

# CURRICULUM VITAE FOR DR. MICHAEL J. READEY

## PERSONAL INFORMATION:

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## PROFESSIONAL SUMMARY & CURRENT CAREER OBJECTIVES

I have demonstrated expertise and leadership in technology development, program management, business creation and university-level education. I have taken initiatives from early stage R&D and transformed them into profitable business ventures, navigating complex organizational, technical and regulatory issues along the way. My current career objective is to leverage my knowledge to mentor the next generation of leaders to learn and create innovative, sustainable and socially responsible opportunities that solve global challenges in today's rapidly growing world.

## EDUCATION

- Ph.D., Materials Science and Engineering, Case Western Reserve University, Cleveland, Ohio (1988)  
*Thesis: R-Curve Behavior in Transformation-Toughened Zirconia*
- Guest Scientist, Universität Dortmund, Germany (1986-87)
- M.S., Ceramic Engineering, Ohio State University, Columbus, Ohio (1984)  
*Thesis: Vapor Transport in Ceramic Processing*
- B.S., Ceramic Engineering, Ohio State University, Columbus, Ohio (1982)

## PERSONAL SKILLS & COMPETENCIES

- ✓ *Highly Ranked Teaching and Research skills in Academic and Industrial Settings*
- ✓ *In-Depth Technical Expertise in Advanced Materials, Energy Systems & Sustainable Product Design*
- ✓ *Creation & Execution of Complex, Interdisciplinary RD&E Programs (\$20 Million Per Year)*
- ✓ *Development & Launch of Advanced Technology & Sustainability-focused Products & Services*
- ✓ *Leadership of Large Organizations (130 Technical and Non-Technical Personnel)*
- ✓ *Effective Communication skills from the Classroom to the Board Room*
- ✓ *Establishing robust Partnerships among Industry, Academia, NGO & Governmental Communities*
- ✓ *Fluent in English, Basic skills (A1) in German and French (reading, writing, verbal)*

## PROFESSIONAL EXPERIENCE

### UNIVERSITY OF COLORADO BOULDER, Boulder, Colorado USA (2016-present)

*Professor of Engineering Practice, Engineering Management Program, College of Engineering*

- Currently leading the program's graduate efforts, with a focus on Innovation & Commercialization.
- Teaching graduate and undergraduate courses in Innovation, Intrapreneurship, Product Development and Finance to a wide range of engineering disciplines (see details below).
- Received one of the highest student ratings in the program faculty for excellence in teaching.

### Courses Taught to Date: (note these are all targeting students in a variety of engineering disciplines)

*Engineering Economics (EMEN 4100)*: undergraduate course in finance, covering cost estimation, time value of money, financial analysis (NPV, IRR), replacement analysis, and risk management.

*Entrepreneurial Product Design (EMEN 4820)*: undergraduate course covering product development, user-

centered design, digital and physical product prototyping, packaging, sustainability and economic analysis. *Finance & Accounting for Engineering Managers (EMEN 5020)*: graduate course covering financial statements, decision-making for profitability, annuities and time value of money, personal financial management, capital budgeting and financial forecasting.

*Entrepreneurship for Engineers (EMEN 5094)*: graduate course covering the entrepreneurial mindset, socially responsible ventures, business ideation techniques, business models, business pitches and plans, approaches to funding, organizational structures, founding teams, intellectual property and business valuation techniques.

*Product Development & Design (EMEN 5400)*: graduate course covering product development processes, design thinking, defining functional and engineering specifications, lean product development, digital and physical product prototyping, and sustainability (Life Cycle Analysis, Cradle-to-Cradle).

*Innovation & Intrapreneurship (EMEN 5825)*: graduate course covering models of innovation, technology diffusion and market adoption, technology road-mapping and forecasting techniques, leading R&D teams, market analysis, pricing, product management, value chain analysis, creating a compelling business case.

#### New Courses Developed and Taught in 2019

*Principles & Practices of the Sustainable Enterprise (EMEN 5215)*: graduate course providing students the tools to integrate sustainability into technology-intensive businesses. The course explores the sustainability imperative for today's businesses, and how sustainability is requiring engineers to have a deeper knowledge of how successful market solutions also impact society and the environment. The course addresses the engineer's role in developing sustainable products and packaging, the triple bottom line and circular economy.

*Product Liability, Engineering & The Litigation Process (EMEN 5316)*: a joint CEAS-Law School course developed to bring together engineering students and law students to understand the legal ramifications of a catastrophic product failure. The course provides engineering students a realistic experience of working through a product failure and subsequent legal case, from the very beginning of the failure analysis investigation to a mock trial where engineers are "on the stand" being interrogated by their legal counterparts.

**MV TECHNOLOGIES, Golden, Colorado (2014-2016)**. MV develops biogas conditioning systems enabling the production renewable energy and renewable natural gas (RNG) for green vehicle fuel.

*President, Chief Technical Officer*

- Initially hired to lead technical and business development of biogas absorbent business.
- Promoted to President in 2015. Led MV back to profitability and established a new product line through cooperative agreement with a major European Chemical company.

**AERINOX INC, Boulder Colorado (2010-2014)**. A German-Canadian JV supplying emission control systems to the North American power generation and gas compression markets.

*President & CEO*

- Launched the business for the JV partners in 2011, overseeing financial and legal administrative functions, leading all sales and marketing efforts, and developing a post-sale support strategy.
- Established credibility with customers through in-depth workshops on the role of catalytic emission control systems on complying with federal emission regulations, and sustainability initiatives.
- Drove sales to more than \$2.5million in first 30 months of operation.

**CATERPILLAR, INC., Peoria, Illinois (1996-2009)**. \$50B global manufacturing company, with products in earth moving equipment, diesel and natural gas engines, and electric power.

*Product Director, Emissions Solutions, Marketing and Product Support Division (2007-2009)*

- Defined near-term and long-term strategies for CAT's emissions products aftermarket, involving technology forecasting, assessing customer and business unit demands, evaluating and selecting strategic suppliers, and overall financial business model analysis.
- Led team of 24 engineers and marketing experts, resulting in 100% increase in sales of new products.

*Product Director, Engine Systems, Large Power Systems Division (2005-2007)*

- Led a highly select staff of product development engineers and R&D technologists that defined the next generation power system for the CAT's global engine markets.
- This program involved developing technology options, integrating multiple R&D programs, forecasting product costs, understanding regulatory compliance requirements then optimizing these factors to match customer and business requirements.
- The program launched the largest product development effort in the company's history (>\$2B), establishing CAT's entire engine and machine product strategy for the next decade.

*Manager, Environmental Technologies, Large Power Systems Division (2002-2005)*

- Championed a strategic, \$2B/yr growth initiative resulting in the formation of a new business for all technical and commercial aspects of diesel and natural gas engine emission control systems.
- Defined the customer value proposition, assessed the regulatory environment, identified market demand, technology and engineering options, manufacturing strategies and supplier alliances.
- Developed support through a comprehensive business analysis that was reviewed by the Executive Office and Board of Directors, and was enthusiastically approved as a major growth initiative.

*Division Manager, Advanced Materials Technology Division, Technical Center (1999-2002)*

- Managed 130 professional scientists, engineers, and technicians with an annual budget exceeding \$20M in the area of materials R&D, manufacturing and engineering.
- Created a team to scale thin film coating R&D process to high-volume manufacturing operation.

*Program Manager, High-Temperature Materials & Catalysts, Advanced Materials Division (1996-1999)*

- Managed staff of 25 engineers and scientists with \$6M budget in the areas of ceramics, coatings, environmental catalysts and computer simulation of metal processes.
- Increased funding 50% from business units and through successful DOE and NIST programs.

**SANDIA NATIONAL LABORATORIES, Albuquerque, New Mexico (1993-1996)**

*Senior Member, Technical Staff, Glass and Electronic Ceramics Section*

- Conducted failure analysis and reliability modeling of ceramic components in energy applications.
- Worked in a multidisciplinary team to develop characterization techniques for optimizing ceramic manufacturing processes. Customers reported over significant cost savings using these models, combined with more rapid product development times.

**CARNEGIE MELLON UNIVERSITY, Pittsburgh, Pennsylvania (1990-1993)**

*Assistant Professor, Department of Materials Science and Engineering*

- Successfully acquired more than \$600,000 in external funds for research in ceramic science.
- Ranked as one of the top 5 educators in the Engineering College, and top 10 in all of CMU.

**COORS CERAMICS COMPANY, Golden, Colorado (1987-1990).**

*Director, Structural Ceramics R&D (1989-1990)*

- Managed staff of 20 engineers and technicians, a budget exceeding \$2 Million.
- Implemented new statistical optimization methodologies that led to improved yields by 50%, reducing manufacturing costs 40%, becoming the most profitable product line at Coors.

*Principal Engineer, Materials and Process R&D (1987-1989)*

- Developed material and process for new medical products, adding \$2 million in revenue.
- Project Leader of approximately 30 people on \$1 million+ new product development program, resulting in successful manufacture of lightweight thermal insulator device.

## **SERVICE & PROFESSIONAL DEVELOPMENT**

- ✓ Academic Advisor, University of Colorado, Colorado Ocean Coalition Club (2019 – present)
- ✓ Mentor, University of Connecticut School of Business, MBA Program (2015)
- ✓ Colorado Clean-Tech Industries Association, Energy Fellows Institute Program (2015).
- ✓ Univ. of Chicago Executive Management Program, “Strategic Marketing Management” (2008).
- ✓ Massachusetts Inst. of Tech. Sloan School of Business, “Finance for the Executive” (2002).
- ✓ Northwestern Univ. Kellogg School of Business, “Business for the Technical Executive”, (2001).

## **PUBLICATIONS and PRESENTATIONS**

Author and co-author of more than 40 published scientific papers (see attached list). Editor/Reviewer of two conference proceedings publications. Delivered more than 250 technical presentations in the areas of materials processing, properties and applications, environmental technologies, renewable energy, and corporate sustainability. Invited speaker at over 100 professional meetings throughout the world.

## **PERSONAL BACKGROUND**

Married to a wonderfully creative woman and fortunate father of two adult daughters. Interests include bicycling, gardening, and all things related to sustainability. Currently residing in Boulder, Colorado.

## **REFERENCES**

Available upon request.

## PUBLICATION LIST\*

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15. M.J. Readey, "Microstructure and Reliability of Ceramics", Final technical report, AFOSR-TR-96-0091 Jan 96, 191p.
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28. M.J. Readey, "Process-tolerant manufacturing: An optimization strategy for processing advanced ceramics", Proceedings of the International Symposium on Developments and Applications of Ceramics and New Metal Alloys, Aug 29-Sep 2 1993, Quebec City, Quebec, Canada, p 347-355 Published by Canadian Institute of Mining, Metallurgy and Petroleum, Montreal, Quebec, Canada.
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