



M.L. “Bob” Emiliani

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 23 books and 45 peer-reviewed papers on leadership and related topics
- Creator of the “Lean Teaching” pedagogy, 1999-present
- 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-present
 - 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 Chibiro 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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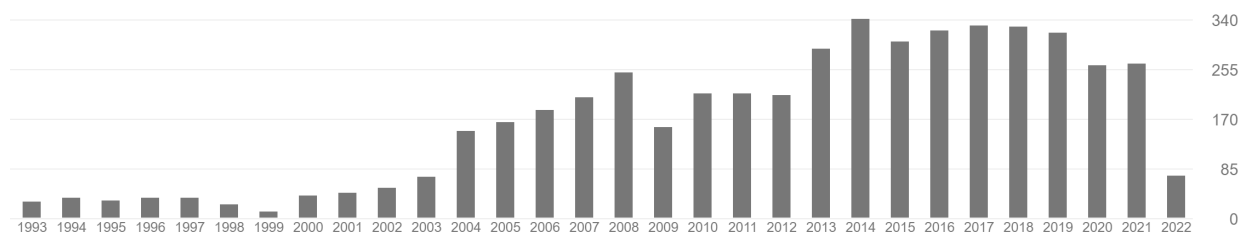
24. *We Can Do It!: Improving the Relevancy and Value of Higher Education Using Lean Management*, ISBN 978-0-9845400-3-7 (e-book), February 2012 (out of print)
25. *Kaizen Heart and Mind: A Collection of Insightful Essays on Lean Leadership*, (Volume 1), ISBN 978-0-9845400-2-0 (e-book), December 2011 (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 55th 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 γ -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

- “CrB₂ 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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