W. Beaver, R. R. Navarro, and C. R. McMillin, *Digest of Papers, Eleventh Southern Biomedical Engineering Conference*, Memphis State University, Memphis, TN, pages 74-80, October 2-4, 1992.

76. "A New, Non-Toxic Curing Agent for Synthetic Polyolefins," Thomas L. Fishback, Carl R. McMillin, and Michael F. Farona, *Journal of Bio-Medical Materials and Engineering*, **2**, No.2 (Summer), 83-87, 1992.

74. "An Assessment of Elastomers for Biomedical Applications," Carl R. McMillin, Chapter 3 in *High Performance Biomaterials: A Comprehensive Guide to Medical and Pharmaceutical Applications*, M. Szycher, editor, Technomic Publishing Co., NY, NY, pages 37-50, 1991.

73. "Elastomers for Your Health" Carl R. McMillin, *ChemTech*, **21**, 8, 482-485, 1991.

72. Note: Paid permission given 6/92 for reprint of "Elastomers for Your Health" from ChemTech, **21**, 482, 1991, onto microfiche, compact disc, and hard copy in the *Social Issues Resources Series* (SIRS) - Science Series, Applied Science Volume.

71. "A Method of Selecting Hemocompatible Biomaterials for Artificial Organs Under In-Vitro Conditions, " V.I. Sevastyanov, I.B. Rozanova, E.A. Tseitilina, L. Z. Khazen, A. V. Gorshkov, G. N. Kornienko, R. Eberhart, K. McMillan (mistranslated), *Meguuuhckar Texhnka* (ISSN 0025-8075), **4** 26-29, 1990. (paper is published in Russian using Cyrillic alphabet).

70. "Distribution of Failures for Increasing Strain Accelerated Fatigue Tests for Elastomers Can Be Approximated by a Gaussian Distribution," Carl R. McMillin, *Journal of Bio-Medical-Mechanical Behavior, Materials and Engineering*, **1** (1) 59-74, 1990.

69. "Biocompatibility Testing of PEKEKK," Carl R. McMillin, Sharon O. Meerbaum, and Steven P. Schmidt, *Advanced Materials: Looking Ahead to the 21st Century*, 22nd International SAMPE Technical Conference Series, Volume 22, Edited, L. D. Michelove, R. P. Caruso, P. Adams, and W. H. Fossey, Jr., SAMPE International Business Office, Covina, CA, 127-132, 1990.

68. "Modified Olefins in Medical Applications," Carl R. McMillin, Paper No. 32, American Chemical Society, Las Vegas, Nevada, May 29-31, 1990 (for sale by ACS).

67. "Overview of Elastomers in Biomedical Applications," Carl R. McMillin, Paper No. 11, American Chemical Society, Las Vegas, Nevada, May 29-31, 1990 (for sale by ACS).

66. "Current Topics in Biomedical Rubbers and Elastomers," Carl R. McMillin, *IEEE-Engineering in Medicine and Biology Magazine*, **8** (2), 30-36, 1989.

65. "Development of Compliance Chamber Diaphragms with Reduced Permeability," Carl R. McMillin, Thomas Fishback, Terrance Harper, Tofigh Mussivand, Raymond Kiraly, William Smith, Richard Navarro and Yukihiko Nose`. *J. Biomedical Materials Research*, **23**, 117-128, 1989.

64. "Elastomers in Biomedical Applications: An Overview of Types and End-Uses," C. R. McMillin, *Elastomerics*, **120** (11), 22-27, 1988.

63. "Use of Polyolefin Rubber in Artificial Hearts," Carl R. McMillin, *1987-1988 Technical Symposiums, Akron Rubber Group Inc.* (American Chemical Society), 1988 Winter Meeting Technical Papers, Michael A. Fath, Publications Chairman, pages 63-65, 1988.

62. "Flow Visualization in Artificial Heart Using Diffuse and Planar Laser Lighting," Tofigh Mussivand, Richard Navarro, Ji Feng Chen, Jack Braun, Hiroaki Harasaki, Raymond Kiraly, Celal Batur, Carl McMillin, and Yukihiko Nose', *Transactions of the American Society for Artificial Internal Organs*, Volume XXXIV, May 1988.

61. "Artificial Heart Instrumentation for Fluid Dynamic Analysis," T. Mussivand, R. Navarro, J. F. Chen, D. M. Mitchell, J. Proudfit, R. Kiraly, H. Harasaki, Y. Nose', J. Braun, C. Batur, and C. R. McMillin, *Proceedings of the ISA/88, International Conference of the Instrument Society of America*, pages 267-276, 1988.

60. "Cellular Morphology and Distribution on a Stretching Silastic-Canine Blood Interface," Carl R. McMillin, Madhusudan R. Malladi, Donald W. Ott, Michelle M. Evancho, and Steven P. Schmidt, *J. Biomedical Materials Research*, **22**, 339-351, 1988.

59. "Final Report to The Goodyear Tire and Rubber Company on the Goodyear Cardiovascular Grant," Carl R. McMillin, The University of Akron, May 1988, 43 pages.

58. "Characterization of Hexsyn, a Polyolefin Rubber," Carl R. McMillin, *J. Biomaterials Applications*, **2**, 3-100, 1987.

57. "Development of Tests to Evaluate Candidate Elastomers for Artificial Heart Diaphragms," Carl R. McMillin, *Artificial Organs*, **11** (5) 395-404, 1987.

56. "Volume Stability of the Gas-Filled Intrathoracic Compliance Chamber," W. A. Smith, S. Kaneko, J. Snow, R. Navarro, S. Matsushita, N. Sato, H. Harasaki, R. Kiraly, D. Hillegass, C. McMillin, and Y. Nose', *Progress in Artificial Organs - 1985*, ISAO Press, Cleveland, Ohio, pages 541-546, 1986.

55. "Thermally Desorbable Passive Sampling Device for Volatile Organic Chemicals in Ambient Air," Robert G. Lewis, James D. Mulik, Robert W. Coutant, George W. Wooten, and Carl R. McMillin, *Analytical Chemistry*, **57**, 214-219, 1985.

54. "EPA Method Study 24, Method 60l, Purgeable Halocarbons by the Purge Trap Method," Beverly J. Warner, Charles S. Friedman, Leroy Metcalf, Thomas J. Morrow, Arthur D. Snyder and Carl R. McMillin, Final Report on Contract EPA 68-03-2856 (September 1979-December 1982), Report No. MRC-DA-1137, 254 pages, May 1, 1984.

53. "EPA Method Study 21, Method 611, Haloethers," Carl R. McMillin, Roger C. Gable, Joseph M. Kyne, Richard P. Quill, Arthur D. Snyder, and James A. Thomas, Final Report, Contract EPA 68-03-2633 (September 1979-December 1982), Report Number MRC-DA-1159, 106 pages, May 4, 1984.

52. "EPA Method Study 26, Method 613, of 2,3,7,8-Tetrachlorodibenzo-p-dioxin," Fred D. Hileman, David E. Kirk, Thomas Mazer, Arthur D. Snyder, Beverly J. Warner and Carl R. McMillin, Contract EPA 68-03-2856 (Determination of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (Method 613): Validation of Analytical Method), Report Number MRC-DA-1138, 70 pages, March 1984.

51. "EPA Method Study 25, Method 602, Purgeable Aromatics," Beverly J. Warner, Julie M. Finke, Roger C. Gable, John E. Strobel, Arthur D. Snyder, and Carl R. McMillin, Final Report on Contract EPA 68-03-2856 (September 1979-December 1982), Report No. MRC-DA-1145, 138 pages, March 21, 1984.

50. "Physical Testing of Polymers for Use in Circulatory Assist Devices," Carl. R. McMillin, Final Report on Contract N.I.H. NO1-HV-02909, Report No. MRC-DA-1153, 61 pages, January 1984.

49. "Dynamic Mechanical Properties of Elastomers for Use in Circulatory Assist Devices," T. Murayama and C. R. McMillin, *J. Appl. Poly. Sci.*, **28**, 1871-1877, 1983.

48. "Physical Testing of Elastomers for Cardiovascular Applications," Carl R. McMillin, *Artificial Organs*, **7** (l), 78-9l, l983.

47. "Accelerated Fatigue Testing of Elastomers in Blood and Related Environments," C. R. McMillin, Chapter 21 in *Biocompatible Polymers, Metals, and Composites*, Technomic Publishing Co., pages 461-475, 1983.

46. "Passive Sampling Devices for Organic Vapors in Ambient Air," Robert G. Lewis, James D. Mulik, Robert W. Coutant, Carl R. McMillin, and George W. Wooten, *Proceedings of the 3rd National Symposium on Recent Advances in Pollutant Monitoring of Ambient Air and Stationary Sources*, (11 page manuscript), Raleigh, NC, May 3-6, l983.

45. "Applicability of Passive Monitoring Devices to Measurement of Volatile Organic Chemicals in Ambient Air," Robert G. Lewis, Robert W. Coutant, George W. Wooten, Carl R. McMillin, and James D. Mulik, *Transactions of American Institute of Chemical Engineers*, (57 page manuscript), 1983 Spring National Meeting, Houston, Texas, March 27-31, 1983.

44. "Determination of 2,3,7,8 - Tetrachlorodibenzo-p-dioxin in Industrial and Municipal Wastewaters, Method 613: Performance Evaluation and Preliminary Method Study Results," C. R. McMillin, F. D. Hileman, D. E. Kirk, T. Mazer, B. J. Warner, R. J. Wesselman, and J. E. Longbottom, Chapter 10 in *Symposium on Chlorinated Dioxins, Dibenzofurans in the Total Environment*, Butterworth Publishers, pages 181-192, 1983.

43. "The Determination of 2,3,7,8 - Tetrachlorodibenzo-p-dioxin in Industrial and Municipal Wastewaters, Methods 613: Development and Detection Limits," D. L. Foerst, J. E. Longbottom, R. J. Wesselman, A. S. Wong, M. O. Orbanesky, P. A. Taylor, C. R. McMillin, R. W. Noble, and D. Wood, Chapter 9 in *Symposium on Chlorinated Dioxins, Dibenzofurans in the Total Environment*, Butterworth Publishers, pages 165-180, 1983.

42. "Development of a Portable Ultraviolet Method for the Analysis of Polychlorinated Biphenyls in Soil," Carl R. McMillin, Beverly J. Warner, Jesse R. McKendree, and Leonard Stamper, Final Report on Electrical Power Research Institute Contract RP1263-13, Monsanto Research Corporation Report Number MRC-DA-1144, 33 pages, September 9, 1983.

41. "EPA Method Study 23B, Method 50l.2, Trihalomethanes by Liquid/Liquid Extraction," Beverly J. Warner, Sam C. Cheng, Julie M. Finke, Charles S. Friedman, Sueann Mitrosky, Arthur D. Snyder and Carl R. McMillin, Report Number MRC-DA-1136, E.P.A. Contract 68-03-2856 (Determination of Trihalomethanes by Liquid/Liquid Extraction (Method 501.2): Validation of Analytical Method), 94 pages, September l983.

40. "EPA Method Study 23A, Method 50l.l, Trihalomethanes by Purge and Trap," B. J. Warner, S. C. Cheng, C. S. Friedman, S. A. Mitrosky, A. D. Snyder and C. R. McMillin, Method Study Report on Contract EPA 68-03-2856, 106 pages, September l983.

39. "Development of an Air Monitor for Chlorobenzene and Related Chemicals," G. W. Wooten, J. Strobel, and C. R. McMillin, Final Report on Contract EPA 68-02-3469 (Development of a Method for the Collection and Analysis of Chlorobenzenes and Other Organics in High Production Areas), Monsanto Research Corporation Number MRC-DA-1131, 75 pages, May l983.

38. "Assessment of Hazardous Air Emissions (non-H_2S) from Geothermal Processes," S. C. Wilson, B. O. Desai, S. C. Cheng, C. S. Smith, C. R. McMillin, R. S. Lewis, and G. M. Rinaldi, Final Report, Contract 68-03-3025, SDM-04, U. S. Environmental Protection Agency, Report No. MRC-DA-1109, 327 pages, May 10, l983.

37. "Calculated Sampling Rate of MRC Passive Dosimeter," Carl R. McMillin, Report on Task No. 002 of EPA Contract 68-02-3699, Environmental Sciences Research Laboratory, U.S. Environmental Protection Agency, 17 pages, March 23, 1983.

36. "Physiological Testing of Diamine Chemicals," C. R. McMillin, Contract Manager, W. D. Ross, Principal Investigator, Final Report on Contract NASl-l6246, Langley Research Center, National Aeronautical and Space Administration, Monsanto Research Corporation Report Number MRC-DA-1124, 81 pages, January l983.

35. "High Performance Passive Dosimeter for Ambient Air and Short-Term Personal Monitoring Applications," G. W. Wooten, J. E. Strobel, J. V. Pustinger, and C. R. McMillin, Final Report on EPA Contract No. 68-02-3469 (September 1980-September 1982), 54 pages, January 1983.

34. "Characterization of Elastomers for Use in Circulatory Assist Devices," Carl R. McMillin, Chapter 29 in *Elastomers and Rubber Elasticity*, American Chemical Society Symposium Series 193, pages 533-548, 1982.

33. "Environmental Fate and Biological Consequences of Chemicals Related to Air Force Activities," Carl R. McMillin, Contract Manager; W. D. Ross, J. M. Fullenkamp, W. J. Hillan, M. T. Wininger, J. A. Gridley, and J. E. Noble, Authors, Final Report on Contract F 49620-79-D-0207, Air Force Office of Scientific Research, Report No. MRC-DA-1117, 164 pages, September 29, l982.

32. "Physical Testing of Polymers for Use in Circulatory Assist Devices," C. R. McMillin and A. L. Wurstner, Annual Report on Contract N.I.H. NO1-HV-02909, Report No. MRC-DA-1114, NTIS No. PB83-126706, 35 pages, August 1982.

31. "Portable Miniature Sampler for Potential Airborne Carcinogens in Microenvironments: Phase 2. Evaluation," D. S. West, F. N. Hodgson, J. J. Brooks, C. L. Heflin, T. W. Hughes and C. R. McMillin, Final Report on Contract 68-02-2774 (Development of a Portable Miniature Collection System for the Exposure Assessment Within the Microenvironment for Carcinogens, Precarcinogens, and Cofactors), Report No. MRC-DA-1080, 206 pages, July 1981.

30. "Specialized Trace Organic Chemical Analyses," Carl R. McMillin, F. D. Hileman, D. E. Kirk, T. Mazer, and R. W. Noble, Final Report on Contract 210-80-0063 for National Institute for Occupational Safety and Health, Report No. MRC-DA-1085, 8 pages, July 1981.

29. "Potential Atmospheric Carcinogens. Phase 2/3-Analytical Technique and Field Evaluation," D. W. West, F. N. Hodgson, J. J. Brooks, D. G. DeAngelis, A. G. Desai, and C. R. McMillin, Report Number EPA-600/2-81-106, MRC-DA-l078, Final Report on EPA Contract 68-02-2773, 267 pages, June 1981.

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12. "Disposal of Chlorinated Organic Wastes with Production of Chlorine as a Product," W. H. Hedley, A. Wojtowicz, and C. R. McMillin, Monsanto Research Corporation Final Report, MRC-DA-749, 212 pages, January l978.

11. "Poly (L-Lysyl-L-Alanyl-a-L-Glutamic Acid): Conformational Studies," H. J. Goren, C. R. McMillin and A. G. Walton, *Biopolymers*, **16**, 1527-1540, 1977.

10. "Exploratory Life Science Research," Carl R. McMillin, Monsanto Research Corporation Report MRC-DA-694, January l977, 14 pages.

9. "Synthesis and Characterization of an Ionizable Polyhexapeptide Collagen Model," G. F. Sigler, C. R. McMillin and A. G. Walton, *Biopolymers*, **15**, 2005-2024, 1976.

8. "Organ Imaging via Neutron Capture," C. R. McMillin, Monsanto Research Corporation Final Report, MRC-DA-554, May l976, 17 pages.

7. "On the Tertiary Structure of Tropomyosin Tactoids," A. G. Walton, C. R. McMillin, H. J. R. Weintraub, and F. I. Hurwitz, *Biochem. Biophys. Research Communications* **66**, 1180-1185, 1975.

6. "The Secondary Structure of Human Hageman Factor (Factor XII) and its Alteration by Activating Agents," Carl R. McMillin, Hidehiko Saito, Oscar D. Ratnoff, and Alan G. Walton, *J. Clinical Investigation*, **54** (6), 1312-1322, 1974.

5. "A Circular Dichroism Technique for the Study of Adsorbed Protein Structure," Carl R. McMillin and Alan G. Walton, *J. Colloid & Interface Sci.,* **48**, 345-349, 1974.

4. "Elucidation of the Secondary Structure of Some Blood Proteins," Carl R. McMillin, Ph.D. Thesis, Case Western Reserve University, 1974.

3. "Vacuum Ultraviolet Spectroscopy of Poly-a-amino Acids," C. R. McMillin and A. G. Walton, *Biopolymers*, **12**, 589-597, 1973.

2. "Vacuum Ultraviolet Spectroscopy of Biopolymers," Carl R. McMillin, M.S. Thesis, Case Western Reserve University, 1971.

1. "Flammability of Polymers for Use in Electrical Wiring Harnesses," Carl R. McMillin, Bachelor Mechanical Engineering Thesis, General Motors Institute, 1969.

AUTHOR OR CO-AUTHOR OF NATIONAL OR INTERNATIONAL MEETING PRESENTATIONS

* = Speaker

78. "4th Annual Society for Biomaterials Business Plan Competition," *Carl McMillin, a reviewer of submitted plans and a judge at the presentations, Society for Biomaterials annual meeting, Seattle, WA, April 3-6, 2019.

78. "3rd Annual Society for Biomaterials Business Plan Competition," *Carl McMillin, a reviewer of submitted plans and a judge at the presentations, Society for Biomaterials annual meeting, Minneapolis, MN, April 5-8, 2017.

77. "2nd Annual Society for Biomaterials Business Plan Competition," *Carl McMillin, a reviewer of submitted plans and a judge at the presentations, Society for Biomaterials annual meeting, Charlotte, NC, April 15-18, 2015.

76. "1st Annual Society for Biomaterials Business Plan Competition," *Carl McMillin, a reviewer of submitted plans and a judge at the presentations, Society for Biomaterials annual meeting, Denver, CO, April 16-19, 2014.

75. "Changes in Biomaterials Unavailability, Product Liability and the FDA" Carl McMillin*, The Fifth Annual Orthopaedic Manufacturing & Technology Exhibition and Conference, Chicago, IL, June 24, 2009 (PowerPoint presentation also put online).

74. "Critical events during the course of device development that most often determine whether the company will be sued?" Carl McMillin*, invited speaker in panel titled "Ethics and Implant Pathology" Society for Biomaterials, San Antonio, TX, April 22-25, 2009.

73. "Biomaterials Unavailability for Long-Term Implants," Carl McMillin*, Co-organizer and speaker in panel titled "Changes in Biomaterials Unavailability, Patents, Product Liability, Tort Reform, and the FDA", Society for Biomaterials, Atlanta, GA, September 13, 2008.

72. "Product Liability Law as Part of the Product Design Process" Carl McMillin*, The Second Annual Orthopaedic Manufacturing & Technology Exhibition and Conference, (abstract in program, p.12), Chicago, IL, June 21, 2006.

71. "Product Liability Law as Part of the Product Design Process – What Every Scientist Should Know," Tutorial Chaired by Curtis Herbert and Co-Chaired by Carl McMillin, Society for Biomaterials annual meeting, Pittsburgh, PA, April 29, 2006.

70. "Availability of Materials for Long-Term Implants, An Update" Carl McMillin*, Orthopaedic Manufacturing & Technology Exhibition and Conference - 2005." Chicago, IL, June 22, 2005.

69. "Update on Biomaterials Availability for Long-Term Implants," Panel Discussion, Carl McMillin* (organizer and moderator), Brian Jones, Scott Defelice, Michael Kell, Robert Ward and Jennifer Goode, Society for Biomaterials, Memphis, TN, April 28, 2005.

68. "Permeability of polyurethanes to silicone fluid", Carl McMillin*, Lori Beering, and Tofy Mussivand, World Congress of Biomaterials, Sidney, Australia, May 17-21, 2004.

67. “Biomaterials Activities and Interactions with Kindergarten through 12th Grade,” Carl McMillin*, Society for Biomaterials, St. Paul, MN, April 2001. Invited speaker for the Society for Biomaterials Student Chapters luncheon.

66. "What Next," Carl McMillin*, Society for Biomaterials, Providence, RI, April 1999. (Invited speaker on panel discussion of biomaterials availability)

65. “Elastomers for Biomedical Applications,” Carl R. McMillin*, Rubber Division, American Chemical Society, Cleveland, Ohio, October 22-24, 1997. (Invited paper in “Elastomers in Medicine” Symposium)

64. "The Biocompatibility of Carbon Composite Implants" Carl R. McMillin*, AcroMed 10th International Workshop - The Advanced Course in Spinal Reconstructive Surgery of the Lumbar, Thoracic and Cervical Spine," Cleveland, OH, February 19-22, 1997. (Invited Faculty)

63. "The Biocompatibility of Carbon Composite Implants" Carl R. McMillin*, 9th International Workshop - The Advanced Course in Spinal Reconstructive Surgery of the Lumbar, Thoracic and Cervical Spine," Cleveland, OH, February 28-March 3, 1996. (Invited Faculty)

62. "The Biology of Carbon Implants," Carl R. McMillin*, 8th AcroMed International Workshop - The Advanced Course in Spinal Reconstructive Surgery of the Lumbar and Thoracolumbar Spine," Cleveland, OH, October 15-17, 1995 (Invited Faculty).

61. "Composite Plate for Cranioplasty: A Window to the Brain," Carl R. McMillin*, Robert S. Biscup, and James S. Anderson," page 363, *21st Annual Meeting of the Society for Biomaterials,* San Francisco, CA, March 18-21, 1995.

60. "New Applications of a Polymer/Carbon Fiber Composite in Spinal Orthopaedics," Carl R. McMillin*, *MacroAkron'94 Abstracts*, p. 511, 35th International Union of Pure & Applied Chemistry International Symposium on Macromolecules, Akron, OH, July 11-15, 1994.

59. "Artificial Spinal Discs with up to Five Years Follow-up," Carl R. McMillin* and Arthur D. Steffee, p. 89, *Transactions 20th Annual Meeting of the Society for Biomaterials*, Boston, MA, April 5-9, 1994.

58. "Evaluation of PEKEKK Composites for Spine Implants, " Carl R. McMillin* 38th International SAMPE Symposium and Exhibition, Anaheim, CA, May 10-13, 1993.

57. "Design of CFRP Lumbar/Thoracic Stackable Spine Fusion Cages," Carl R. McMillin* and John W. Brantigan, 38th International SAMPE Symposium and Exhibition, Anaheim, CA, May 10-13, 1993.

56. "Preliminary Evaluation of a New Method Used to Evaluate *In Vivo* Environmental Stress Cracking of PEKEKK," C. R. McMillin*, Q. Zhao, and J. M. Anderson, p. 16, *Transactions, 19th Annual Meeting of the Society for Biomaterials*, Birmingham, AL, April 28-May 2, 1993.

55. "*In Vivo* Joints and Fasteners Made From High-Temperature Composites," Carl R. McMillin*, 17th Conference on Composites, Materials, and Structures - High Temperature Composite Joints and Fasteners session, Cocoa Beach, FL, January 10-15, 1993.

54. "Synthesis of a Hexene Based Rubber for Artificial Spinal Discs," K. B. Zimmers*, J. W. Beaver, R. R. Navarro, and C. R. McMillin, Eleventh Southern Biomedical Engineering Conference, Memphis State University, Memphis, TN, October 2-4, 1992.

53. "Artificial Disc Replacement: Preliminary Report with a Two-Year Minimum Follow-up," Paul Enker*, Louis Keppler, Robert S. Biscup, John W. Brantigan, Scot D. Miller, Arthur D. Steffee, and Carl R. McMillin, Presented Paper #18, page 22-23, *Proceedings of the 7th Annual Meeting, North American Spine Society*, Boston, MA, July 9-11, 1992.

52. "Biocompatibility Testing of PEKEKK," Carl R. McMillin*, Sharon, O. Meerbaum, and Steven P. Schmidt, *22nd International SAMPE Technical Conference*, Boston, MA, November 6-8, 1990.

51. "Overview of Elastomers in Biomedical Applications," Carl R. McMillin*, *Symposium on Uses of Rubber in Medical Products*, Fax II, page 40, American Chemical Society Rubber Division Meeting, Las Vegas, Nevada, May 29-June 1 1990.

50. "Modified Olefins in Medical Applications," Carl R. McMillin*, *Symposium on Uses of Rubber in Medical Products*, Fax II, page 45, American Chemical Society Rubber Division Meeting, Las Vegas, Nevada, May 29 - June 1 1990.

49. "Seven Year Data on Stress Relaxation and Permanent Set of Biomer and Hexsyn," Carl R. McMillin*, page 40, *Transactions of 15th Annual Meeting, Society for Biomaterials*, Lake Buena Vista, Florida, April 28 - May 2, 1989.

48. "Artificial Heart Instrumentation for Fluid Dynamic Analysis," Tofigh V. Mussivand, Richard P. Navarro, Je-Feng Chen, Dale M. Mitchell, Jim Proudfit, Raymond J. Kiraly, Hiroaki Harasaki, Yukihiko Nose', J. Braun*, C. Batur, and C. R. McMillin. International Conference and Exhibit of the Instrument Society of America, Houston, TX, October 16-21, 1988.

47. "Flow Visualization in Artificial Hearts Using Diffuse and Planar Laser Lighting," T. Mussivand*, R. Navarro, J. F. Chen, J. Braun, H. Harasaki, R. Kiraly, C. Batur, C. McMillin, and Y. Nose', Poster Session and Published Abstract, Eighth Annual Cleveland Clinic Foundation Research Day, Cleveland, Ohio, September 23, 1988.

46. "Flow Visualization in Artificial Hearts Using Diffuse and Planar Laser Lighting," T. Mussivand*, R. Navarro, J. Chen, J. Braun, H. Harasaki, R. Kiraly, J. Batur, C. McMillin, and Y. Nose', American Society for Artificial Internal Organs, Reno, Nevada, May 3-6, 1988.

45. "Evaluation of Accelerated Fatigue Test for Cardiovascular Elastomers," C. R. McMillin*, page 141, *Transactions of 3rd World Biomaterials Congress*, Kyoto, Japan, April 21-25, 1988.

44. "Development of a Model for Enzyme Enhanced Antibiotic Diffusion," C. R. McMillin* and M. K. Senary, page 242, *Transactions of 3rd World Biomaterials Congress*, Kyoto, Japan, April 21-25, 1988.

43. "Use of Polyolefin Rubber in Artificial Hearts," Carl R. McMillin*, Akron Rubber Group Symposium, Akron, Ohio, January 28, 1988.

42. "Compliance System for Implantable Blood Pumps," Yukihiko Nose'*, Raymond J. Kiraly, Hiroaki Harasaki, Richard Navarro, Michihiro Nasu, Carl McMillin, and Luiz Fujimoto, page 55, *Program, Devices and Technology Branch Contractors Meeting 1987*, National Heart, Lung, and Blood Institute, Bethesda, Maryland, December 7-9, 1987.

40. "Polymers as Biomaterials," Carl R. McMillin*, 24th Annual Lecture Series, Akron Rubber Group, Akron, Ohio, May 4, 1987.

40. "Compliance System for Implantable Blood Pumps," Yukihiko Nose', Raymond J. Kiraly, Hiroaki Harasaki, William A. Smith, Richard Navarro*, Micki Nasu, Carl McMillin, and Luiz Fujimoto, page 42, *Abstracts, Devices and Technology Branch Contractors Meeting*, National Heart, Lung, and Blood Institute, Bethesda, Maryland, December 8-10, 1986.

39. "Interaction of Blood with Fatiguing Substrates," Carl R. McMillin*, Madhusudan R. Malladi, Donald W. Ott, Michelle M. Evancho, and Steven P. Schmidt, page 127, *Transactions of the 13th Annual Meeting Society for Biomaterials*, New York, New York, June 2-6, 1987.

38. "Tear Strength of Silica and Carbon Black Filled Hexsyn," Farokh Parsian, Frank Kelley, and Carl McMillin*, page 119, *Transactions of the 12th Annual Meeting of the Society for Biomaterials*, Minneapolis, Minnesota, May 29-June 1, 1986.

37. "Effects of Reserpine and High Sodium Diet on Myocardial Function in Spontaneously Hypertensive Rats (SHR)," F. Sadri*, D. Ely, D. McKnight, and C. McMillin, Federation of Associated Societies for Experimental Biology Meeting, St. Louis, Missouri, April 17, 1986.

36. "Blood Pressure Effects of High Dietary Sodium and Stress are Mediated by Adrenergic Mechanisms in SHRs," D. Ely, F. Sadri*, G. Dunphy, J. Weigand, and C. McMillin, Federation of Associated Societies for Experimental Biology Meeting, St. Louis, Missouri, April 17, 1986.

35. "Development of a Composite Compliance Chamber Diaphragm," C. McMillin*, T. Fishback, T. Harper, D. Hillegass, R. Kiraly, T. Mussivand, Y. Nose', and W. Smith, *International Biomedical Engineering Symposium and Exposition Abstracts* (in Artificial Hearts & Transplantation section), Salt Lake City, Utah, January 20-23, 1986.

34. "Comparison of Alternate Preservation Methods for Heart Transplantation," Fereydoon Sadri*, Dan Ely, Frank Sellke, Robert Debski, and Carl McMillin, *International Biomedical Engineering Symposium and Exposition Abstracts* (in Artificial Hearts & Transplantation section), Salt Lake City, Utah, January 20-23, 1986.

33. "Compliance System for Implantable Blood Pumps," Yukihiko Nose', Raymond J. Kiraly, Hiroaki Harasaki, William A. Smith*, Richard Navarro, Micki Nasu, and Carl McMillin, page 92, *Devices and Technology Branch Contractors Meeting Abstracts*, National Heart, Lung, and Blood Institute, Bethesda, Maryland, December 16-18, 1985.

32. "Enhancement of Myocardial Catecholamines in an Isolated Heart-Lung Preparation," Fereydoon Sadri, Carl McMillin, Frank Sellke, Robert Debski, and Dan Ely*, American Heart Association, 58th Scientific Session, Washington, D.C., November 11-14, 1985.

31. "Volume Stability of the Gas Filled Intrathoracic Compliance Chamber," W. A. Smith*, S. Kaneko, J. Snow, R. Navarro, S. Matsushita, N. Sato, H. Harasaki, R. Kiraly, D. Hillegass, C. McMillin, and Y. Nose', 5th International Society for Artificial Organs Meeting, Chicago, Illinois, October 5-8, 1985, abstract in *Artificial Organs*, 9(A), 38, 1985.

30. "Development of Tests to Evaluate Candidate Elastomers for Artificial Heart Diaphragms," Carl R. McMillin*, Third Joint USA-USSR Symposium on Artificial Heart Research and Development, (Full paper published in English and Russian) Moscow, USSR, June 1985.

29. "Physical Testing of Polymers for Use in Circulatory Assist Devices," Carl R. McMillin*, page 138, *Devices and Technology Branch Contractors Meeting 1983, Summary and Abstracts*, National Heart, Lung, and Blood Institute, Bethesda, Maryland, December 5-7, 1983.

28. "Passive Sampling Devices for Organic Vapors in Ambient Air," R. G. Lewis*, J. D. Mulik, R. W. Coutant, C. R. McMillin, and G. W. Wooten, *Proceedings of the 3rd National Symposium on Recent Advances in Pollutant Monitoring of Ambient Air and Stationary Sources*, Raleigh, North Carolina, May 3-6, 1983.

27. "Applicability of Passive Monitoring Devices to Measurement of Volatile Organic Chemicals in Ambient Air," Robert G. Lewis*, Robert W. Coutant, George W. Wooten, Carl R. McMillin, and James D. Mulik, American Institute of Chemical Engineers, 1983 Spring National Meeting, Houston, Texas, March 27-31, 1983.

26. "Physical Testing of Polymers for Use in Circulatory Assist Devices," Carl R. McMillin*, and Alan L. Wurstner, pages 126-127, *Devices and Technology Branch Contractors Meeting 1982, Summary and Abstracts*, National Heart, Lung, and Blood Institute, Bethesda, Maryland, December 6-8, l982.

25. "Determination of 2,3,7,8-TCDD in Industrial and Municipal Wastewater, Method 613-Part 2 - Performance Evaluation and Method Study Results," C. R. McMillin*, F. D. Hileman, D. E. Kirk, T. Mazer, B. J. Warner, J. Longbottom, and R. Wesselman, (extended abstract and presentation) l84th American Chemical Society, Kansas City, Missouri, September l982.

24. "Accelerated Fatigue Testing," Carl R. McMillin*, First International Symposium on Frontiers of Biomedical Polymers, Akron, Ohio, June 2-3, l982.

23. "Solution of Problems Associated With EPA Method 25, Total Gaseous Non-Methane Hydrocarbons," Carl R. McMillin*, National Symposium on Recent Advances in Pollutant Monitoring of Ambient Air and Stationary Sources, Raleigh, North Carolina, May 4-7, l982.

22. "High Performance Passive Dosimeter for Ambient Air and Short-Term Personal Monitoring Applications," George W. Wooten*, J. E. Strobel, J. V. Pustinger and Carl R. McMillin, Monsanto Research Corporation, and James D. Mulik, U.S. E.P.A., page 83, *National Symposium on Recent Advances in Pollutant Monitoring of Ambient Air and Stationary Sources*, Raleigh, North Carolina, May 4-7, l982 (invited).

21. "Physical Testing of Polymers for Use in Circulatory Assist Devices," C. R. McMillin*, page 101, *Devices and Technology Branch Contractors Meeting Proceedings*, National Heart, Lung, and Blood Institute, Bethesda, Maryland, December 7-9, l98l.

20. "Characterization of Elastomers for Use in Circulatory Assist Devices," C. R. McMillin*, American Chemical Society l82nd National Meeting, New York, New York, abstract and paper in Symposium Proceedings Book, August 23-28, l98l.

19. "Physical Testing of Elastomers for Cardiovascular Applications," C. R. McMillin*, Second Joint US-USSR Symposium on Circulatory Assistance and the Artificial Heart, Houston, Texas, (presentation and full paper published in both English and Russian) September 28-29, l98l.

18. "Development of a Porous Polymer Passive Dosimeter," C. R. McMillin*, J. V. Pustinger, J. E. Strobel, and G. W. Wooten, American Chemical Society l82nd National Meeting, New York, New York, August 23-28, l98l.

17. "Design and Evaluation of a Multiple Sorbent Portable Sampler," C. R. McMillin*, J. J. Brooks, F. N. Hodgson, and D. S. West, American Chemical Society l82nd National Meeting, New York, New York, August 23-28, l98l.

16. "Development of a Passive Dosimeter for Ambient Air Monitoring," Dr. Carl R. McMillin with George W. Wooten*, John E. Strobel, John V. Pustinger, and James D. Mulik, page 77, *National Symposium on Monitoring of Hazardous Pollutants in Air*, Raleigh, North Carolina, April 28-May 1, l98l.

15. "Development of a Portable Multiple Sorbent Ambient Air Sampler," Dr. Carl R. McMillin with Joseph J. Brooks*, Diana S. West, F. Neil Hodgson, and James D. Mulik, page 35, *National Symposium on Monitoring of Hazardous Pollutants in Air*, Raleigh, North Carolina, April 28-May 1, l98l (invited).

14. "Physical Testing of Polymers for Use in Circulatory Assist Devices," Carl R. McMillin* and David L. Sheppard, pages 152-153, *Devices and Technology Branch Contractors Meeting Proceedings*, National Heart, Lung, and Blood Institute, Bethesda, Maryland, December 1-3, l980.

13. "Intralaboratory Validation of EPA Method 6, Haloethers in Water and Wastewater," C. R. McMillin*, Eastern Analytical Symposium, New York, New York, November l9-2l, l980.

12. "Biocompatibility of Elastomers," Carl R. McMillin*, Mark T. Wininger, William D. Ross, Richard J. Hare, Lan Fong Lee, and Joanne Gridley, Tissue Culture Symposium, Hueston Woods, Ohio (abstract and poster Session), October 17, 1980.

11. "Environmental Fate and Biological Consequences of Chemicals Related to Air Force Activities," W. D. Ross*, W. J. Hillan, M. T. Wininger, C. R. McMillin, J. A. Gridley, S. L. Kebe, J. J. Aubuchon, J. E. Spillman, C. M. Gohmann, and G. A. Hughes, Tissue Culture Symposium, Hueston Woods, Ohio , October 17, 1980 (abstract and poster session).

10. "Characterization of Elastomers for Use in Circulatory Assist Devices," C. R. McMillin*, Invited speaker to Gordon Conference on Biomaterials, July 14-18, 1980.

9. "A Sensitive *In Vitro* Agar Overlay Cytotoxicity Assay for Elastomers Using Human Epithelial Cells," W. D. Ross*, M. T. Wininger, R. J. Hare, C. R. McMillin, and J. A. Gridley, Abstract 4, *Tissue Culture Association 31st Annual Meeting*, St. Louis, Missouri, June 1-5, 1980.

8. "Physical Testing of Polymers for Use in Circulatory Assist Devices," C. R. McMillin*, pages l7l-l72, *Devices and Technology Branch Contractors Conference Program*, Bethesda, Maryland, December 10-12, 1979.

7. "Biocompatibility Evaluation of Biomedical Polymers Using *In Vitro* Mammalian Cell Test Systems," Richard J. Hare, Mark T. Wininger, Lang Fou Lee, Carl R. McMillin, and William D. Ross, Poster Session at First Ohio Valley Tissue Culture Association Symposium, Hueston Woods State Park, November 2, 1979.

6. "Physical Testing of Polymers for Use in Circulatory Assist Devices," C. R. McMillin*, pages 94-95, *Devices and Technology Branch Contractors Conference Program*, Bethesda, Maryland, December 11-l3, l978.

5. "Physical Testing of Polymers for Use in Circulatory Assist Devices," C. R. McMillin*, pages 133-134, *Devices and Technology Branch Contractors Conference Program*, Bethesda, Maryland, December 12-14, 1977.

4. "Conformational Studies of Poly (L-Lysyl-L-Alanyl-a-L-Glutamyl)," H. Joseph Goren*, T. Fletcher and C. R. McMillin, page 9, *The First Cleveland Symposium on Macromolecules: Structure and Properties of Biopolymers, Conference Abstract*, Cleveland, Ohio, October 11-l5, l976.

3. "Characterization of the Secondary Structure of Human Factor XI (Plasma Thromboplastin Antecedent)," C. R. McMillin* , A. G. Walton, H. Saito, and O. Ratnoff (abstract and poster session) *Biophysical Journal* **15** (2),147a, 1975.

2. "Interaction of Blood Platelets with Synthetic Polypeptides," D. D. Solomon*, C. R. McMillin, D. H. Cowan and A. G. Walton, (13 page manuscript preprint and presentation) A.I.Ch.E. Meeting, September 7, l975.

1. "Elucidation of the Secondary Structure and Activation of Blood Factor XII (Hageman Factor)," C. R. McMillin* and A. G. Walton, (abstract and presentation) *l8th Annual Biophysical Society Meeting Abstracts*, Minneapolis, Minnesota, June l974.

August 13, 2023