

Matthew F. Baretich

Curriculum Vitae

Contact Information

Baretich Engineering, Inc.
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Education

- Ph.D., Hospital and Health Administration.
The University of Iowa, 1986.
Dissertation: *Managing Technology: An Empirical Investigation of Clinical Engineering Effectiveness*.
First Annual Richard Covert Scholarship, Hospital Information and Management Systems Society.
- M.S., Biomedical Engineering.
Iowa State University, 1977.
Thesis: *Projects in Clinical Engineering*.
- B.S., Electrical Engineering.
Iowa State University, 1975.
Graduation with Distinction.

Credentials

- Professional Engineer (P.Eng.), British Columbia.
Engineers & Geoscientists British Columbia, 2021.
- Certified Professional in Patient Safety (CPPS).
Certification Board for Professionals in Patient Safety, 2015.
- Certified Professional in Healthcare Risk Management (CPHRM).
American Hospital Association Certification Center, 2009.
- Certified Clinical Engineer (CCE).
Healthcare Technology Certification Commission, ACCE Healthcare Technology Foundation, 2004.
- Certified Healthcare Facility Manager (CHFM).
American Hospital Association Certification Center, 2000.
- Professional Engineer (P.E.), Colorado.
State Board of Registration for Professional Engineers and Professional Land Surveyors, 1987.
- Certified Clinical Engineer (CCE).
Healthcare Technology Certification Commission, 1980.

Employment

- 2021 – Lower Mainland Biomedical Engineering:
Direct, Biomedical Engineering
- 2021 – 2023 Vancouver Coastal Health, Vancouver BC:
Director, Biomedical Engineering
- 1997 – Baretich Engineering, Inc., Fort Collins CO:
President.

- 1992 – 1997 University of Colorado Hospital, Denver CO:
Manager (1992-1995), Director (1995-1997).
- 1987 – 1992 University of Colorado Health Sciences Center, Denver CO:
Director, Bioengineering.
- 1986 - 1987 Center for Health Services Research, University of Iowa, Iowa City IA:
Research Associate.
- 1982 – 1986 Graduate Program in Hospital and Health Administration, University of Iowa, Iowa City IA:
Research Assistant (1982-1985), Faculty Associate (1985-1986).
- 1979 – 1982 Children’s Hospital of the King’s Daughters, Norfolk VA:
Director, Clinical Engineering.
- 1977 – 1979 Eastern Virginia Medical Authority, Norfolk VA:
Director, Bioengineering Laboratory.

Recognition

- ACCE Clinical Engineering Hall of Fame.
American College of Clinical Engineering, 2022.
- ACCE Lifetime Achievement Award.
American College of Clinical Engineering, 2019.
- AAMI Fellow (AAMIF).
Association for the Advancement of Medical Instrumentation, 2017.
- AAMI HTM Leadership Award.
Association for the Advancement of Medical Instrumentation, 2017.
- Associate Member of the National Academy of Forensic Engineers.
National Academy of Forensic Engineers, 2015.
- Fellow of the American Institute of Medical and Biological Engineering (FAIMBE).
American Institute of Medical and Biological Engineering, 2012.
- ACCE/AHTF Marvin D. Shepherd Patient Safety Award.
American College of Clinical Engineering, 2008.
- Fellow of the American Society for Healthcare Engineering (FASHE).
American Society for Healthcare Engineering, 2007.
- ACCE Professional Development Award.
American College of Clinical Engineering, 2006.
- ASHE Regional Leader Award.
American Society for Healthcare Engineering, 2006.
- Fellow of the American College of Clinical Engineering (FACCE).
American College of Clinical Engineering, 2003.

Current Professional Activities

- AAMI Standards Committee EQ-WG04 Alternative Equipment Maintenance.
Member of the AEM Working Group.
- ACCE Clinical Engineering Hall of Fame Committee.
Member.

- British Columbia College of Oral Health Professionals.
Member of the Sedation and General Anesthesia committee.
- *Global Clinical Engineering Journal*.
Member of the Editorial Review Board.
- *NAFE Journal* (National Academy of Forensic Engineers).
Member of the Editorial Review Board.
- *24x7 Magazine*.
Member of the Editorial Review Board.
- American Society for Healthcare Engineering.
Member of the Editorial Review Board.

Publications: Books, Book Sections, and Monographs

- 2022 *Optimizing the CMMS Work Order Type Field*.
AAMI White Paper (with Davis-Smith).
- 2021 *HTM Levels Guide* (3rd edition).
Guideline (with others) published by AAMI.
- 2020 *Optimizing the CMMS Failure Code Field*.
AAMI White Paper (with Davis-Smith).
- 2020 *Medical Equipment Servicing Guide: Managing Compliance, Quality, and Cost*.
Guideline published by AAMI.
- 2020 Computerized maintenance management systems.
Chapter 34 (with others) in *Clinical Engineering Handbook* (2nd edition), Elsevier.
- 2020 Hospital safety programs.
Chapter 52 in *Clinical Engineering Handbook* (2nd edition), Elsevier.
- 2020 American College of Clinical Engineering.
Chapter 58 (with others) in *Clinical Engineering Handbook* (2nd edition), Elsevier.
- 2020 Electrical power.
Chapter 92 in *Clinical Engineering Handbook* (2nd edition), Elsevier.
- 2020 Construction and renovation.
Chapter 94 in *Clinical Engineering Handbook* (2nd edition), Elsevier.
- 2018 *AEM Program Guide: Alternative PM for Patient Safety*.
Guideline published by AAMI.
- 2017 *Computerized Maintenance Management Systems for Healthcare Technology Management* (3rd ed.).
Book (with Cohen) published by AAMI.
- 2016 *HTM Levels Guide* (2nd edition).
Guideline (with others) published by AAMI.
- 2016 *HTM Benchmarking Guide*.
Guideline (with others) published by AAMI.
- 2015 *Electrical Safety Manual* (2015 edition).
Book published by AAMI.
- 2015 Healthcare Facility Management.
Chapter in *A Practicum for Healthcare Technology Management* published by AAMI.

- 2014 *HTM Levels Guide*.
Guideline (with others) published by AAMI.
- 2011 *Medical Equipment Maintenance Programme Overview*.
Manual (with Painter) in the WHO Medical Device Technical Series (World Health Organization).
- 2008 *Electrical Safety Manual* (2008 edition).
Book (with Shepherd) published by AAMI.
- 2008 Healthcare Facility Management.
Chapter in *A Practicum for Biomedical Technology Management* published by Kendall/Hunt.
- 2008 HIPAA Medical Device Security (with Grimes).
Chapter in *A Practicum for Biomedical Technology Management* published by Kendall/Hunt.
- 2004 Construction and Renovation.
Article in the *Clinical Engineering Handbook* published by Elsevier Academic Press.
- 2004 Electrical Power.
Article in the *Clinical Engineering Handbook* published by Elsevier Academic Press.
- 2004 *Electrical Safety Manual* (2004 edition).
Book (with Shepherd) published by the Association for the Advancement of Medical Instrumentation.
- 2004 Equipment Control and Asset Management.
Article in the *Clinical Engineering Handbook* published by Elsevier Academic Press.
- 2004 Hospital Safety Programs.
Article in *The Handbook of Clinical Engineering* published by Elsevier Academic Press.
- 2004 Patient Safety and Facility Management: The Role of Healthcare Facility Engineers.
Monograph in the ASHE Management Monograph Series.
- 2003 Advanced Clinical Engineering Workshop Syllabus (editor, with others).
Manual developed for the World Health Organization.
- 2003 *Medical Device Incident Investigation & Reporting*.
Book (with Shepherd) published since 2003 by Baretich Engineering, Inc.
- 2001 Enhancing Patient Safety: The Role of Clinical Engineering (editor, uncredited).
ACCE White Paper published by the American College of Clinical Engineering.
- 2001 Revised JCAHO Environment of Care Standards for 2001.
Monograph in the ASHE Healthcare Facilities Management Series.
- 1997 Hospital Information Systems.
Article in *The Electrical Engineering Handbook* (2nd edition) published by CRC Press.
- 1993 Hospital Information Systems.
Article in *The Electrical Engineering Handbook* (1st edition) published by CRC Press.
- 1993 *Guideline for Establishing and Administering Medical Instrumentation Maintenance Programs*.
Monograph (with Fennigkoh) published by AAMI.
- 1992 Safety in the Clinical Environment.
Chapter (with Bronzino) in *Management of Medical Technology* published by Butterworth-Heinemann.
- 1987 *Clinical Engineering Effectiveness from the Hospital Administrator's Perspective*.
Monograph in the ASHE Technical Document Series.
- 1985 *The Use of Clinical Engineers and Biomedical Equipment Technicians in Iowa Hospitals*.
Monograph in the IHERF Research Monograph Series.

Publications: Journal Articles

- 2018 A Rational Approach to Efficient Equipment Maintenance, Part 2: A Comprehensive AEM Program. *Biomedical Instrumentation & Technology* 52(5):350-356.
- 2018 A Rational Approach to Efficient Equipment Maintenance, Part 1: A Simple, Basic AEM Program. *Biomedical Instrumentation & Technology* 52(4):272-280.
- 2017 CMMS Data Integrity (with Cohen). *24x7 Magazine* 22(7);28-30 November.
- 2017 How to Meet CMS and TJC Power Strip Requirements. *AAMI News* 52(11):15.
- 2017 Seize the Day with New Joint Commission Requirements. *AAMI News* 52(3):15.
- 2016 Risk Assessment for a Healthcare System's Clinical Technology Services Program. *Biomedical Sciences Instrumentation* 52.
- 2016 How to Write a Medical Equipment Management Plan. *24x7 Magazine* 21(3):30-34.
- 2015 Assessing Risk in the Kaiser Permanente Clinical Technology Program (with others). *Biomedical Instrumentation & Technology Horizons* (Spring 2015):138.
- 2015 Managing Medical Device Incident Investigations. *Biomedical Sciences Instrumentation* 51:260-265.
- 2013 The CMS Directive: Is There Really a Silver Lining? (with others). *24x7 Magazine* 18(4):46.
- 2012 The New NFPA 99. *24x7 Magazine* 17(3):10-13.
- 2012 The Value of Certification. *Biomedical Instrumentation & Technology* 46(1):68-71.
- 2011 How to Use Financial Benchmarks. *Biomedical Instrumentation & Technology* 45(5):405-407.
- 2010 Clinical Engineering and the World Health Organization. *Biomedical Sciences Instrumentation* 46:68-71.
- 2010 National Quality Forum Releases Recommendations for Safe Practices. *Biomedical Instrumentation & Technology* 44(4):334-335.
- 2009 Excellence in Clinical Engineering Leadership and the Inaugural AHTF ExCEL Award (with others). *Journal of Clinical Engineering* 33(4):201-205.
- 2009 Focus On: The 2009 JC Standards. *24x7 Magazine* 14(4):36.
- 2008 Clinical Engineering Workshops in Latin America. *Biomedical Sciences Instrumentation* 44:59-62.
- 2008 Healthcare facility management in the United States. *Revista Ingeniería Biomédica* (Colombia) 2(4):84-91.
- 2008 The "Other" Environment of Care Management Plans. *Biomedical Instrumentation & Technology* 42(3):222-224.
- 2007 Impact of Clinical Alarms on Patient Safety (with others). *Journal of Clinical Engineering* 32(1):22-33.

- 2007 Medical Device Incident Investigation.
Biomedical Sciences Instrumentation 43:302-305.
- 2007 The Isolated Power Systems Debate.
24x7 Magazine 12(12):29-30,35-38.
- 2005 Six Things We Can Do About Medical Device User Error.
24x7 Magazine 10(6):27-30.
- 2005 Think Outside the Basement.
Biomedical Instrumentation & Technology 39(1):4.
- 2004 Identification of Human Errors During Device-Related Accident Investigations (with others).
IEEE Engineering in Medicine & Biology Magazine 23(3):66-72.
- 2004 Meeting the Challenge of Sentinel Events.
24x7 Magazine 9(3):22-26.
- 2003 JCAHO and You: The Performance Improvement Cycle.
24x7 Magazine 8(11):40.
- 2002 JCAHO Patient Safety Standards and the Environment of Care
New Perspectives on Healthcare Auditing 21(2):21.
- 2002 Medical Technology Management in U.S. Hospitals.
Biomedical Sciences Instrumentation 38:273-275.
- 1994 Equipment Organization in the Emergency Department Adult Resuscitation Area (with others).
The Journal of Emergency Medicine 12(6):845-848.
- 1988 Clinical Engineering Effectiveness.
Biomedical Technology Today 3(3):79-82.
- 1988 Health Leaders of Tomorrow: A Descriptive Analysis (with Levey, Lane, and Levey).
Journal of Health Administration Education 7(2):244-273.
- 1987 Factors Affecting the Incidence of Patient Falls in Hospitals (with Raz).
Medical Care 25(3):185-195.
- 1985 ARMIS: A Microcomputer-based Hospital Risk Management Information System (with Raz).
Journal of Medical Systems 9(5/6):315-324.
- 1985 On Adopting a Managerial Perspective in Clinical Engineering Practice.
IEEE Engineering in Medicine and Biology Magazine 4(2):27-28.
- 1979 A Simple Tester for Respiration Rate Meters.
Journal of Clinical Engineering 4(4):339-340.
- 1978 Sources of Clinical Engineering Employment Information (with Craft).
Journal of Clinical Engineering 3(2):183-185.
- 1967 Automatic Pickle-Picker-Outer.
Treasure Chest Magazine (January 12).

Publications: Reviews

- 2017 Review of: Healthcare Technology Management: A Systematic Approach (CRC Press, 2017).
Biomedical Instrumentation & Technology 51(2):169.
- 2016 Review of: Usability Testing of Medical Devices, 2nd edition (CRC Press, 2016).
Biomedical Instrumentation & Technology 50(5):385.
- 2016 Review of: Medical Instruments and Devices: Principles and Practices (CRC Press, 2016).
Biomedical Instrumentation & Technology 50(1):76.

- 2014 Review of: Health Care Engineering – Part I and Part II (Morgan & Claypool, 2013). *Biomedical Instrumentation & Technology* 48(2):138.
- 2011 Review of: Biomedical Device Technology: Principles and Design (Charles C. Thomas, 2008). *Biomedical Instrumentation & Technology* 45(4):324.
- 2010 Review of: Biomedical Engineering for Global Health (Cambridge University Press, 2010). *Biomedical Instrumentation & Technology* 44(3):198.
- 2009 Review of: *Environment of Care Essentials Ninth Edition* (Joint Commission, 2009). *Biomedical Instrumentation & Technology* 43(6):444.
- 2005 Review (with Shepherd) of: *Using Human Factors to Improve Patient Safety* (JCAHO, 2005). *Biomedical Instrumentation & Technology* 39(6):439-440.
- 1991 Review of: *The Atheist and the Holy City: Encounters and Reflections* (MIT Press, 1990). *IEEE Engineering in Medicine and Biology Magazine* 10(2):65.
- 1989 Review of: *Unexplained Patient Burns: Investigating Iatrogenic Injuries* (Quest Publishing Company, 1988). *IEEE Engineering in Medicine and Biology Magazine* 8(3):54.
- 1987 Review (with Raz) of: *Hospital Information Systems for Case Mix Management* (John Wiley & Sons, 1986). *Journal of Health Administration Education* 5:647.
- 1984 Review (with Levey) of: *Health Care Policy in America* (Annals of the American Academy of Political and Social Science, Volume 468). *Journal of Health Administration Education* 2:248-249.
- 1983 Review (with Ludke) of: *Hospital Management Engineering* (Prentice Hall, 1982). *Inquiry* 20:94-95.
- 1983 Review of: *By Design: Why There Are No Locks on the Bathroom Doors in the Hotel Louis XIV and Other Object Lessons* (St. Martin's Press, 1982). *IEEE Spectrum* 20(10):14.

Presentations: Lectures and Webinars for Professionals (Since 2010)

- 2024 AEM Program Update: What the heck is going on?
CABMET Symposium (Denver CO, Colorado Association of Biomedical Equipment Technicians).
- 2024 HTM in Canada and the United States: Similar but interestingly different.
CABMET Symposium (Denver CO, Colorado Association of Biomedical Equipment Technicians).
- 2024 HTM Standards 101: what are they and why should I care? (with Davis-Smith).
MD Expo (Las Vegas NV), MD Publishing.
- 2023 Incident Investigation Best Practices.
ACCE 2023-2024 Education Webinar Series (online), American College of Clinical Engineering.
- 2023 Risk Management for Medical Technology in Home Healthcare (with others).
GCEA Webinar, Global Clinical Engineering Alliance.
- 2023 Adopting the AAMI Failure Code White Paper (with Davis-Smith).
AAMI eXchange (Long Beach CA).
- 2023 Incident Investigation Workshop.
CMBEC45. Canadian Medical and Biological Engineering Society Conference (Vancouver BC).
- 2023 Keynote Address: Forty-Five Years as a Clinical Engineer and Just Getting Started.
CMBEC45 Canadian Medical and Biological Engineering Society Conference (Vancouver BC).
- 2023 Adopting the AAMI *Failure Code* White Paper (with Davis-Smith).
AAMI HTMLive! (online).
- 2023 How to Manage Medical Device Incidents.
Global Clinical Engineering Alliance: GCEA Talks Series (online).

- 2023 Incident Investigation Workshop (half-day short course).
Piedmont Healthcare, Atlanta, Ga.
- 2023 Clinical Engineering Opportunities and Challenges in Home Health Care (with others).
Clinical Engineering Society of Ontario: CESO Conference 2023 (online).
- 2022 Risk and Liability in HTM (with Davis-Smith).
Washington State Biomedical Association (online).
- 2021 HTM Levels Guide: A Program-planning Tool for HTM Departments (with others).
AAMI HTMLive! (online).
- 2021 Leveraging Standardized CMMS Data for Smarter HTM Decisions (with Davis-Smith).
ACCE 2020-2021 Complimentary Webinar Series (online).
- 2021 Preventive Maintenance Programs: Canada, US, International Perspectives (with others).
CMBES Conference: CMBEC44 (online).
- 2021 Using Standardized CMMS Data for Smarter HTM Decisions: Work Order Types (with others).
HTM Mixer (Kansas City).
- 2021 Work Orderology (with Scott).
CABMET Symposium (Denver CO).
- 2020 Approaches to Preventive Maintenance: Canada, US, and International (with others).
ACCE 2020-2021 Educational Webinar Series.
- 2020 Don't Take Risks with Medical Device Risk Scoring (with Davis-Smith).
Nuvolo and TechNation.
- 2020 Getting the CMMS to Work for Us: Optimizing Failure Codes (with Davis-Smith).
AAMI: HTMLive!
- 2020 Using Standardized CMMS Data to Make Smarter HTM Decisions (with Davis-Smith).
HTM Mixer (Denver).
- 2020 How Modern CMMS Technology Can Improve your AEM Program (with Collins).
Association for the Advancement of Medical Instrumentation: Summer Learning Series.
- 2020 Getting the CMMS to work for us: Optimizing the *Failure Code* field.
Association for the Advancement of Medical Instrumentation: HTMLive.
- 2020 Don't Take Risks With Medical Device Risk Scoring (with Davis-Smith).
TechNation and Nuvolo: Webinar Wednesday.
- 2020 Translating the CMS CODID-19 Emergency Declaration Waiter for HTM Leaders (with Painter).
PartsSource.
- 2019 Establishing an Automated, Compliant AEM Program with Modern CMMS Technology (with others).
TechNation and Nuvolo: Webinar Wednesday.
- 2018 CMMS "How To" Series.
Association for the Advancement of Medical Instrumentation (six webinars).
- 2018 Your AEM Program: Patient Safety, Standards Compliance, and Less PM! (with Painter)
Association for the Advancement of Medical Instrumentation.
- 2010 Benchmarking, Best Practices, and CE Performance Data (with Painter).
ACCE Educational Teleconference Series.
- 2019 AEM Program Update (with Thukral).
NESCE Northeastern Healthcare Technology Symposium, Framingham MA
- 2019 Leveraging the HTM Community to Advance your AEM Program.
PartsSource Leadership Summit, Cleveland OH.

- 2019 Your AEM Program: Patient Safety, Standards Compliance, and Less PM. MDExpo, Houston TX.
- 2019 Writing the HTM Service Guide. CABMET Symposium, Aurora CO.
- 2018 Your AEM Program: Patient Safety, Standards Compliance, and Less PM. Healthcare Technology Management Association Midwest, Kansas City MO.
- 2018 Your AEM Program: Patient Safety, Standards Compliance, and Less PM. Northeastern Healthcare Technology Symposium.
- 2018 Your AEM Program: Patient Safety, Standards Compliance, and Less PM. CABMET Symposium, Aurora CO.
- 2018 Your AEM Program: Patient Safety, Standards Compliance, and Less PM. PartsSource Leadership Summit, Cleveland OH.
- 2017 Planning a Computerized Maintenance Management System (CMMS) for a Hospital System. Rocky Mountain Bioengineering Symposium, Aurora CO.
- 2017 Cost of Service Ratio (COSR) and other HTM Performance Metrics. Northeastern Healthcare Technology Symposium, Groton CT.
- 2017 Risk Assessment for Medical Equipment in a Shared Services Program (with others). Rocky Mountain Bioengineering Symposium, Aurora CO.
- 2017 HTM Task Force Update on Benchmarking. AAMI Conference & Expo, Austin TX.
- 2017 What the heck are those people thinking! CABMET Symposium (Colorado Association of Biomedical Equipment Technicians), Aurora CO.
- 2017 How to choose a new CMMS. CABMET Symposium (Colorado Association of Biomedical Equipment Technicians), Aurora CO.
- 2016 What the heck are those people thinking! (keynote address). Healthcare Technology Management Association of South Carolina, Columbia SC.
- 2016 AAMI Benchmarking: What do multi-hospital HTM programs need? (with others). AAMI 2016 Conference & Expo, Tampa FL.
- 2016 Risk Assessment for Isolated Power Systems. CABMET Symposium. Colorado Association of Biomedical Equipment Technicians, Aurora CO.
- 2016 The Curious History of Electrical Safety Testing. Clinical Technology Services (Northern California), Kaiser Permanente, Oakland CA.
- 2016 How to become a consultant and have fun doing it (keynote address). 53rd Annual Rocky Mountain Bioengineering Symposium, Denver CO.
- 2015 Alternative Equipment Maintenance Programs. CABMET Symposium. Colorado Association of Biomedical Equipment Technicians, Aurora CO.
- 2015 RPTs: CMS, TJC, and the Eclipse of Clinical Engineering. New England Society of Clinical Engineering, New London CT.
- 2015 Risk Assessment of Kaiser Permanente's Clinical Technology Program (with others). AAMI 2015 Conference & Expo, Denver CO.
- 2015 AAMI's HTM Benchmarking: Learn What's New and How to Strengthen Your CE Program (with others). AAMI 2015 Conference & Expo, Denver CO.
- 2015 Benchmarking Solutions – Healthcare Technology Management. Clinical Engineering Society of Ontario, Toronto ON.

- 2015 Managing Medical Device Incident Investigations.
53rd Annual Rocky Mountain Bioengineering Symposium, Denver CO.
- 2014 Benchmarking Data: Just Give Me Five (with others).
AAMI 2014 Conference & Expo, Philadelphia PA.
- 2014 CMS Maintenance Requirements 2013.
Colorado Association of Biomedical Equipment Technicians, Colorado Springs CO.
- 2014 CMS Maintenance Requirements 2013 / The Curious History of Electrical Safety Testing.
CEAI Meeting. Clinical Engineering Association of Illinois, Addison IL.
- 2014 Medical Device Incident Investigation.
High Plains IEEE, Fort Collins CO.
- 2014 Taking it to a new level: Standardizing and elevating our roles (with others).
AAMI 2014 Conference & Expo, Philadelphia PA.
- 2013 The Curious History of Electrical Safety Testing.
CABMET Meeting. Colorado Association of Biomedical Equipment Technicians, Aurora CO.
- 2013 New Maintenance Requirements from CMS: Where do we stand? (Keynote Address)
BAW Annual Conference 2013. Biomedical Associations of Wisconsin, Green Bay WI.
- 2013 Medical Device Incident Investigation
BAW Annual Conference 2013. Biomedical Associations of Wisconsin, Green Bay WI. Keynote.
- 2013 New Maintenance Requirements from CMS: Where do we stand?
CABMET Symposium. Colorado Association of Biomedical Equipment Technicians, Aurora CO.
- 2012 NFPA 99 (2012) and CMS Maintenance Requirements.
Intermountain Clinical Instrumentation Society (ICIS), Salt Lake City UT and online.
- 2012 Managing Equipment-Related Patient Incidents.
COPIK Risk Management and Patient Safety Forum, Denver CO.
- 2012 New Maintenance Requirements from CMS / NFPA 99 (2012) Health Care Facilities Code.
Catholic Health Initiatives (CHI) Clinical Engineering Annual Meeting, Englewood CO.
- 2012 New Maintenance Requirements from CMS.
CABMET 2012 Symposium, Denver CO.
- 2012 NFPA 99 (2012) Health Care Facilities Code.
CABMET January Meeting, Denver CO.
- 2011 CMS and the Joint Commission.
University of Vermont Technical Services Partnership, Burlington VT.
- 2010 Clinical Engineering and the World Health Organization.
RMBS 47th Annual Conference, Laramie WY.
- 2010 Environment of Care Workshop (short course).
Indian Health Service, Oklahoma OK.
- 2010 Joint Commission 101 Workshop (short course).
CABMET Annual Symposium, Denver CO.
- 2010 Patient Safety and Incident Investigation (short course).
2010 Heartland Biomedical Association Symposium, Omaha NE>
- 2010 Using Benchmarking and Benchmarking and Best Practices to Improve Departmental Performance
(with others). AAMI 2010 Conference & Expo, Tampa FL.
- 2010 Benchmarking.
University of Vermont Technical Services Program, Burlington VT.

Presentations: Lectures and Webinars for Students (Since 2010)

- 2024 Managing Medical Equipment-Related Incidents.
Colorado State University, Department of Biomedical Engineering (online).
- 2023 Managing Medical Equipment-Related Incidents.
Colorado State University, Department of Biomedical Engineering (online).
- 2022 Healthcare Technology Management.
UBC School of Biomedical Engineering, BMEG 456/556 (Vancouver BC).
- 2022 Risk Management and Planned Maintenance.
University of Victoria, BME 500 (online).
- 2022 Managing Medical Equipment-Related Incidents.
University of Victoria, BME 500 (online).
- 2022 Managing Medical Equipment-Related Incidents.
UBC School of Biomedical Engineering Propels and MedTech Talent Accelerator (online).
- 2022 Managing Medical Equipment-Related Incidents.
Colorado State University, Department of Biomedical Engineering (online).
- 2022 Managing Medical Equipment-Related Incidents.
University of Colorado, Department of Bioengineering (online).
- 2021 Clinical Engineering.
University of British Columbia: Lunch & Learn.
- 2021 Managing Medical Equipment-Related Incidents.
British Columbia Institute of Technology: Biomedical Engineering Technology.
- 2021 Managing Medical Equipment-Related Incidents.
BIOE 5041 Clinical Experiences. University of Colorado Denver.
- 2021 Managing Medical Equipment-Related Incidents.
Colorado State University: Biomedical Engineering.
- 2020 Managing Medical Equipment-Related Incidents.
Spring Clinical Engineering Week. University of Connecticut (online).
- 2020 Managing Medical Equipment-Related Incidents.
BIOE 5041 Clinical Experiences. University of Colorado Denver.
- 2019 Managing Medical Equipment-Related Incidents.
BIOE 5041 Clinical Experiences. University of Colorado Denver.
- 2018 Managing Medical Equipment-Related Incidents.
BIOE 5041 Clinical Experiences. University of Colorado Denver.
- 2017 The Curious History of Electrical Safety Testing / AAMI 2015 Electrical Safety Manual (BME 5050).
BME 5050 Engineering Problems in the Hospital. University of Connecticut (online).
- 2015 Managing Medical Equipment-Related Incidents.
BE 4810 Bioinstrumentation. University of Wyoming, Laramie WY.
- 2015 The Curious History of Electrical Safety Testing / AAMI 2015 Electrical Safety Manual (BME 5050).
University of Connecticut Clinical Engineering (online).
- 2014 Electrical Safety (BME 5020).
University of Connecticut Clinical Engineering (online).
- 2014 Managing Medical Equipment-Related Incidents.
University of Colorado Bioengineering, Denver CO.

- 2013 Electrical Power (BME 5050).
University of Connecticut Clinical Engineering (online).
- 2011 Electrical Systems.
University of Connecticut Clinical Engineering, Hartford CT.

Presentations: Workshops and Short Courses (Selected presentations since 2010)

- 2024 MEMP Workshop (with others).
MD Anderson Cancer Center, Houston TX.
- 2022 HTM 102 Codes and Standards for HTM (online, with others).
Veterans Administration (January 11-13).
- 2021 HTM 102 Codes and Standards for HTM (online, with others).
Veterans Administration (October 12-14).
- 2021 HTM 102 Codes and Standards for HTM (online, with others).
Veterans Administration (September 14-16).
- 2019 Clinical Engineering Certification Review (with others).
Veterans Administration, Frederick MD.
- 2010 ASHE Healthcare Construction Certificate Program Workshop.
United States Army Corps of Engineers, Salado TX.
- CCE Review Course (multiple, through 2019).
American College of Clinical Engineering.
- CBET Study Group (multiple, through 2018).
Colorado Association of Biomedical Equipment Technicians.
- ASHE Healthcare Construction Certificate Program Workshops (multiple, through 2012)
American Society for Healthcare Engineering.

Presentations: AEM Workshops (with Painter)

- 2020 AEM Cost Containment Forum. PartsSource, Ann Arbor MI.
- 2019 AEM Workshop. NESCE Northeastern Healthcare Technology Symposium, Framingham MA.
- 2019 AEM Cost Containment Forum. PartsSource, Pinehurst NC (NCBA Conference).
- 2019 AEM Cost Containment Forum. PartsSource, Chicago IL (CEAI Conference).
- 2019 AEM Workshop. Association for the Advancement of Medical Instrumentation, Kansas City KS.
- 2019 AEM Workshop. Association for the Advancement of Medical Instrumentation, Cleveland OH
- 2019 AEM Workshop. Association for the Advancement of Medical Instrumentation, Anaheim CA.
- 2019 AEM Workshop. Association for the Advancement of Medical Instrumentation, Tampa FL.
- 2019 AEM Workshop. Association for the Advancement of Medical Instrumentation, Indianapolis IN.
- 2018 AEM Cost Containment Forum. PartsSource, Minneapolis MN.
- 2018 AEM Cost Containment Forum. PartsSource, New York NY.
- 2018 AEM Cost Containment Forum. PartsSource, Philadelphia PA.
- 2018 AEM Cost Containment Forum. PartsSource, San Francisco CA.
- 2018 AEM Cost Containment Forum. PartsSource, Dallas TX.

- 2018 AEM Cost Containment Forum. PartsSource, Miami FL.
- 2018 AEM Workshop. Northeastern Healthcare Technology Symposium, Sturbridge MA.
- 2018 AEM Workshop. Hospital Shared Services, Denver CO.
- 2017 AEM Workshop. Northeastern Healthcare Technology Symposium, Groton CT.

Presentations: International Workshops

- 2015 Advanced Clinical Engineering Workshop, Denver CO and Toronto ON.
Faculty for Health Technology Management Seminar (Denver CO).
- 2010 Advanced Clinical Engineering Workshop, San Salvador, El Salvador.
Faculty leader. Consultant to the Pan American Health Organization.
- 2009 2nd Technical Advisory Group Meeting on Health Technology, Rio de Janeiro, Brazil.
Member of the Technical Advisory Group on Health Technology, World Health Organization.
- 2009 II Curso de Trabalho sobre Segurança e Gerenciamento de Risco em Tecnologia Médica (2nd Workshop on Safety and Risk Management for Medical Technology), São Paulo, Brazil. Faculty member.
- 2007 Symposium on Healthcare Technology Management and Workshop on Clinical Engineering, Medellín, Colombia. Faculty member. Consultant to the Pan American Health Organization.
- 2004 Advanced Clinical Engineering Workshop, Managua, Nicaragua.
Faculty leader. Consultant to the Pan American Health Organization.
- 2002 Advanced Clinical Engineering Workshop, San José, Costa Rica.
Faculty member. Consultant to the Pan American Health Organization.

Deposition Log

- 2022 Nicholson v. Covidien et al.
Hennepin County District Court File No. 27-CV-19-21024
- 2022 Ferreira v. HCA-HealthOne et al.
Colorado: Denver District Court Case No. 2019-CV-34743.
- 2021 Gu v. Retrovascular et al.
California: Superior Court, County of Alameda RG 19008006.
- 2015 Reamer v. Zimmer Holdings et al.
Illinois: Circuit Court of Cook County 2010 L 8395.
- 2014 Willoughby and Willoughby v. Johnston Memorial Hospital Authority et al.
North Carolina: Superior Court 11-CVS-3008.
- 2007 Burgess v. Advanced Surfaces.
Tennessee.

Testimony Log

- 2022 Gu v. Retrovascular et al.
Superior Court of California, County of Alameda, Case No. 19008006
- 2022 Nicholson v. Covidien et al.
Hennepin County District Court File No. 27-CV-19-21024
- 2020 Schoolcraft Medical Care Facility v. Centers for Medicare and Medicaid Services.
Department of Health and Human Services, Civil Remedies Division: Docket No. C-19-547

- 2017 Fairchild v. Koldenhoven et al.
Colorado: District Court, Boulder County 2015CV31388.
- 2002 Pohlman v. Scripps Health.
California: SDSC Case No.: GIC 759010.

— *Curriculum Vitae* updated August 2, 2024