

CONTACT INFORMATION

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EMPLOYMENT HISTORY

2016 – Present *Deputy Director*, Hollings Manufacturing Extension Partnership, National Institute of Standards and Technology, Gaithersburg, MD
1986 – 2016 *Various positions*, National Institute of Standards and Technology, Gaithersburg, MD

A world-class technology organization that advances the science and practice of measurement science and standards through research and development, and consulting to manufacturing and technology-based companies and organizations. Currently serving as the Deputy Director of the Hollings Manufacturing Extension Partnership (MEP). Previously held various positions within MEP including Senior Researcher, responsible for technology scouting/technology-driven market intelligence and business-to-business network pilot projects, Senior Account Manager, Industrial Marketing Systems Manager, eBusiness Product Line Manager, Strategic Partnerships Manager and Associate Director for Program Planning and Policy between 1993 and 2010, assignments in the NIST Director's Office (Program Analyst, Senior Program Analyst), a detail to the Office of Science and Technology Policy) and multiple positions in the Ceramics Division of the Materials Science and Engineering Laboratory (Group Leader for Mechanical Properties, Researcher in Glass, Ceramics and Composites).

2001 – Present *President and Owner*, Phase 3 Consulting LLC, Brookeville, MD

Phase 3 was founded in 2001 to provide business-to-business marketing, management, and materials technology consulting and due diligence services to small and large companies.

2009 – 2011 *President*, CIMNE-USA, Washington, DC

2012 – Present *Vice-President and Acting Executive Director*, Brookeville, MD

CIMNE-USA is a U.S.-based non-profit affiliated with CIMNE (International Center for Numerical Methods in Engineering). The company is a scientific research and educational institution advancing knowledge in computer modeling and simulation to solve complex engineering problems.

1984-86 *Member of the Technical Staff, The Aerospace Corporation, El Segundo, CA*

A Federally-funded Research and Development Center that supports the U.S. Air Force's Space Division in a variety of capacities. Defined and carried out R&D programs on a variety of materials for space-based applications included tribological properties of ceramics, ceramic matrix composite fabrication and testing, glass viscosity; effects of volcanic glasses on jet engine components and optics.

1981-1983 *Member of the Technical Staff, Bendix Corporation, Columbia, MD*

Corporate research and development center. Defined and carried out R&D programs on advanced ceramics in automotive braking systems.

EDUCATION

B.S. - Pennsylvania State University, University Park, PA - B.S., Ceramic Science, 1976

S.M. - Massachusetts Institute of Technology, Cambridge, MA, Ceramics, 1978

Ph.D. - Massachusetts Institute of Technology, Cambridge, MA, Ceramics, 1981

M.B.A. - Heriot-Watt University, School of Business, Edinburgh, UK, 1998

Other Coursework

- COR 100 - Contracting Officer's Representative Level I, Jun 2015
- Innovation Engineering Black Belt 100, Jan 2012
- Innovation Engineering Leadership Institute, Feb 2011
- Mastering the Front of the Room (Advanced Facilitation), MEP University, Feb 2006
- Pathways to Profitable Innovation, Institute for the Study of Business Markets, Penn State, Jun 2005
- Principles of Lean Manufacturing with Live Simulation, MEP University, Jan 2004
- Change Management, MEP University, Jul 2003
- Power Tools for Marketing: Marketing Engineering, Institute for the Study of Business Markets, Penn State, Jul 2003.
- Developing Next Generation Integrated Marketing Communications, Institute for the Study of Business Markets, Penn State, Mar 2003
- Competitor Analysis and Intelligence, Institute for the Study of Business Markets, Penn State, Jun 2002
- Contracting Officer's Technical Representative (COTR) Training, 2001
- Value and Pricing Strategy, Institute for the Study of Business Markets, Penn State, Oct 2000.
- eBusiness in Business Markets, Institute for the Study of Business Markets, Penn State, Jul 2000.
- Segmentation Marketing, Institute for the Study of Business Markets, Penn State, Sep 1999.
- Marketing Strategies for Business Markets, Institute for the Study of Business Markets

and Penn State Executive Programs, Nov 1998.

- 22nd Venture Capital Institute, sponsored by NASBIC and NVCA, St. Charles, IL, 1996
- Facilitation, Take Charge Consultants, Apr 1994.
- Negotiate to Win, Cooper Management Institute, 1993.
- Metal Matrix Composites, University of Maryland/UCLA, 1983.

PROFESSIONAL QUALIFICATIONS

Government representative, FDA Device Good Manufacturing Practice Advisory Committee, 2010-present

Government representative, Institute for the Study of Business Markets, Penn State, 1995-2015

Microsoft Office applications (Word, PowerPoint, Excel)

Buzan's MindMapping

AWARDS

Fellow, American Ceramic Society, 1993

Bronze Medal Award, U.S. Department of Commerce, 2000

PUBLICATIONS

D. C. Cranmer (invited), "Test Methods for Ceramic Matrix Composites", in Handbook on Continuous Fiber Reinforced Ceramic Matrix Composites, R. L. Lehman, S. K. El-Rahaiby, and J. B. Wachtman, Jr., editors, CIAC/CINDAS (Purdue) and ACerS (1995).

D. C. Cranmer (invited), "Critical Issues in Elevated Temperature Mechanical Testing of Ceramic Matrix Composites", in Elevated Temperature Mechanical Behavior of Ceramic Matrix Composites, S. V. Nair and K. Jakus, eds., Butterworth Hienneman, 1995.

David C. Cranmer, "The Manufacturing Extension Partnership", FCIM Focus, May 26, 1994.

C. A. Stone, D. H. Blackburn, D. A. Kauffman, D. C. Cranmer, I. Olmez, and M. Rossbach, "⁶Li-doped Silicate Glass for Thermal Neutron Shielding", Nucl. Inst. Meth. in Phys. Res. A, 349 (1994) 515-520.

D. C. Cranmer, "A Government Perspective on the Advanced Materials and Processing Program (AMPP)", Cer. Eng. Sci. Proc., 14 [7-8] 46-59 (1993).

A. Munoz F., R. J. Reeves, B. Taheri, R. C. Powell, D. H. Blackburn, and D. C. Cranmer, "The Dependence of Laser-Induced Refractive Index Changes in Glass on the Chemical Composition", J. Chem. Phys., 98 [8] 6083-6091 (1993).

D. Cranmer (invited), "Lifetime and Reliability Predictions of Advanced Ceramics Based on Creep and Creep Rupture Mechanisms" in Advances in Reliability, A. P. Basu, ed., North-Holland, Amsterdam, 1993, pp. 59-73.

David C. Cranmer (Editor), "Proceedings of the 17th Annual Conference on Composites and Advanced Ceramics", Ceramic Engineering and Science Proceedings, ACerS, Westerville, OH, 1993.

S. M. Wiederhorn, B. J. Hockey, D. C. Cranmer, and R. Yeckley, "Transient Creep Behaviour of Hot-Isostatically Pressed Silicon Nitride", *J. Mater. Sci.*, 28 (1993) 445-453.

J. S. Broz, D. C. Cranmer, M. F. DeSantis, and B. Fleisher, "Aspects of Performance in the High Technology Sector", Issues in Science and Technology Working Papers, Executive Office of the President, Office of Science and Technology Policy, January 7, 1993.

David C. Cranmer (Editor), "Proceedings of the Workshop on Testing Methodology for Glass, Glass-Ceramic, and Ceramic Matrix Composites", held at NIST on February 8, 1990, NIST, Gaithersburg, 1992.

W. D. St. John, B. Taheri, J. P. Wicksted, R. C. Powell, D. H. Blackburn, and D. C. Cranmer, "Time Dependent Thermal Lensing in Lead Oxide Modified Silicate Glass", *J. Opt. Sci. B*, 9 [4] 610-616 (1992).

B. Taheri, A. Munoz F., W. D. St. John, J. P. Wicksted, R. C. Powell, D. H. Blackburn, and D. C. Cranmer, "Effects of the Structure and Composition of Lead Glasses on the Thermal Lensing of Pulsed Laser Radiation", *J. Appl. Phys.*, 71 [8] 15 April 1992.

Valentina A. French, Richard C. Powell, Douglas H. Blackburn, and David C. Cranmer, "Refractive Index Gratings in Rare Earth-Doped Glasses", *J. Appl. Phys.*, 69 (2) 913-917 (1991).

P. Vandiver, C. Swann, and D. Cranmer, "A Review of Mid-Second Millennium B.C. Egyptian Glass Technology at Tell el-Amarna", in Materials Issues in Art and Archaeology, II, P. Vandiver, J. Drusik, and G. Wheeler, eds., MRS Symposium Volume 185, 1991.

C. A. Stone, D. F. R. Mildner, R. Zeisler, and D. C. Cranmer, "Capture Gamma-ray Spectroscopy Using Cold Neutron Beams", in Proceedings of the 7th International Conference on Capture Gamma-ray Spectroscopy and Related Topics, AIP Conference Proceedings Vol. 238, R. W. Hoff, ed., AIP, New York, 1991, pp. 929-935.

S. M. Wiederhorn, R. Krause, and D. C. Cranmer, "Tensile Creep Testing of Structural Ceramics", in Proceedings of the Twenty-ninth Annual Automotive Technology Development Contractors' Coordination Meeting, 28-31 October 1991, Dearborn, MI, P-256, Society of Automotive Engineers, Warrendale, 1991, pp. 273-280.

D. Cranmer (invited), "Fiber Coatings and Properties in Ceramic Matrix Composites", in Composite Materials and Coatings, AESF Proc., 1991.

David C. Cranmer (invited), "Overview of Technical, Advanced, and Engineering Ceramics" in Ceramics and Glasses, ASM Engineered Materials Handbook, Volume 4, S. J. Schneider, ed., ASM International, Columbus, OH, 1991, pp. 16-20.

David C. Cranmer (Editor), "Fundamentals of Carbon/Carbon", Proceedings of a Workshop held at NIST on December 5-6, 1990, NIST, Gaithersburg, 1991.

D. C. Cranmer, B. J. Hockey, S. M. Wiederhorn, and R. Yeckley, "Creep and Creep-Rupture of HIP-ed Silicon Nitride", Cer. Eng. Sci. Proc., 12 [9-10] 1862-72 (1991).

David C. Cranmer, "An Assessment of Testing Methodology for Ceramic Matrix Composites", in Advanced Composite Materials, M. Sacks, ed., ACerS, Westerville, 1991, pp. 1003-1010.

David C. Cranmer, "An Assessment of Testing Methodology for Glass, Glass-Ceramic, and Ceramic Matrix Composites", J. Res. NIST, 96 [4] 493-501 (1991).

D. C. Cranmer, T.-J. Chuang, S. W. Freiman, and A. S. Raynes, "Design Diagrams For Heavy Metal Fluoride Glass Windows", in Proceedings of the Topical Meeting on High Power Laser Optical Components, 30-31 October 1989, Part 1. Unclassified Papers, J. L. Stanford, ed., NWC TP 7080, December 1990, pp. 98-114.

David C. Cranmer, Stephen W. Freiman, Grady S. White, and Alan S. Raynes, "Moisture- and Water-Induced Crack Growth in Optical Materials", in Optical Surfaces Resistant to Severe Environments, S. Musikant, ed., SPIE Volume 1330, SPIE, Bellingham, 1990, pp. 152-163.

David C. Cranmer, Uday V. Deshmukh, and Thomas W. Coyle, "Comparison of Methods for Determining Fiber/Matrix Interface Frictional Stresses in Ceramic Matrix Composites" in Thermal and Mechanical Behavior of Ceramic Matrix and Metal Matrix Composites, ASTM STP 1080, J. M. Kennedy, H. H. Moeller, and W. S. Johnson, eds., ASTM, 1990, pp. 124-135.

Carol A. Handwerker, Uday V. Deshmukh, and David C. Cranmer, "Fabrication and Interface Debonding of Al₂O₃-Cr₂O₃-Cr Composites" in Metal and Ceramic Matrix Composites:

Processing, Modeling, and Mechanical Behavior, R. B. Bhagat, A. H. Clauer, P. Kumar, and A. M. Ritter, eds., TMS, Warrendale, 1990, pp. 457-465.

David C. Cranmer, "Fiber Coating and Characterization", *Bull. Amer. Ceram. Soc.*, 68 [2] 415-419 (1989).

Uday V. Deshmukh, Akira Kenai, Stephen W. Freiman, and David C. Cranmer, "Effect of Thermal Expansion Mismatch on Fiber Pull-out in Glass Matrix Composites", in High Performance-High Temperature Composites, J. M. Strife and S. G. Fishman, eds., MRS Symposium Volume 120, 1988, pp. 253-258.

David C. Cranmer, "A Perspective on Fiber Coating Technology", *Cer. Eng. Sci. Proc.*, 9 [9-10] 1121-1124 (1988).

Ori Yeheskel, Mari Lou Balmer, and David C. Cranmer, "Interfacial Chemistry of Mullite-Mullite Composites", *Cer. Eng. Sci. Proc.*, 9 [7-8] 687-694 (1988).

D. C. Cranmer, "Wear Surface Analysis of Silicon Nitride", *Lubr. Eng.*, 44 [12] 975-980 (1988).

D. C. Cranmer, "Ceramic Tribology-Needs and Opportunities", *Trib. Trans.*, 31 [2] 164-173 (1988).

J. E. Blendell, C. K. Chiang, D. C. Cranmer, S. W. Freiman, E. R. Fuller, Jr., E. Drescher-Krasicka, Ward L. Johnson, H. M. Ledbetter, L. H. Bennett, L. J. Swartzendruber, R. B. Marinenko, R. L. Myklebust, D. S. Bright, and D. E. Newbury, "Relationship of Electrical, Magnetic, and Mechanical Properties to Processing in High-Temperature Superconductors" in Chemistry of High-Temperature Superconductors, ACS Symposium Series 351, ACS, Washington, DC, 1987, pp. 240-260.

J. E. Blendell, C. K. Chiang, D. C. Cranmer, S. W. Freiman, E. R. Fuller, Jr., E. Drescher-Krasicka, Ward L. Johnson, H. M. Ledbetter, L. H. Bennett, L. J. Swartzendruber, R. B. Marinenko, R. L. Myklebust, D. S. Bright, and D. E. Newbury, "Processing-Property Relations for $Ba_2YCu_3O_{7-x}$ High T_c Superconductors", *Adv. Cer. Matls.*, 2 [3B] 512-529 (1987).

D. C. Cranmer and D. J. Speece, "Dynamic Fatigue of Ultralow Expansion Glass", *Adv. Cer. Matls.*, 2 [3A] 219-221 (1987).

D. C. Cranmer and D. J. Speece, "Fiber-Matrix Interactions in Carbon Fiber/Cement Matrix Composites", in Tailoring Multiphase and Composite Ceramics, R. E. Tressler, G. L. Messing, C. G. Pantano, and R. E. Newnham, eds., Plenum Press, New York, 1986, pp. 609-614.

D. C. Cranmer, "Design of Ceramic Components Based on Fracture Mechanics Concepts", *Theo. Appl. Frac. Mech.*, 5 (1986) 57-62.

D. C. Cranmer, "Needs in Ceramic Tribology", in Communications on the Materials Science and Engineering Study, MRS, Pittsburgh, 1986, pp. 7-10.

D. C. Cranmer and A. A. Galuska, "Quantitative Wear Surface Analysis of SiC Using a Multiple Technique Approach", *Adv. Cer. Matls.*, 1 [3] 247-251 (1986).

D. C. Cranmer, "Friction and Wear Properties of Monolithic Silicon-Based Ceramics", *J. Mat. Sci.*, 20 (1985) 2029-2037.

D. C. Cranmer, "Tribological Properties of Glass-Ceramics", *J. Amer. Ceram. Soc.*, 67 [9] C180-C182 (1984).

D. C. Cranmer and D. R. Uhlmann, "Viscosity of Liquid Albite: A Network Material", *J. Non-Crys. Sol.*, 45 (1981) 283-288.

D. C. Cranmer and D. R. Uhlmann, "Viscosities in the System Albite-Anorthite", *J. Geophys. Res.*, 86 [B9] 7951-7956 (1981).

D. C. Cranmer, D. R. Uhlmann, H. Yinnon, and R. Salomaa, "Barrier to Crystal Nucleation in Anorthite", *J. Non-Crys. Sol.*, 45 (1981) 127-136.

D. C. Cranmer, R. M. Cannon, and U. Chowdhry, "Microstructure Control in SiC" in Proceedings of the Workshop on Ceramics for Advanced Heat Engines, ERDA CONF-770110, pp. 175-181, 1977.

D. C. Cranmer, R. E. Tressler, and R. C. Bradt, "Surface Finish Effects and the Strength-Grain Size Relation in SiC", *J. Amer. Ceram. Soc.*, 60 [5/6] 230-232 (1977).

PATENTS

J. L. Dexter, D. G. Cooper, D. H. Blackburn, D.C. Cranmer, and D. A. Kauffman, "An Ultraviolet Rotator Glass", U.S. Patent 5,364,819, November 15, 1994.

D. H. Blackburn, C. A. Stone, D.C. Cranmer, D. A. Kauffman, and J. A. Grundl, "Neutron Absorbing Glass Compositions", U.S. Patent 5,221,646, June 22, 1993.

BOOKS

Co-Editor with David Richerson, "Mechanical Testing Methodology for Ceramic Design and Reliability", Marcel Dekker, New York, February 1998.

PROFESSIONAL MEMBERSHIPS

National Institute of Ceramic Engineers
Sigma Xi
Keramos