



# M.L. “Bob” Emiliani

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## Résumé

### **President, Cubic LLC (formerly The CLBM LLC) 1999-Present**

- Executive training, coaching, and consulting firm specializing in leadership development, strategy, progressive management, and educational improvement.

### **ACADEMIC EXPERIENCE: 1999-2022**

#### **Connecticut State University – Applied Innovation Hub – New Britain, Conn. 2005-2022**

*Professor Emeritus, School of Engineering, Science, and Technology, 2022*

*Professor, School of Engineering, Science, and Technology, 2010-2022*

*Associate Professor, School of Engineering, Science, and Technology, 2005-2010*

- Teaching

Applied continuous improvement principles and practices to teaching since 1999.

- Teach graduate courses in Lean leadership\*, supply chain management, failure analysis of management decisions\*, entrepreneurship, and research methods (\* one-of-a-kind courses)
- Teach undergraduate course in project management, leadership, and supply chain management
- Quality of Instruction = 4.61 and Quality of course = 4.46 (out of 5) average for 1999-2015
- Supervised ten M.S. applied research projects and one Ph.D. dissertation.
- CCSU Excellence in Teaching Award: 2008-2009 Honor Roll and 2015-2016 Nominee

- Creative Activity

Research Focus: Leadership, operations, supply chains, and higher education.

- Wrote 24 books and 25 peer-reviewed papers on leadership and related topics
- Creator of the “Lean Teaching” pedagogy, 1999-2022
- Received awards for excellence for two papers

- Service

Improved various graduate school and department processes to eliminate confusion, errors, and re-work, and to improve student satisfaction: MSTM program metrics, comprehensive exam, peer evaluation, student course evaluation, graduate research projects, and award nomination process.

- M.S. Technology Management Program Leader (75 students avg.), 2008-2020
- All-In Lean Program, Principal, Polaris MEP, 9/18-3/21
- Alternate Department Representative to Faculty Senate, 9/19-9/21
- Department Representative to Faculty Senate, 9/15-5/19
- Faculty Senate Committee on Committees, 9/18-5/19
- Department Evaluation Committee, 9/08-5/09, 9/09-5/15 (chair), 9/15-5/16, 9/17-5/18
- Faculty Senate Committee on Constitution and By-Laws, 9/15-5/16
- Graduate Studies Committee, 9/05-5/09, 1/12-5/14
- Graduate Scholarship Committee, 9/09-9/10 and 1/12-5/14 (chair)
- Dean Search Committee, 2012-2013
- Faculty Search Committee. 2007, 2008, 2010, 2014, 2015
- CSU Trustees Research Award Committee, 2011-2012

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- CSU-AAUP Faculty Research Grants Review Committee, 2009-2012
- Graduate Curriculum Subcommittee, 9/05-5/09
- School of Engineering & Technology Library Liaison, 9/08-5/12
- Examiner for National Shingo Research Prize for Excellence in Manufacturing, 2006-2018
- North American Regional Editor, *Supply Chain Management*, 2005-2007
- Connecticut Shingo Prize Advisory Board, 4/05-9/07

## **Rensselaer Polytechnic Institute – Hartford, Conn. 1999-2004**

*Clinical Professor, Lally School of Management and Technology*

- Teaching
  - Teach graduate courses: leadership, supply chain management, and failure analysis of management decisions
  - IDEA Center student survey ratings of 4.6-4.8 for teacher and course excellence, vs. IDEA system average of 4.2 and 3.9, respectively (out of 5.0).
  - Supervised over 35 culminating experience and independent study projects.
- Creative Activity
  - Wrote one book and 20 peer-reviewed journal papers in two main fields: leadership and supply chain management. Received four awards for excellence for management publications. B2B e-business papers are recognized as seminal works.
- Service
  - Dean search committee member; academic catalog editor; curriculum committee member (rationalized course offerings and re-structured MS degree concentrations); kaizen process manager and team leader for the Executive Master’s program curriculum.

## **INDUSTRY EXPERIENCE: 1985-1999**

### **United Technologies Corporation – Hartford, Conn.**

*Manager, Organizational Learning, Corporate Supply Chain Management*

- Developed supply management training program and implemented strategies for linking supply chain management to engineering, manufacturing, finance, and quality.
- Responsible for corporate-wide technical communications for supply chain management.
- Created and implemented “Enterprise Supply Management Program” for new college graduates.
- Created and implemented high-potential employee recruiting process and supply chain management leadership competency model.

### **Pratt & Whitney – Middletown, Conn.; Rocky Hill, Conn.; and Jupiter, Fla.**

*UTC Commodity Manager, Aerospace Machined Parts*

- Developed strategies and implementation pathways for sourcing over \$800M in annual spending across UTC’s aerospace business units: P&W, Sikorsky, and Hamilton Standard.
- Led and implemented product and process family sourcing activities.
- Led the first B2B online reverse auctions. Sourcing team won UTC Leadership Award in 1998.

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## *Commodity/Supply Manager, Operations*

- Led cross-functional team of buyers, material planning, quality, finance, engineering, and continuous improvement in strategic and tactical procurement of \$110M annual spend for small machined parts commodity category. Improved on-time delivery from 69% to 95%.
- Introduced TPS methods to multi-tier small machined parts supply chain resulting in long-term improvements in cost, delivery, and quality performance.
- Initiated bi-monthly supply chain e-mails to first, second, and third tier suppliers.
- Initiated sub-tier commodity management.
- Created and implemented “Supply Management Leadership Program” for new college graduates.
- Established four corporate best practices in supply chain management.

## *Business Unit Manager, Operations*

- Led high temperature polymer and ceramic matrix composite business unit with \$5M in annual sales. Responsible for shop operations, manufacturing engineering, purchasing, quality, EH&S, and HR.
- Trained by Shingijutsu in TPS and kaizen. Reduced part cost and improved productivity, delivery and quality performance.

## *Materials Engineering Technologist, Engineering*

- Team leader for \$40M low-emission combustor design and materials development program in partnership with GE Aircraft Engines and NASA-Lewis Research Center.
- Managed development of advanced fibers and ceramic matrix composite materials and processes.
- Responsible for proposal preparation, cost estimating, project planning, implementation, \$5M annual budget, and technical reports.

## *Senior Materials Engineer, Engineering*

- Project leader responsible for proposal preparation, cost estimating, planning, budget, data collection, and technical reports.
- Won \$750K in funding from U.S. Government for advanced materials and process development of reinforcing fibers and interface coatings for metal, intermetallic, and ceramic matrix composites.

## **Monet Jewelers, Inc. – Pawtucket, Rhode Island**

### *Materials Engineer, Operations*

- Reduced warranty expense by identifying new adhesive that significantly improved durability.
- Solved systemic biocompatibility problem with pierced earrings.
- Evaluated the quality and durability of current and planned decorative and wear-resistant coatings for costume jewelry.

## **OTHER EXPERIENCE**

- Consulting Engineer, Marc H. Richman, Inc. Providence, RI
- Contributing Editor, *Bike Tech* and *Bicycle Guide* Magazines
- Technician, Connell Metcalf and Eddy Inc., Coral Gables, FL
- Salesperson, Camera Corner South, Inc., Miami, FL

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## EDUCATION

Brown University	Ph.D.	1988	Engineering (Materials)	Providence, RI
University of Rhode Island	M.S.	1984	Chemical Engineering	Kingston, RI
University of Miami	B.S.	1980	Mechanical Engineering	Coral Gables, FL

## AWARDS AND HONORS

- Nominee for the 2015-2016 CCSU Excellence in Teaching Award
- Erasmus Mundus Fellowship, Politecnico di Milano, Milan, Italy, May 2011
- 2008-2009 CCSU Excellence in Teaching Award Honor Roll
- Highly Commended Paper award for “Executive Decision-Making Traps and B2B Online Reverse Auctions,” 2007
- Highly Commended Paper award for “Using Kaizen to Improve Graduate Business School Degree Programs,” 2006
- Affiliated Scholar (invited), National Academy of Engineering, Center for the Advancement of Scholarship on Engineering Education, 2005
- Faculty Achievement Award, Rensselaer Polytechnic Institute, December 2003
- Shingo Research Award for the book *Better Thinking, Better Results*, 2003
- Citation of Excellence award for “Redefining the Focus of Investment Analysts,” 2002
- Highly Commended Paper award for “Cracking the Code of Business,” 2001
- AACSB/KKC Japan Study Tour participant, 2001
- Outstanding Paper Award for “Lean Behaviors,” 1998
- UTC Special Award, 1995 and 1997
- UTC Patent Award, 1995
- Outstanding Contributions Award, HSCT–Enabling Propulsion Materials Program, April, 1994
- Feature paper in the 1 October 1993 issue of *Journal of Materials Science*
- P&W Eagle Award, “Outstanding proposal and negotiation of NASA’s HSCT/EPM Program,” 12/91
- First Place, ASME Region XI Sanford-Wallace Student Paper Contest, 1981
- C.E. Anderson Award for General Excellence, Department of Mechanical Engineering, University of Miami, 1980

## PROFESSIONAL ACTIVITIES

- Shingijutsu-Kaizen Training, Eastford, Conn., 16-20 March 2015 (with sensei Nakao)
- Shingijutsu-Kaizen Training, Nagoya, Japan, 8-15 November 2014 (with sensei Nakao)
- Shingijutsu-Kaizen Training, Eastford, Conn., 28 July - 1 August 2014 (with sensei Nakao)
- North American Regional Editor, *Supply Chain Management: An International Journal*, 2005-2007
- Editorial Review Boards
  - Leadership and Organization Development Journal*, 2006-2021
  - Supply Chain Management: An International Journal*, 2001-2016
  - Management Decision*, 2001-2011
  - Industrial Marketing Management*, 2005-2009

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- Ad-hoc Reviewer for:

*Journal of Management History*

*Journal of Management Development*

*Quality Assurance in Education*

*International Journal of Operations and Production Management*

*International Journal of Marketing for Industrial and High Tech Firms*

*Journal of Marketing Research*

*International Journal of Electronic Business*

## PUBLICATIONS

### BOOKS – Lean Leadership and Lean Management

1. *The Aesthetic Compass: Foundation of Leadership Action and Inaction*, ISBN 978-1-7320191-5-7, April 2022
2. *An Outside View: The Blog Posts of Bob Emiliani*, unpublished work, June 2021
3. *Wheel of Fortune: Getting to the Heart of Business Strategy*, with M. Torinesi, ISBN 978-1-7320191-4-0, January 2021
4. *Improvement: A Hundred-Year Plan for Progressive Management*, ISBN 978-1-7320191-3-3, November 2020
5. *Management Mysterium: The Quest for Progress*, ISBN 978-1-7320191-2-6, April 2020
6. *Irrational Institutions: Business, Its Leaders, and The Lean Movement*, ISBN 978-1-7320191-1-9, January 2020
7. *Eliminating Waste in Teaching: Timeless Lessons for Improving Teaching and Training*, Lillian M. Gilbreth with Bob Emiliani, ISBN 978-1-9320191-0-2, November 2019
8. *The Triumph of Classical Management Over Lean Management: How Tradition Prevails and What to Do About It*, ISBN 978-09898631-9-3, February 2018, updated December 2018
9. *Conversations with Taiichi Ohno: Management Insights for the Digital Age*, ISBN 978-0-9898631-7-9, June 2017
10. *Critique of Lean: Pathway to Improvement*, ISBN 978-0-9898631-7-9, March 2017
11. *Speed Leadership: A Better Way To Lead In Rapidly Changing Times*, Second Edition, ISBN 978-0-9898631-6-2, October 2015
12. *Shingijutsu-Kaizen: The Art of Discovery and Learning*, with R. Wood and M. Herscher, ISBN-13: 978-0-9898631-5-5, October 2015
13. *Speed Leadership: A Better Way To Lead In Rapidly Changing Times*, ISBN 978-0-9898631-4-8, July 2015 (out of print)
14. *Lean Is Not Mean: 68 Practical Lessons in Lean Leadership*, ISBN 978-0-9898631-3-1, June 2015
15. *Lean University: A Guide to Renewal and Prosperity*, ISBN 978-0-9898631-2-4, June 2015
16. *Lean Teaching: A Guide to Becoming a Better Teacher*, ISBN 978-0-9898631-1-7, June 2015
17. *Kaizen Forever: Teachings of Chihiro Nakao*, with K. Yoshino and R. Go, ISBN 978-0-9898631-0-0, May 2015
18. *Cambiare Per Il Meglio: Riflessioni per Imprenditori e Manager (Change for the Better: Reflections for Entrepreneurs and Managers)*, ISBN 978-0-9845400-9-9 (e-book), May 2014. Translated by Marco Bertoli.
19. *Kaizen Heart and Mind: A Collection of Insightful Essays on Lean Leadership*, (Volume 3), ISBN 978-0-9845400-6-8 (e-book), January 2014 (out of print)
20. *The Lean Professor: Become a Better Teacher Using Lean Principles and Practices*, ISBN 978-0-9845400-8-2, (e-book), June 2013 (out of print)
21. *Nobody Is Exempt From Improvement: How Improving Leadership Processes Improves Leaders' Credibility and Effectiveness*, ISBN 978-0-9845400-7-5 (e-book), March 2013 (out of print)
22. *Kaizen Heart and Mind: A Collection of Insightful Essays on Lean Leadership*, (Volume 2), ISBN 978-0-9845400-5-1 (e-book), December 2012 (out of print)
23. *Lean IS Healthcare: A New Interpretation of Lean Management for the 21st Century*, ISBN 978-0-9845400-4-4 (e-book), April 2012 (out of print)

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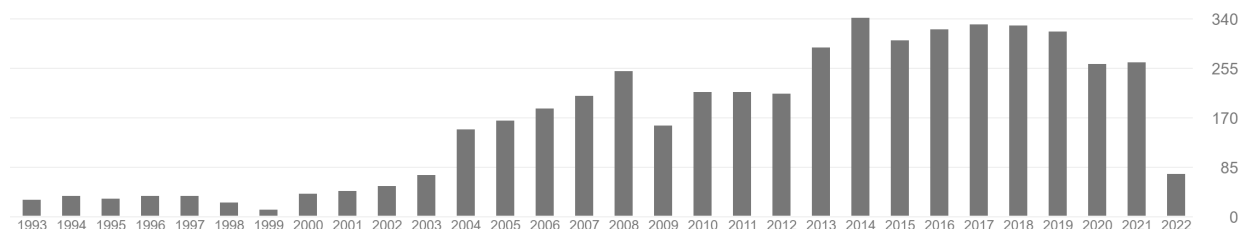
24. *We Can Do It!: Improving the Relevancy and Value of Higher Education Using Lean Management*, ISBN 978-0-9845400-3-7 (e-book), February 2012 (out of print)
25. *Kaizen Heart and Mind: A Collection of Insightful Essays on Lean Leadership*, (Volume 1), ISBN 978-0-9845400-2-0 (e-book), December 2011 (out of print)
26. *Moving Forward Faster: The Mental Evolution from Fake Lean to REAL Lean*, ISBN 978-0-9845400-1-3, January 2011
27. *REAL LEAN: Unsolved Problems in Lean Management*, Volume 6, ISBN 978-0-9845400-0-6, October 2010
28. *REAL LEAN: Strategies for Lean Management Success*, Volume 5, ISBN 978-0-9722591-9-4, January 2010
29. F.G. Woollard, *Principles of Mass and Flow Production*, Special 55<sup>th</sup> Anniversary Reprint Edition, with Bob Emiliani, ISBN 978-0-9722591-8-7, January 2009
30. *REAL LEAN: Learning the Craft of Lean Management*, Volume 4, ISBN 978-0-9722591-7-0, October 2008
31. *REAL LEAN: The Keys to Sustaining Lean Management*, Volume 3, ISBN 978-0-9722591-6-3, May 2008
32. *Practical Lean Leadership: A Strategic Leadership Guide for Executives*, ISBN 978-0-9722591-5-6, January 2008
33. *REAL LEAN: Critical Issues and Opportunities in Lean Management*, Volume 2, ISBN 978-0-9722591-4-9, July 2007
34. *Better Thinking, Better Results: Case Study and Analysis of an Enterprise-Wide Lean Transformation*, with D. Stec, L. Grasso, and J. Stodder, second edition, ISBN 978-0-9722591-2-5, March 2007
35. *REAL LEAN: Understanding the Lean Management System*, Volume 1, ISBN 978-0-9722591-1-8, January 2007
36. *Better Thinking, Better Results: Using the Power of Lean as Total Business Solution*, with D. Stec, L. Grasso, and J. Stodder, ISBN 0-9722591-0-4, January 2003. **Shingo Research Award, 2003** (out of print)

## BOOK CHAPTERS / FOREWORDS

1. Foreword to *Why Lean Transformation Fails: Common Challenges to Adopting New Leadership and Management Systems*, S. Leuschel, Align Kaizen, May 2019
2. “Ohno’s Insights on Human Nature” in *Taiichi Ohno’s Workplace Management: Special 100th Birthday Edition*, T. Ohno, translated by J. Miller, McGraw-Hill, New York, NY, 2012, pp. 157-162
3. “The Inevitability of Conflict Between Buyers and Sellers” in *Supply Chain Management: Critical Perspectives on Business and Management*, Steve New, Editor, Routledge, 2008
4. “Chapter 1 Point-Counterpoint: The Online Reverse Auction Controversy,” with T. Gattiker, in *Best Practices for Online Procurement Auctions*, D. Parente, Ed., Idea Group Inc., Hershey, PA, 2007,
5. “Supporting Small Businesses in Their Transition to Lean Production” in *Supply Chains and Total Product Systems: A Reader*, E. Rhodes, J. Warren, and R. Carter, Eds., Blackwell Publishing, 2006

## GOOGLE SCHOLAR CITATION IMPACT

Number of citations:	5120+
Number of publications, h, that have at least h citations (h-index):	36
Number of publications with at least ten citations (i10-index):	56



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## Journal Impact Factor (IF)

<i>Industrial Marketing Management</i>	IF 6.960	n = 3
<i>Supply Chain Management: An International Journal</i>	IF 4.725	n = 12
<i>International Journal of Lean Six Sigma</i>	IF 4.204	n = 1
<i>Management Decision</i>	IF 4.320	n = 7
<i>The TQM Journal</i>	IF 3.250	n = 1
<i>Leadership and Organizational Development Journal</i>	IF 3.242	n = 4
<i>Journal of Workplace Learning</i>	IF 1.580	n = 1
<i>Quality Assurance in Education</i>	IF 1.280	n = 3
<i>Journal of Management History</i>	IF 1.120	n = 3

## REFEREED PAPERS – Lean Leadership and Lean Management

1. “Engaging Faculty in Lean Teaching,” *International Journal of Lean Six Sigma*, Vol. 6, Issue 1, 2015  
<http://www.emeraldinsight.com/doi/full/10.1108/IJLSS-06-2014-0015>
2. “Music as a Framework to Better Understand Lean Leadership,” *Leadership and Organizational Development Journal*, Vol. 34, Issue 5, 2013, pp. 407-426.
3. “Frank George Woollard: Forgotten Pioneer of Flow Production,” with P.J. Seymour, *Journal of Management History*, Volume 17, Issue 1, 2011, pp. 66-87.
4. “Standardized Work for Executive Leadership,” *Leadership and Organizational Development Journal*, Vol. 29, No. 1, 2008, pp. 24-46.
5. “Improving Management Education,” *Quality Assurance in Education*, Vol. 14, No. 4, 2006, pp. 363-384.
6. “Origins of Lean Management in America: The Role of Connecticut Businesses,” *Journal of Management History*, Vol. 12, No. 2, 2006, pp. 167-184.
7. “Leaders Lost in Transformation,” with D.J. Stec, *Leadership and Organizational Development Journal*, Vol. 26, No. 5, 2005, pp. 370-387.
8. “Using Kaizen to Improve Graduate Business School Degree Programs,” *Quality Assurance in Education*, Vol. 13, No. 1, 2005, pp. 37-52. **Highly Commended Paper Award** from Emerald Publishing.
9. “Using Value Stream Maps to Improve Leadership,” with D.J. Stec, *Leadership and Organizational Development Journal*, Vol. 25, No. 8, 2004, pp. 622-645.
10. “Improving Business School Courses by Applying Lean Principles and Practices,” *Quality Assurance in Education*, Vol. 12, No. 4, 2004, pp. 175-187.
11. “Is Management Education Beneficial to Society?,” *Management Decision*, Vol. 42, No. 3/4, 2004, pp. 481-498.
12. “Linking Leaders’ Beliefs to Their Behaviors and Competencies,” *Management Decision*, Vol. 41, No. 9, 2003, pp. 893-910.
13. “A Mathematical Logic Approach to the Shareholder vs. Stakeholder Debate,” *Management Decision*, Vol. 39, No. 8, 2001, pp. 618-622.
14. “Redefining the Focus of Investment Analysts,” *The TQM Journal*, Vol. 13, No. 1, 2001, pp. 34-50.  
**Citation of Excellence Award** from *Emerald Management Reviews*.
15. “The False Promise of ‘What Gets Measured Gets Managed’,” *Management Decision*, Vol. 38, No. 9, 2000, pp. 612-615.
16. “The Oath of Management,” *Management Decision*, Vol. 38, No. 4, 2000, pp. 261-262.
17. “Cracking the Code of Business,” *Management Decision*, Vol. 38, No. 2, 2000, pp. 60-79. **Highly Commended Paper Award** from Emerald Publishing.
18. “Lean Behaviors,” *Management Decision*, Vol. 36, No. 9, 1998, pp. 615-631.

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19. **Outstanding Paper Award**, 1998 volume of *Management Decision*.
20. “Continuous Personal Improvement,” *Journal of Workplace Learning*, Vol. 10, No. 1, 1998, pp. 29-38.

## **REFEREED PAPERS – Supply Chain Management and B2B e-Commerce**

21. “Historical Lessons in Purchasing and Supplier Relationship Management,” *Journal of Management History*, Vol. 16, No. 1, 2010, pp. 116-136.
22. “Coercion and Reverse Auctions,” with C. Giampietro, *Supply Chain Management: An International Journal*, Vol. 12, No. 2, 2007, pp. 75-84.
23. “Executive Decision-Making Traps and B2B Online Reverse Auctions,” *Supply Chain Management: An International Journal*, Vol. 11, No. 1, 2006, pp. 6-9. **Highly Commended Paper Award.**
24. “Wood Pallet Suppliers’ Reaction to Online Reverse Auctions,” with D.J. Stec, *Supply Chain Management: An International Journal*, Vol. 10, No. 4, 2005, pp. 278-287.
25. “Unintended Responses to a Traditional Purchasing Performance Metric,” with D.J. Stec and L.P. Grasso, *Supply Chain Management: An International Journal*, Vol. 10, No. 3, 2005, pp. 150-156.
26. “Regulating B2B Online Reverse Auctions Through Voluntary Codes of Conduct,” *Industrial Marketing Management*, Vol. 34, No. 5, 2005, pp. 526-534.
27. “Commentary on ‘Reverse Auctions for Relationship Marketers’ by Daly and Nath,” with D.J. Stec, *Industrial Marketing Management*, Vol. 34, No. 2, 2005, pp. 167-171. **Invited paper.**
28. “Aerospace Parts Suppliers’ Reaction to Online Reverse Auctions,” with D.J. Stec, *Supply Chain Management: An International Journal*, Vol. 9, No. 2, 2004, pp. 139-153.
29. “Sourcing in the Global Aerospace Supply Chain Using Online Reverse Auctions,” *Industrial Marketing Management*, Vol. 33, No. 1, 2004, pp. 65-72. **Invited paper.**
30. “The Inevitability of Conflict Between Buyers and Sellers,” *Supply Chain Management: An International Journal*, Vol. 8, No. 2, 2003, pp. 107-115.
31. “Squaring Online Reverse Auctions with the Caux Round Table *Principles for Business*,” with D.J. Stec, *Supply Chain Management: An International Journal*, Vol. 7, No. 2, 2002, pp. 92-100.
32. “Realizing Savings from Online Reverse Auctions,” with D.J. Stec, *Supply Chain Management: An International Journal*, Vol. 7, No. 1, 2002, pp. 12-23.
33. “Online Reverse Auction Purchasing Contracts,” with D.J. Stec, *Supply Chain Management: An International Journal*, Vol. 6, No. 3, 2001, pp. 101-105.
34. “Business-to-Business Online Auctions: Key Issues for Purchasing Process Improvement,” *Supply Chain Management: An International Journal*, Vol. 5, No. 4, 2000, pp. 176-186.
35. “Supporting Small Businesses in their Transition to Lean Production,” *Supply Chain Management: An International Journal*, Vol. 5, No. 2, 2000, pp. 66-70.
36. “The Making of a Lean Aerospace Supply Chain,” *Supply Chain Management: An International Journal*, Vol. 4, No. 3, 1999, pp. 135-144.

## **REFEREED PAPERS – Materials Science and Engineering**

1. “Characterization and Oxidation Resistance of Hot-Pressed Chromium Diboride,” *Mat. Sci. Eng.* A172(1993)111.
2. “Fiber Coating Concepts for Brittle-Matrix Composites,” with J.B. Davis, J.P.A. Löfvander, A.G. Evans, E. Bischoff, *J. Amer. Ceram. Soc.* 76(1993)1249.
3. “Debond Coating Requirements for Brittle Matrix Composites,” *J. Mat. Sci.* 28(1993)5280. **Featured Paper.**



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4. “Assessment of Oxide Debond Coatings for Metal-Toughened Intermetallics,” with H.E. Dève, *J. Amer. Ceram. Soc.* 75(1992)1935.
5. “Characterization of Sputtered Inconel 617, Part 2: Coatings in Cross-Section,” with M. Richman, and R. Brown, *J. Mat. Sci.* 25(1990)144.
6. “Characterization of Sputtered Inconel 617, Part 1: Coatings in Plan Section,” with M. Richman, and R. Brown, *J. Mat. Sci.* 25(1990)137.
7. “Diffusion of Sputtered Inconel 617 Coatings in Titanium,” with M. Richman, and R. Brown, *Metall. Trans. A.* 21A(1990)1613.
8. “Ductile Reinforcement Toughening of  $\gamma$ -TiAl: Effects on Debond and Ductility,” with H.E. Dève, A.G. Evans, G.R. Odette, R. Mehrabian, and R.J. Hecht, *Acta metall. mater.* 38(1990)1491.
9. “Sputter-Coating of Ti-6Al-4V with Inconel 617 for Erosion Resistance,” with M. Richman, R. Brown, and O. Gregory, *Surf. Coatings Technol.* 33(1987)267.
10. “The Effect of Microstructure on Erosion of Ti-6Al-4V by Spherical Particles at 90° Impact Angles,” with R. Brown, *Wear* 94(1984)323.

## OTHER PUBLICATIONS

- “Transitioning Higher Education to Lean Management,” *Cost Management*, Jan/Feb 2021, pp. 10-15
- “Henry Gantt: Lean Before There Was Lean,” *Lean Management Journal*, Volume 4, Issue 7, September 2014, pp. 12-13.
- “Lean and the HMRC,” *Management Services*, Journal of the Institute of Management Services, Vol. 55, No. 4, Winter 2011, pp. 13-15. **Invited paper.**
- “The History of Flow,” with P. Seymour and P. Found, *Lean Management Journal*, September-October 2011, pp. 28-31.
- “Frank George Woollard: Flow Production Pioneer,” with P.J. Seymour, *Bullnose Morris Club Magazine*, No. 285, February/March 2011, pp. 34-37.
- U.S. Patent No. 5,415,748, “Process for the Electrophoretic Deposition of Defect-Free Metallic Oxide Coatings,” with J. Spence, 16 May 1995.

## Reports for Sponsored Research Projects

- “Fiber Coating by Sputtering for High Temperature Composites,” Final Report, FR No. 21538, AFOSR Contract Number F49620-89-C-0066, October 1992.
- “Chromium Diboride Monofilament Fiber Fabrication by Hollow Cathode Sputtering,” Final Report, NASA CR-187176, NASA Contract No. NAS3-25786, July 1991.
- Interim and Annual reports for “HSCT-Enabling Propulsion Materials – Task A: Combustor Liner Development,” Contract No. NAS3-26385, December 1991 to December 1993.

## Conference Publications

- “CrB<sub>2</sub> Fiber Fabrication by Hollow Cathode Sputtering,” NASA HITEMP Review, 30-31 October 1990, NASA Conference Publication No. 10051, pp. 12-1 to 12-15.
- “Erosion of Ti-6Al-4V by Spherical Silica Particles At 90° Impact Angles,” with R. Brown, Proc. 6th Int. Conf. on Erosion by Liquid and Solid Impact, Cambridge, UK, 5-8 September 1983. Paper #40.

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## Magazine Articles

1. "Bicycle Chains: Materials, Chain Wear, and Lubrication," *Bike Tech*, Spring 1986, pp. 5-10.
2. "American Framebuilders: A Status Report," *Bike Tech*, Fall 1985, pp. 9-13.
3. "Steel Frame Tubing: What Are the Differences?," *Bicycle Guide*, Issue 1, Autumn 1984, pp.83-88.
4. "Can Surface Finish Affect the Strength of Your Frame? Part III: Chrome Plating," *Bike Tech*, June 1984, pp. 10-16.
5. "Anodized Rims are More Rigid," *Bike Tech*, April 1984, p. 5.
6. "Can Surface Finish Affect the Strength of Your Frame? Particle Blasting, Part II," *Bike Tech*, February 1984, pp. 1-6.
7. "Can Surface Finish Affect the Performance of Your Frames?," *Bike Tech*, December 1983, pp. 5-9.
8. "Heat Treated Rims - Are They Worth The Money?," *Bike Tech*, October 1983, pp. 1-7.
9. "The Metallurgy of Brazing, Part 4," *Bike Tech*, April 1983, pp. 1-7.
10. "The Metallurgy of Brazing, Part 3," *Bike Tech*, December 1982, pp. 6-11.
11. "The Metallurgy of Brazing, Part 2," *Bike Tech*, October 1982, pp. 3-7.
12. "The Metallurgy of Brazing, Part 1," *Bike Tech*, August 1982, pp. 1-4.
13. "Straight Talk on Steel," *Bicycling Magazine*, July 1982, pp. 96-123.
14. "On Some Much-Misused Terminology," *Bike Tech*, June 1982, pp. 9-11.
15. "Silver versus Brass Brazing," *Bike Tech*, Pilot Issue, February 1982, pp. 9-11.
16. "Reynolds versus Columbus versus the Framebuilder's Torch," *Bicycling Magazine*, October 1981, pp. 92-97.

## **SPONSORED RESEARCH IN MATERIALS ENGINEERING**

NASA: "HSCT-Enabling Propulsion Materials – Task A: Combustor Liner Development," Contract No. NAS3-26385, December 1991 to December 1997, \$5,000,000 annual budget (approx.)

NASA: "Chromium Diboride Monofilament Fiber Fabrication by Hollow Cathode Sputtering," Contract No. NAS3-25786, March 1990 to July 1991, \$146,000

DARPA/AFOSR: "Fiber Coating by Sputtering for High Temperature Composites," Contract No. F49620-89-C-0066, May 1989 to August 1992, \$584,000

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