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Curriculum Vitae

John Thomas Langell, MD, PhD, MPH, MBA

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University of Utah Health Sciences Center,

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EDUCATION AND TRAINING

Undergraduate

B.S.	University of California at Los Angeles, Los Angeles, CA Major: Biology	1991
	El Camino College, Torrance, California	1986

Graduate

M.D.	Drexel University School of Medicine, Philadelphia, PA Honor Graduate— <i>Cum Laude</i>	1999
Ph.D.	Drexel University School of Medicine, Philadelphia, PA Major: Microbiology and Immunology	1997
M.B.A.	University of Utah School of Business, Salt Lake City, UT	2013
M.P.H.	University of Texas Medical Branch, Galveston, TX Focus: Disaster and Mass Casualty Management Focus: Cosmic Radiation Risk Mitigation	2005
	University of Houston School of Business, Houston, TX Focus: Organizational Development	2003

Post-graduate

Stanford University Healthcare, Stanford, California

Intern	Department of Surgery, General Surgery Residency	1999-2000
Resident	Department of Surgery, General Surgery Residency	2000-2005
Chief Resident	Department of Surgery, General Surgery Residency	2005-2006

NASA-Johnson Space Center/University of Texas Medical Branch, Galveston, Texas

Resident	Department of Aerospace Medicine Space Medicine Residency	2002-2004
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Other Formal Education

- 2016 Business Innovation Strategies in Global Healthcare, Harvard Business School, MA
- 2016 American College of Healthcare Executives, Board of Governor's Board Certification Course
- 2016 Lean and Six Sigma Black Belt Course, Management and Strategy Institute, PA
- 2016 USAF (CEO) Commanders Leadership Course, Atlanta, GA
- 2014 Advanced Professional Joint Leadership College, U.S. National Staff College, VA (1-year program)
- 2012 Health Services Executive Leadership Program, Atlanta, GA
- 2001 Emergency Surgeons Course, Department of Defense, Lackland Air Force Base, TX
- 2010 Advanced Leadership and Strategy College, United States Government Distance Learning, (2-year program)
- 2010 American College of Surgeons, Leadership and Political Advocacy Course, Washington D.C.
- 2008 Leadership and Strategy College, United States Government Distance Learning, (2-year program)
- 2004 Aircraft Crash and Mishap Investigation Medicine Course, San Antonio, TX
- 2004 Advanced Mountain and Crevasse Medical Stabilization and Rescue Course, Denali, AK
- 2004 Top Knife, USAF Advanced Fighter Aircraft Training Course, Klammoth Falls, OR
- 2003 Aerospace and Space Medicine Training Program, San Antonio, TX
- 2003 Basic and Advanced Aerobatic Flight and Upset Training, Houston, TX
- 2001 Hyperbaric Medicine Certification Course, University of South Carolina, SC

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1987 Business Ethics and Quality Management Systems, McDonnell Douglas Aircraft

APPOINTMENTS AND POSITIONS

Current Academic Appointments

Executive Director	University of Utah, Center for Medical Innovation (2012-Present)
Vice Dean	University of Utah School of Medicine (2014-Present)
Tenured Associate Professor	Department of Surgery, University of Utah School of Medicine (2016-Present)
Associate Professor	Department of Strategy, University of Utah School of Business (2016-Present)
Associate Professor	Department of Bioengineering, University of Utah College of Engineering (2016-Present)
Section Chief	Innovation Department of Surgery, University of Utah School of Medicine (2015-Present)
Director	BioInnovate Fellowship, University of Utah Health (2011-Present)

Current Non-academic Appointments

Lean Healthcare Lead	Veterans Affairs Regional Center of Innovation, Salt Lake City, UT
President	Xenocor Incorporated, Salt Lake City, UT

Previous Academic Appointments

CEO (Commander)	349 th Medical Group, U.S. Air Force, Travis AFB, CA (2015-2018)
Chief of General Surgery	George E. Wahlen VA Medical Center, Salt Lake City, UT (2007-2015)
Associate Director	Sorenson Discovery and Innovation Center, University of Utah School of Business (2013-2016)
Section Chief/Director	Acute Care Surgery, Department of Surgery, University of Utah School of Medicine (2006-2012)

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Assistant Professor	Department of Surgery, University of Utah School of Medicine (2006-2016)
Assistant Professor	Department of Strategy, University of Utah School of Business (2006-2016)
Assistant Professor	Department of Bioengineering, University of Utah College of Engineering (2010-2016)
Clinical Specialist	Department of Anesthesia and Critical Care, MD Anderson Cancer Center, University of Texas (2002-2005)
Chief Resident	Department of Surgery, Stanford University School of Medicine (2005-2006)
Post-Doctoral Fellow	Center for Gene Therapy, Drexel University School of Medicine (1997-1999)
Previous Non-academic	
Co-Director	University Health System Lean Operations Program, Salt Lake City, UT (2012-2015)
CEO (commander)	624 th Medical Squadron, Joint Base Pearl Harbor-Hickam, HI (2013-2016)
CEO (Commander)	926 th Aerospace Medicine Squadron, Nellis Air Force Base, NV (2010-2013)
CEO (Commander)	310 th Aerospace Medicine Squadron, Buckley Air Force Base, CO (2007-2010)
Basecamp Physician	Mount Everest— Himalayan Rescue Association, Kathmandu, Nepal (2004)
Section Chief	Aerospace Medicine, 302 nd Aeromedical Staging Squadron, Peterson Air Force Base, CO (2004-2007)
Director	Intravenous Access and Phlebotomy Team, Hahnemann University Hospital, Philadelphia, PA
Research Assistant	Department of Psychiatry, Drexel University, Philadelphia, PA

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Research Assistant	Department of Emergency Medicine, University of California and Los Angeles, Los Angeles, CA
R&D Specialist	McDonnell Douglas Aircraft Corporation, Torrance, CA (1986-1989)
Quality Management Instructor	McDonnell Douglas Aircraft Corporation, Torrance, CA (1988-1989)

CERTIFICATION AND LICENSURE

Specialty Certification

2006	Diplomat, American Board of Surgery—General Surgery (recertification 2017)
2004	Board Eligible, American Board of Preventive Medicine—Aerospace Medicine (eligibility maintained 2018)
2003	Aerospace Medicine Certification, USAF School of Aerospace Medicine, San Antonio, TX
2000	Diplomat, National Board of Medical Examiners
1999	Advanced Cardiac Life Support (ACLS)
1999	Advanced Trauma Life Support (ATLS)

Medical Licensure

2006-Present	Utah Division of Professional Licensing—Physician and Surgeon
2006-Present	Utah Division of Professional Licensing—Controlled Substance
2000-Present	U.S. Drug Enforcement Administration—Controlled Substance
2002-2013	Texas Medical Board—Physician
1999-Present	Medical Board of California—Physician and Surgeon

Nonmedical Certifications

2016	Lean and Six Sigma Black Belt Certification, Management and Strategy Institute, PA
2003	U.S Federal Aviation Administration, Private Pilots License

HONORS AND AWARDS (Selected)

2017	Governor's Office of Economic Development and Stoel Rives "Utah Medical Device Innovation of the Year Award"—Xenocor Inc.
2017	Sundance Film Festival Panel and Documentary Selectee, "Healing Healthcare with Disruptive Health Technology"
2017	American Medical Association National "Health Innovation of the Year" Award, Veritas Medical
2016	Governor's Office of Economic Development and Stoel Rives "Utah Medical Device Innovation of the Year Award"—Veritas Medical
2015	NASA, Rice University Business Plan--Best Medical Space Technology Award
2015	Rice University Business Competition, Technology Innovation Business Plan Award
2014	Association for Academic Surgery, Surgical Innovation Award
2014	United States Patent and Trademark Office, Collegiate Inventors Competition Award, Mentor—National Finals, Washington DC
2014	James Sorenson Discovery and Innovation Faculty Fellow, University of Utah, David Eccles School of Business
2012	University of Utah Entrepreneurial Faculty Scholar
2011	International Space Medicine Society, Award for Most Outstanding Publication
2006	White House Presidential Fellows Program, National Finalist
2004	William K. Douglas Scholarship Award for Academic Excellence in Aerospace Medicine, NASA/University of Texas Medical Branch
2003	Astronaut Finalist, NASA-Johnson Space Center, Houston, TX
1999	The Donald R. Cooper, M.D. Excellence in Surgery Award, Drexel University School of Medicine

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1999	The Merck Manual Award for Excellence in Clinical Medicine, Drexel University School of Medicine
1999	Drexel University (former MCPH) School of Medicine Dean's Award
1998	Alpha Omega Alpha Honor Medical Society Inductee
1998	American Society of Transplant Surgeons, Young Investigators Award for Outstanding Research
1998	Society of Transplant Surgeons, Young investigators Award for Outstanding Research
1997	International Congress for Xenotransplantation, Young Investigators award for Outstanding Research
1996	Drexel University Health Sciences Graduate Research Award for Most Outstanding Research
1991	MD/PhD Full Scholarship, Drexel University (Formerly Medical College of Pennsylvania—Hahnemann School of Medicine)

LEADERSHIP AND SERVICE

National and Regional Boards

2019-Present	Ensign College of Public Health, Ghana, Board of Governors
2017-Present	Mountain-Pacific Venture Fund, Executive Board of Advisors, Salt Lake City, UT
2016-Present	Leonhardt Ventures, Executive Board of Advisors, Salt Lake City, UT
2015-Present	Medical Product Outsourcing, Executive Board of Advisors, Boston, MA
2014-Present	BioUtah, Executive Board of Directors

Leadership and Service to Professional Societies

2014-2016	Association for Academic Surgeons, Program Committee Member
2012-2014	Salt Lake Surgical Society, Secretary

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2012-2014	American College of Surgeons, National Advocacy and Policy Representative
2012-2013	American College of Surgeons, President, Utah Chapter
2011	American College of Surgeons Utah, Chairman, Annual Scientific Meeting
2010-2012	American College of Surgeons, Vice President, Utah Chapter
2010-2012	American College of Surgeons—Utah Medical Association, Patient Rights Coalition Representative
2008-2010	Salt Lake Surgical Society, Treasurer
2008-2010	Association for Academic Surgery, Issues Committee Member
2007-2015	Association for Academic Surgery, Institutional Representative
1993-1994	American Medical Association—Medical Student Section, President Drexel University Medical School (formerly MCP-Hahnemann)
1992-1993	American Medical Association—Medical Student Section, President Drexel University Medical School (formerly MCP-Hahnemann)

Institutional Leadership and Service

2015-Present	Chairman, Technology Assessment Committee, University of Utah Healthcare System
2014-2017	Senator, Faculty Academic Senate, University of Utah
2013-Present	President's Institutional Commercialization Coordination Committee, University of Utah
2013-2016	Chairman, Health and Preventive Medical Application and Gaming Group, University of Utah Health Sciences
2012-2016	Retention, Promotion and Tenure Revisions Committee, University of Utah Health Sciences
2012-2016	Senior Vice President's Liaison, Operating Room Executive Committee, University of Utah Health Sciences
2012-2017	Technology and Commercialization Advisory Board, University of Utah

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2012-2016	Hospital Lean Healthcare Oversight Group, University of Utah Health Sciences
2012-2016	Center for Quantitative Biology Advisory Board, University of Utah
2012-2016	Multidisciplinary Design Major Advisory Board, University of Utah
2012-2015	Technology Assessment Committee, University of Utah Healthcare System
2012-2014	Intellectual Property and Copyright Committee, University of Utah
2012-2013	Faculty Compensation Review Committee, University of Utah Health Sciences
2011-Present	Advisory Board, Center for Global Surgery, University of Utah
2011-2015	Board of Directors, Pierre Lassonde Entrepreneurship Institute, University of Utah
2010-2016	Internal Seed Grant Committee, University of Utah
2010-2012	Institutional Review Board, University of Utah
2009-Present	Faculty Advisor, Student Technology, Research, Development and Innovation Group, University of Utah
2009-2012	Director, Department of Surgery Fourth-Year Medical Student Honors Program, University of Utah School of Medical School
2008-2016	Medical School Admissions Committee, University of Utah School of Medicine
2005-2006	Rambar-Mark Award for Excellence in Patient Care Committee, Stanford University
2004-2006	Graduate Medical Education Committee, Stanford University
2005-2006	Surgical Residency Selection Committee, Stanford University
2003-2004	Master of Public Health Executive Advisory Committee, University of Texas Medical Branch
1995-1997	MD/PhD Admissions and Affairs Committee, Drexel University School of Medicine (formerly MCP-Hahnemann)

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1994-1995	Student Appeals Committee, Drexel University School of Medicine (formerly MCP-Hahnemann)
1993-1994	Research Advisory Committee, Drexel University School of Medicine (formerly MCP-Hahnemann)

MAJOR PROGRAM DEVELOPMENT (Selected)

2017	Faculty Innovation-Research and Entrepreneurial Scholars Program (FIRES), University of Utah
2014	Crocker Interdisciplinary Innovation and Design Laboratory (Only ISO13485 Certified Lab at a University Worldwide), University of Utah
2014	Digital Medical Therapeutics Center (The GApp Lab), University of Utah
2014	Regulatory Consulting and Assisting Program, University of Utah
2013	New Venture and Intellectual Property Clinic, University of Utah
2012	Center Medical Innovation, University of Utah
2012	Lean Healthcare Operations Program, University of Utah Health Sciences Center
2012	Willem Kolff Surgical Innovation Annual Lectureship Series, University of Utah
2010	Bench to Bedside Multidisciplinary Medical Innovation Training Program, University of Utah

RESEARCH and FUNDING

Grant Funding (Current)

2019-2021	Development of a Health Technology Business Innovation Fellowship Program Dell Loy Hansen Foundation (\$540,000) Role: <u>Program Manager/Director</u>
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- 2019-2020 Phase II: Development and Deployment of a Surgical Safety Application
US Veterans Administration—Innovation Program Grant
Digital Healthcare Technology
(\$142,000)
Role: Principal Investigator
- 2019-2020 Center for Medical Innovation Expansion Grant
Utah Governor’s Office of Economic Development
(\$500,000)
Role: Program Manager
- 2014-2019 Development of an NSF I-Corps Site Program (2-year extension)
National Science Foundation (NSF), Type-I I-Corps Site Grant
(\$300,000)
Role: Principal Investigator
- 2018 Development of an Interdisciplinary Prototype and Design Lab
Sorenson Legacy Foundation Grant
(\$500,000)
Role: Principal Investigator
- 2018 Utah Governor’s Office of Economic Development -Technology
Commercialization and Innovation Program, Sixth-Sensing LLC
(\$100,000)
Role: Co-principal Investigator
- 2017-2020 Development of an NSF I-Corps Site Program
National Science Foundation Type II I-CORPS Site Renewal
National Science Foundation
(\$300,000)
Role: Principal Investigator
- 2017-2020 Clinical Testing and Development of a Peripheral Catheter
Thrombosis and Flow Model
Utah—USTAR Technology Innovation Industry Partnership
Program Grant
USTAR and BD Medical
(\$2,500,000) (\$800,000 USTAR and \$1.7MM BD Medical)
Role: Principal Investigator
- 2017 Catheter-based active antimicrobial system
Utah—USTAR Technology Accelerator Program
(\$250,000)
Role: Senior Personnel

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2017-2018	Center for Medical Innovation development Grant (renewal) Ray and Tye Noorda Foundation (\$200,000) Role: <u>Program Manager</u>
2017	Global Health Innovation Fellows Grant Zions Bank and Patel Family Foundation (\$50,000) Role: <u>Program Manager</u>
2017	Neurotracker Active learning Enhancement in Surgery Study Rockwell Collins Industry Grant (38,000) Role: <u>Senior Personnel</u>
2011-2019	Bench to Bedside Development and Sustainment Program Zions Bank (\$1,100,000) Role: <u>Program Manager</u>
Grant Funding (Expired)	
2018	Development and Deployment of a Surgical Safety Application US Veterans Administration—Innovation Program Grant Digital Healthcare Technology (\$34,000) Role: <u>Principal Investigator</u>
2014-2017	Creation of an interdisciplinary technology development and entrepreneurship space Sorenson Legacy Foundation Grant (\$975,000) Role: <u>Principal Investigator</u>
2012-2017	Clinical Emersion as an Empathetic Training Tool in Medical Device Innovation (R25 EB013122-01A1) NIH R25 Program (\$213,000) Role: <u>Co-Principal Investigator</u>
2017	Center for Medical Innovation Development Grant Ray and Tye Noorda Foundation (\$200,000) Role: <u>Principal Investigator</u>
2016	Development of a Mobile Wireless Laparoscope

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- Utah—Governor’s Office of Economic Development TCIP Grant
(\$100,000)
Role: Principal Investigator
- 2014 Building Awareness of Sex and Gender Differences Research:
Phase II
U.S. Public Health Service-ICF
(\$50,000)
Role: Co-Principal Investigator
- 2014 Mobile Wireless Laparoscope (Renewal)
Utah—Governor’s Office of Economic Development TCIP Grant
(\$40,000)
Role: Principal Investigator
- 2014 Development of a Self-closing Laparoscopic trocar
Utah—Governor’s Office of Economic Development TCIP Grant
(\$40,000)
Role: Principal Investigator
- 2013 Technology and Venture Commercialization “Engine Grant” for New
Technology Development
Utah—Governor’s Office of Economic Development TCIP Grant
(\$20,000)
Role: Principal Investigator
- 2013 Development of a fully translatable cloud-based electronic health
record for the developing world
Sorenson Legacy Foundation Grant
(\$50,000)
Role: Principal Investigator
- 2013 University of Utah Hospital Operations Grant-Development of a
comprehensive perioperative care application to improve
operational efficiency and the exceptional patient experience
(\$7,000)
Role: Principal Investigator
- 2012 Development of a mobile Wireless Laparoscope (renewal)
Utah—Governor’s Office of Economic Development TCIP Grant
(\$40,000)
Role: Principal Investigator
- 2012 NASA-EPSCOR Collaborative Investigator grant, Laparoscope for
Space-based Surgery
NASA-EPSCOR

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- (\$2,500)
Role: Principal Investigator
- 1999 Transplantation immunology educational grant
American Society of Transplant Physicians
(\$500)
Role: Principal Investigator
- 1998 Antisense Ribozyme-Mediated Cleavage of the α -1,3-Galactosyl
Epitope
Society for Vascular Surgery
(\$5,000)
Role: Principal Investigator
- 1998 Characterization of preformed antibody-mediated Hyperacute
Rejection in the Porcine to Human Xenotransplantation Model
American Heart Association
(\$30,000)
Role: Principal Investigator
- 1997-1999 Ribozyme-Mediated Suppression of the alpha-Galactosyl
Carbohydrate xenogeneic antigen.
Society for Vascular Surgery/Lifeline
Role: Principal Investigator
- 1996 Deletion of the Alpha-Gal Xenotope Through the Expression of the
Coffee Bean Alpha-1,3-Galactosidase
Society of Sigma XI
Role: Principal Investigator

Recent Grant Submissions

- 2019 National Institutes of Health, Research Evaluation and
Commercialization Hub (U-01)
(\$4,000,000)
Role: Principal Investigator

National Grant Reviewer/Study Section

- 2016 National Science Foundation, Engineering Directorate, Innovation Corps
Node Program Study Section
- 2015 National Science Foundation, Engineering Directorate, Innovation Corps
Site Program Study Section
- 2014 National Science Foundation, Engineering Directorate, Innovation Corps
Site Program Study Section

TEACHING AND EDUCATIONAL PROGRAM DEVELOPMENT

Educational Program and Curriculum Development

2016-Present	LEAN-Six Sigma Healthcare Operations Physicians Course, Veterans Administration Health Care System
2015-Present	Life Science-Focused MBA Degree, University of Utah School of Business
2015-Present	BioVentures—Life Sciences Leadership Development Course Executive Education Program University of Utah School of Business
2014-Present	Lean Healthcare Operations and Innovation Curriculum Physician Leadership Program University of Utah School of Business
2014-Present	FDA Regulatory Course for Physician and Scientists Physician Leadership Program University of Utah School of Business
2014-Present	Intellectual Property Protection for Faculty Entrepreneurs Physician Leadership Program University of Utah School of Business
2014-Present	Innovation Corps (I-Corps) Faculty Training Curriculum University of Utah
2014-2016	Combined MD-MBA Dual Degree Program Innovation Pathway University of Utah School of Medicine and School of Business
2012-2016	BioImmersion—NIH Sponsored Bioengineering Clinical Internship University of Utah College of Engineering
2011-Present	Bench to Bedside—Multidisciplinary Medical Technology and Entrepreneurship Program University of Utah
2010-Present	BioInnovate Master of Bioengineering Degree Track University of Utah College of Engineering

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2008-2015	Surgery Educational Curriculum General Surgery Residency Training Program Veterans Administration Clinical Rotation University of Utah School of Medicine
2006-2012	Acute Care Surgery Educational Curriculum General Surgery Residency Training Program University of Utah School of Medicine
2006-2012	Surgery Honors Program Curriculum Development--4th year Medical Student Clerkship University of Utah School of Medicine
Course Director 2018	BioVentures II—Life Science Industry Leadership Course University of Utah School of Business Executive Education
2017-Present	BioVentures I—Life Science Industry Leadership Course University of Utah School of Business Executive Education
2016-Present	Life Science Technology Commercialization Strategy I (Strat 6010) University of Utah School of Business
2016-Present	Life Science Technology Commercialization Strategy II (Strat 6020)
2016-Present	LEAN and Six Sigma Healthcare Operations for Physicians Course Veterans Administration Health Care System
2014-Present	Innovation Corps (I-Corps) Faculty Training Program University of Utah Center for Medical Innovation
2013-Present	Intellectual Property Forum for University Faculty and Industry Partners University of Utah Center for Medical Innovation
2012-Present	Clinical Problem Solving Through Strategic Analysis I (Bioen 6181) University of Utah Department of Bioengineering
2012-Present	Clinical Problem Solving Through Strategic Analysis II (Bioen 6182) University of Utah Department of Bioengineering
2011-Present	Bench to Bedside—Multidisciplinary Medical Technology and Entrepreneurship Program University of Utah Center for Medical Innovation
2010-2011	Seminars in Bioengineering—Clinical Innovation I (Bioen 6901)

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University of Utah Department of Bioengineering

2010-2011 Seminars in Bioengineering— Clinical Innovation II (Bioen 6902)
University of Utah Department of Bioengineering

Teaching (courses and educational preceptorships)

2015-Present Government Regulation of Digital Healthcare

2012-Present Lean Healthcare Operations to reduce Waste and increase Value

2012-Present Application of Lean and Six Sigma Principles in Healthcare

2010-Present Clinical Immersion and Discovery in Medical Tech Innovation

2010-Present Need Statement Development in Clinical Innovation

2010-Present Disease State Fundamentals and Treatment Options

2010-Present Stakeholder and Market Analysis in the Life Science Sector

2010-Present The Value Analysis Committee in Technology Adoption

2010-Present Coding, Coverage and Payment for New Technologies

2010-Present Intellectual Property Basics

2010-Present Business Model Development

2010-Present The Business Model Canvass and Value Proposition

2010-Present Market and Competitive Landscape Analysis

2010-Present Solution Concept Screening in Technology Innovation

2010-Present Design Thinking, Ideation and Brainstorming

2010-Present Healthcare Technology Regulatory Basics

2010-Present Basic Financial Accounting Principles

2010-Present Healthcare Leadership and Management

2010-Present Marketing Strategy in the Life Science Industry

2010-Present Technology Reimbursement Strategies

2010-Present Business Competition and Strategy

2010-Present Clinical Research Strategies for Medical Device Development

2010-Present Intellectual Property Strategy

2010-Present Intellectual Property Valuation

2010-Present Regulatory Strategy in the Medical Technology Sector

2010-Present Strategic Research and Development of Healthcare Technologies

2010-Present Sales and Distribution Strategies for Healthcare Technologies

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2010-Present	Capital Acquisition Models and Licensing Pathways
2006-2016	The Diagnosis and Treatment of Diverticulitis
2006-2016	The Diagnosis and Treatment of the Acute Abdomen
2006-2016	The Diagnosis and Treatment of Acute Appendicitis
2006-Present	The Diagnosis and Treatment of Biliary Disease
2006-2016	The Diagnosis and Treatment of Acute Pancreatitis

Small Group Teaching

2006-Present	Clinical teaching on the general surgery service at the Salt Lake City VA medical center. Topics are in the evaluation and management of general surgical patients. Teaching is conducted through daily teaching rounds, clinic encounters, weekly morbidity and mortality conferences, preoperative planning conferences and operating room instruction
2008-2016	Clinical teaching on the gastrointestinal and endocrine surgery service. Topics are in the evaluation and management of endocrine and gastrointestinal disorders. Teaching is conducted through daily teaching rounds, clinic encounters, weekly morbidity and mortality conferences, preoperative planning conferences and operating room instruction
2006-2013	Clinical teaching on the University of Utah acute care surgery service. Topics are in the evaluation and management of emergency and acute surgical patients. Teaching is conducted through daily teaching rounds, clinic encounters, weekly morbidity and mortality conferences, preoperative planning conferences and operating room instruction

Small Group Teaching

2006-Present	Surgical mock oral examination preparation and simulation. Small group teaching and evaluation to the 3rd, 4th and 5th year surgical residents
2008-2016	Surgical honors program lectures
2006-2016	Lectures in surgery, 3 rd -year medical clerkship
2007-2013	Surgical Professor's Rounds

Teaching Awards

2018	University of Utah College of Engineering Top Instructor
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ADVISING AND MENTORING

Postgraduate Students

- 2016-2017 Research Advisor and Academic Mentor, Erik Weissner, MD
General Surgery Resident
- 2016-2017 Research Advisor and Academic Mentor, Luke Martin, MD
General Surgery Resident
- 2015-2017 Research Advisor and Academic Mentor, Jennwood Chen, MD
General Surgery Resident
- 2013-2015 Research Advisor and Academic Mentor, Alice Chung, MD
General Surgery Resident
- 2011-2012 Research Advisor and Academic Mentor, Molly Gross, MD
General Surgery Resident
- 2010-2012 Research Advisor and Academic Mentor, Nicholas Berge, MD
General Surgery Resident
- 2008-2010 Research Advisor and Academic Mentor, Bethany White, MD
General Surgery Resident
- 2007-2008 Research Advisor and Academic Mentor, Dihn Kim Le, MD
General Surgery Resident

Doctoral Students

- 2017-Present Thesis Committee Chair/Advisor, Travis Neuberger, Bioengineering
University of Utah
- 2016-Present Thesis Committee/Advisor, Ahmad Saleem, Bioengineering
University of Utah
- 2014-2017 Thesis Committee/Advisor, Spencer Madsen, Bioengineering
University of Utah

Masters Students

- 2018-2019 Thesis Committee/Advisor, Tanner Lesueur, Bioengineering
University of Utah
- 2018-2019 Thesis Committee/Advisor, Jonathan Poulson, Bioengineering
University of Utah

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2018-2019	Thesis Committee/Advisor, Robert Walker, MD, Bioengineering University of Utah
2018-2019	Thesis Committee/Advisor, Rachael Palmer, Bioengineering University of Utah
2018-2019	Thesis Committee/Advisor, Tarek S. Marrouche, Bioengineering University of Utah
2018-2019	Thesis Committee/Advisor, Daniel Spicer, Bioengineering University of Utah
2017-2018	Thesis Committee/Advisor, David Crosland, Bioengineering University of Utah
2017-2018	Thesis Committee/Advisor, Elizabeth Einarson, Bioengineering University of Utah
2017-2018	Thesis Committee/Advisor, Christine Henry, Bioengineering University of Utah
2017-2018	Thesis Committee/Advisor, Arash Poursaid, Bioengineering University of Utah
2017-2018	Thesis Committee/Advisor, Trevor Hafer, Bioengineering University of Utah
2017-2018	Thesis Committee/Advisor, Joseph Illingsworth, Bioengineering University of Utah
2016-2018	Thesis Committee/Advisor, Kapil Sharma, Bioengineering University of Utah
2016-2017	Thesis Committee/Advisor, Alexandra Eisenbiess, Bioengineering University of Utah
2016-2017	Thesis Committee/Advisor, William Eccles, Bioengineering University of Utah
2016-2017	Thesis Committee/Advisor, Laura Gardner, Bioengineering University of Utah
2016-2017	Thesis Committee/Advisor, Brian Kirk, Bioengineering University of Utah
2016-2017	Thesis Committee/Advisor, Kellen Hilton, Bioengineering

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	University of Utah
2016-2017	Thesis Committee/Advisor, Kapil Sharma, Bioengineering University of Utah
2016-2017	Thesis Committee/Advisor, James Morgan, Bioengineering University of Utah
2016-2017	Thesis Committee/Advisor, David Williams, Bioengineering University of Utah
2016-2017	Thesis Committee/Advisor, Jacob Whittle, Bioengineering University of Utah
2016-2017	Thesis Committee/Advisor, Sarah Broderick, Bioengineering University of Utah
2015-2016	Thesis Committee/Advisor, Paul Holman, Bioengineering University of Utah
2015-2016	Thesis Committee/Advisor, Tyson Schwab, Bioengineering University of Utah
2015-2016	Thesis Committee/Advisor, Benjamin Fogg, Bioengineering University of Utah
2015-2016	Thesis Committee/Advisor, Adam Meese, Medical Sciences University of Utah
2015-2016	Thesis Committee/Advisor, Kristopher Loken, Bioengineering University of Utah
2014-2015	Thesis Committee/Advisor, Samuel Thomas, Bioengineering University of Utah
2014-2015	Thesis Committee/Advisor, Thomas Russell, Bioengineering University of Utah
2013-2014	Thesis Committee/Advisor, Jordan Baczuk, Bioengineering University of Utah
2013-2014	Thesis Committee/Advisor, Michael Fogarty, Bioengineering University of Utah
2013-2014	Thesis Committee/Advisor, Michael Bobbe, Bioengineering University of Utah

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2013-2014	Thesis Committee/Advisor, Alice Chung, MD, Bioengineering University of Utah
2013-2014	Thesis Committee/Advisor, Chris Bowen, Bioengineering University of Utah
2013-2014	Thesis Committee/Advisor, Nate Rhodes, Bioengineering University of Utah
2012-2013	Thesis Committee/Advisor, William Huang, Bioengineering University of Utah
2012-2013	Thesis Committee/Advisor, Paul Johnson, Bioengineering University of Utah
2012-2013	Thesis Committee/Advisor, Rita Pingree, MD, Bioengineering University of Utah
2011-2012	Thesis Committee/Advisor, Nicholas Blickenstaff, Bioengineering University of Utah
2011-2012	Thesis Committee/Advisor, Garrett Coman, Bioengineering University of Utah
2011-2012	Thesis Committee/Advisor, Molly Gross, MD, Bioengineering University of Utah
2011-2012	Thesis Committee/Advisor, John Peeler, Bioengineering University of Utah
2011-2012	Thesis Committee/Advisor, Curtis Olsen, Bioengineering University of Utah
Program Mentor	
2013-2014	United States Society for Presidents and Congress Fellowship Advisor Spencer Madsen, PhD Candidate

PUBLICATIONS AND RESEARCH DISSEMINATION

Journal Publications

Schwab T, Langell J, Human Factors Based Mobile Application Design for Global Health. *Journal of Surgical Innovation*. 2018 Nov 22:1553350618814643.

Gardner LJ, Brunson J, McIntyre M, Langell J, Use of an Interdisciplinary Student

Medical Innovation and Entrepreneurship program to Create Affordable Healthcare Solutions Tailored to the Global Environment. *Journal of Surgical Innovation*. 2018 Nov 21:1553350618813437.

Schwab T, Fassl B, Langell J, The Importance of Design Validation in Global Health Surgical Innovation. *Journal of Surgical Innovation*. 2018 Nov 21:1553350618814644.

Langell A, Pickett T, Mangum C, Chen J, Langell J, Thermal Coagulation Device for Treating Cervical Dysplasia. *Journal of Surgical Innovation*. 2018 Dec 20: doi: 10.1177/1553350618819521

Langell J, Martin L, Improving on Time Surgical Starts: The Impact of Implementing Pre-OR Timeouts and Performance Pay, *J Surg Research* November 2017;219:222-225.

Barneck M, Rhodes N, de la Presa M, Poursaid A, Nourian M, Firpo M, Langell J, Violet 405-Nm Light: A Novel Therapeutic Agent Against Common Pathogenic Bacteria, *J Surg Res*. 2016 Dec;206(2):316-324.

Chen J, Pickett T, Langell A, Trane A, Charlesworth B, Loken K, Lombardo S, Langell J, Industry –Academic Partnership: An Approach to Accelerate Innovation, *J Surg Res*. 2016 Sep;205(1):228-33.

Smiley K, Malhotra R, Peche W, Langell J, Unresectable Pancreatic Adenocarcinoma, Eight Years Later, *World J Oncol*. 2016;7(1):17-20.

Gardner G, Langell A, Loftus P, Elder C, D'Ambrosio T, Langell J, Fostering Student Success in Biomedical Technology Entrepreneurship Competitions: The University of Utah Bench-to-Bedside Medical Device Design Competition. *J. Engineering and Entrepreneurship*, 2016;7:1

Rhodes N, de la Presa M, Barneck M, Poursaid A, Firpo M, Langell J, Violet 405-nm Light Kills β -lactam Resistant Escherichia Coli in Vitro, *Lasers Surg Med*. 2016 Mar;48(3):311-7.

Gardner G, Langell A, Loftus P, Elder C, D'Ambrosio T, Langell J, Fostering Student Success During and After a Medical Technology Entrepreneurship Competition: The University of Utah Bench-to-Bedside Medical Device Design Competition, *Proceedings of the NCIIA*. 2015 <http://venturewell.org/open/wp-content/uploads/2013/10/GARDNER.pdf>

Millar D, Langell JT, Intrathoracic and Pelvic Migration of Humeral Fixation Wires, *Journal of Trauma and Clinical Orthopedics*. 2016 Jun; 1(1):1-3.

Madsen S, Thorup K, Baczuk J, Patwari N, Barton R, Langell J, Development of a contact-free RF-based respiratory sensor: Results of a clinical pilot study, *J Surg Res*. 2016 Jun 1;203(1):1-5.

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Langell J, Zimmerman J, Sathya V, Implementation of Practice Guidelines to Reduce Waste and Optimize Patient Value, *J Surg Res.* 2016 Jun 15;203(2):287-92.

Loftus P, Elder C, D'Ambrosio T, Langell J, Training a New Generation of Clinician Innovators Through a Multidisciplinary Medical Technology Design Competition, *Journal of Clinical and Translational Medicine*, 2015;4:15.

Glasgow RE, Hawn MT, Hosokawa PW, Henderson WG, Min SJ, Richman JS, Tomeh MG, Campbell D, Neumayer LA, Langell J; DS3 Study Group Comparison of prospective risk estimates for postoperative complications: human vs computer model. *J Am Coll Surg.* 2014 Feb;218(2):237-45.

Loftus P, Elder C, Sorenson M, Shipman J, D'Ambrosio T, Petelenz T, Hitchcock R, Langell J, Creating a Benchmark Medical Technology Entrepreneurship Competition: The University of Utah Bench-to-Bedside Medical Device Design Competition, *Proceedings of the NCIIA.* 2014 <http://nciia.org/open/wpcontent/uploads/2013/10/LANGELL.pdf>

Langell JT, Mulvihill SJ. (2008). Gastrointestinal perforation and the acute abdomen. *Med Clin North Am*, 92(3), 599-625, viii-ix.

Le D, Rusin W, Hill B, Langell JT. (2009). Post-operative antibiotic use in nonperforated appendicitis. *Am J Surg*, 198(6), 748-52.

Langell J, Jennings R, Clark J, Ward JB Jr. (2008). Pharmacological agents for the prevention and treatment of toxic radiation exposure in spaceflight. *Aviat Space Environ Med*, 79(7), 651-60.

Reiss GR, Langell JT, DiSesa VJ, Prockop DJ. (1998). Rescue from Lethal Total Body Irradiation by Allogeneic Marrow Stromal Cells. *Surgical Forum*, (49), 392-394.

Langell JT, Lehmann J. (1996). The Effect of 5-Hydroxytryptophan on Intraocular Pressure. *Invest Ophthalmol Vis Sci*, 37(3), 3831.

Publications Pending/Submitted

Langell J, Evidence-based medicine: A Validated Tool for Lean Healthcare Implementation. Accepted for publication, *International Journal of Healthcare Management*, Jan 2019

Hopf H, Stark LA, Hobson-Rohrer W, Byington C, Lee V, Langell J, et al, Defining Fundamental and Variable Components of Faculty Professional Activity for Appointment, Review, and Advancement at a School of Medicine, Submitted to *Academic Medicine*, in revision 2019

Manuscripts in Preparation

February 21, 2019

Loftus PD, Zhang X, Elder CT, D'Ambrosio T, Langell J, Designing Medical Education Programs that Incentivize Translational Science and High-risk Innovation. Manuscript in preparation for submission to *Academic Medicine*

Fogg B, Langell J, Transforming Medical Student Education Through Interdisciplinary and Experiential Education to Foster Medical Innovation. Manuscript in preparation for submission to *Academic Medicine*

Langell A, Pickett T, Dodson M, Mangum C, Chen J, Wallace D, Langell J, Clinical trial of Cervical Thermo-Coagulation on Cervical Epithelial Coagulative Necrosis. Manuscript in Preparation for submission to *Obstetrics and Gynecology*

Langell J, D'Ambrosio T, Petelenz T, The National Science Foundation I-Corps Program: An Important Resource to Promote Technology Innovation in Surgery. Manuscript in Preparation for submission to *Journal of Surgical Research*

Langell J, Young MJ, Ferraro J, Development of an Automated Digital Surgical Safety Checklist to Reduce Surgical Errors. Manuscript in Preparation for submission to *Journal of the American College of Surgeons*

Langell J, Walker S, Pickett T, Accelerated Medical Technology Development and Commercialization Using The DesignBox™ Process. Manuscript in Preparation for submission to *Journal of Innovation and Entrepreneurship*

Weisner E, Martin L, Peche W, Langell J, Variations in HIDA Scan-based Gallbladder Ejection Fractions Over Time in Suspected Biliary Dyskinesia. Manuscript in Preparation for submission to *J. Surgery*

Weisner E, Martin L, Peche W, Langell J, Impact of Narcotic Analgesic Use on HIDA Scan-based Gallbladder Ejection Fractions. Manuscript in Preparation for submission to *J Surgical Research*

Book Chapters

Langell J, Mulvihill S. (2013). Gastric Adenocarcinoma and Other Gastric Neoplasms (EXCEPT Gist). In Zinner (Ed.), *Maingot's Abdominal Operations*. Stamford: Appleton and Lang

Langell JT, Miniati D, Greco R. (2003). Postoperative Bleeding. In *Surgery Clerkship Guide*. St. Louis, MO: Mosby Publishing

Maggard M, Schmit P, Langell JT. (2003). Gastrointestinal Surgery. In *Surgery Clerkship Guide*. St. Louis, MO: Mosby Publishing

Visiting Professor—Invited Speaker—Session Chair (Selected)

John Thomas Langell, MD, PhD, MPH, MBA

February 21, 2019

- 2019 Visiting Professor and Keynote Speaker, “Creating an interdisciplinary healthcare transformation program”, Virginia Commonwealth University, Department of Surgery.
- 2019 Keynote Speaker, “Market-creating Innovations in Global Health”, National Global Health Symposium, Virginia Commonwealth University
- 2019 Keynote Speaker, “Accelerating Healthcare Innovation through academic-Industry Partnerships, Silicon Slope Summit, Salt Lake City, UT
- 2018 Visiting Professor, University of Beijing, Capital medical Hospital, “Transforming Healthcare Delivery Through Innovation”, Beijing, China
- 2018 Session Chair-Healthcare Innovation, West African Extreme Affordability Conference, Kpong Ghana
- 2017 Expert Panelist, World Health Organization Medical Device Summit, Geneva, SUI
- 2017 Keynote Speaker, Stanford Medicine-X 2017, Stanford CA
- 2017 Visiting Professor, National University of Singapore Medical Grand Challenge, Singapore
- 2017 Keynote Speaker, J.P Morgan Innovations in Healthcare Summit, Salt Lake City, UT
- 2017 Visiting Professor, “Creating an Innovative and Adaptable Interdisciplinary Ecosystem”, University of Hawaii School of Medicine Innovation Center, Honolulu HI
- 2017 Keynote Speaker, Innovation Expo, ”Inspire, Imagine and Inform”, Vacaville Chamber of Commerce
- 2017 Session Moderator, “Innovating in the medical Device Space”, Translational Medicine Symposium, Salt Lake City, Utah
- 2016 Keynote Speaker, Park City Rotary, “Bench to Bedside and Beyond: Creating the Medical Innovator of the Future”, Park City, Utah
- 2016 Keynote Speaker, “Global Health Innovation: Creating Cost-effective and Sustainable Healthcare Solutions for the Global Population”, Department of Public Health, University of Utah
- 2016 Session Moderator, Thin AIR Innovation: Innovation in the Life Sciences, Governor’s Office of Economic Development, Park City, Utah

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- 2016 Session Chair, “Global Surgery”, Academic Surgical Congress, Feb 2016
- 2015 Keynote Speaker, Medical Product Outsourcing Summit, “Accelerating Medical Technology commercialization: The Critical Role of Academic-Industry Partnerships”, Park City, UT
- 2015 Session Chair, “Breast and Endocrine Research”, Academic Surgical Congress, 2015
- 2014 Invited Speaker, “mHealth and the Challenge of Physician Adoption”, International mHealth Summit, Washington DC
- 2014 Keynote Speaker, “Top 10 Lessons Learned by Successful Innovators”, Midwest Medical Device Conference, Milwaukee MN
- 2014 Keynote Speaker, “Lean Healthcare Operations and Organizational Innovation”, Quintessential Congress, Denver CO
- 2014 Surgical Grand Rounds, “University Faculty resources for Medical Technology Innovation”, University of Utah
- 2014 Visiting Professor, “Creating Sustainable Medical Innovations for Resource Poor Regions”, University of Hawaii School of Medicine, Honolulu HI
- 2014 Keynote Speaker, Utah Winter Operations Conference, “Medical Innovations and Transforming Healthcare Through Lean Operational Initiatives”, Snowbird, UT
- 2014 Presidential Session Speaker, “Digital Medicine”, Academic Surgical Congress, San Diego, CA
- 2014 Keynote Speaker, Translational Medicine Symposium, “Clinical Immersion, a Tool to Identify the Clinical Need for Technology Commercialization”, Salt Lake City, Utah
- 2013 Medicine Grand Rounds, Innovation and Entrepreneurship in the Academic Setting, University of Utah, Salt Lake City, UT
- 2013 Keynote Speaker, Medical Product Outsourcing Summit, “Academic Programs in Medical Device Commercialization: The Critical Role of Industry Partnerships”, Salt Lake City, UT
- 2013 Expert Panelist, European Economic Summit”, Innovation and Commercialization, Utah Governor’s Office of Economic Development

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- 2013 Keynote Speaker, Intellectual Property Forum, “What Academic Faculty Need to Know about Intellectual Property Protection”, Salt Lake City, UT
- 2013 Keynote Speaker, “Identifying the Clinical Problem for Commercialization”, Translational Medicine Symposium, Salt Lake City UT
- 2013 Invited Lecturer, “Developing a Medical Device Innovation Program, An Academic Partnership”, Utah Governor’s Office of Economic Development Citizen Diplomacy Program Lectureship
- 2013 Surgical Grand Rounds, “Creating the future Innovator”, University of Utah
- 2013 Invited Lecturer, Extreme Affordability Summit, “Medical Device Development for Developing regions”, Salt Lake City, UT
- 2012 Invited Speaker, “The Lean Prescription” LEAN Healthcare Operations Summit, Salt Lake City UT
- 2012 Expert Panelist, “Regulatory Device”, Entrepreneurial Faculty Scholars FDA regulatory Forum, Salt Lake City, UT
- 2012 Surgical Grand Rounds Speaker, “BioInnovation”, University of Utah
- 2011 Invited Speaker, “Acute Care Surgery in the Academic Setting-A Debate” Southwest Surgical Congress, Oahu, HI
- 2011 Surgical Grand Rounds Speaker, “The Practice of Medicine in Challenging Environments”, University of Utah
- 2010 Surgical Grand Rounds Speaker, “Healthcare Policy in the United States: An Historical Perspective” University of Utah
- 2009 Surgical Grand Rounds Speaker, “Contemporary Surgical Management of Hyperparathyroidism”, University of Utah
- 2008 Surgical Grand Rounds Speaker, “Gene-Directed Therapy in Surgery”, University of Utah
- 2007 Keynote Speaker, “Medical Support on Mount Everest”, Salt Lake Surgical Society, Salt Lake City, UT
- 2006 Grand Rounds Speaker, “High Altitude Medicine, lessons from the Everest Base Camp”, Santa Clara Valley Medical Center

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- 2005 Surgical Grand Rounds Speaker, "Reaching New Heights in Medicine: The Mount Everest Experience", Stanford University Department of Surgery.
- 2005 Keynote Speaker, "From the Top of the World: Medical Support on Mount Everest" Medicine in Challenging Environments—Pushing the Envelope V Conference, Galveston, TX
- 1997 Visiting Professor, "Transgenic Suppression of the Alpha-Gal Xenotope", Thomas E. Starzl Transplantation Institute, University of Pittsburgh

Competitive Abstracts and Platform Presentations

- 2019 Langell J, Ferraro J, Young M, Mi C, Deng Y, Swensen C, Development of an Automated Digital Surgical Safety Checklist to Reduce Surgical Errors, Academic Surgical Congress, Houston TX
- 2019 Whittle J, Petelenz T, D'Ambrosio T, Langell J, The National Science Foundation I-Corps Program: A Tool to Promote Technology Innovation in Surgery, Academic Surgical Congress, Houston TX
- 2019 Fogg B, Langell J, BioInnovate: Medical Student Experiential Education in Technology Innovation and Entrepreneurship, Academic Surgical Congress, Houston TX
- 2019 Langell A, Pickett T, Mangum C, Chen J, Dodson M, Langell J, Evaluation of a Model to Evaluate the Efficacy of Thermocoagulation on Cervical Coagulative Necrosis, Academic Surgical Congress, Houston TX
- 2019 Rich B, Eisenbeiss A, Brunson J, Langell J, Shaping the Healthcare Innovators of the Future Through Early Education in Medical Innovation, American Medical Student Association, Houston, TX
- 2018 Langell J, Designing High Quality Global Health Technologies, Consortium of Universities for Global Health Conference, New York, NY
- 2018 Langell J, Sixth Sensing—Contact-free Vital Sign Monitoring Using Wi-Fi-based Movement Refraction, West African Extreme Affordability Conference, Kpong Ghana
- 2018 Langell J, UVAC—Development of a Global Solution for Post-Partum Hemorrhage, West African Extreme Affordability Conference, Kpong Ghana July 2018
- 2018 Langell J, Xenocor—A Global Technology Solution for Laparoscopic Surgery, West African Extreme Affordability Conference, Kpong Ghana

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- 2018 Langell J and Fassi B, A Systematic Approach to Global Health Services Innovation, West African Extreme Affordability Conference, Kpong Ghana
- 2018 Thomas S and Langell J, Bench to Bedside: An interdisciplinary approach to global health technology innovation, West African Extreme Affordability Conference, Kpong Ghana
- 2018 Langell J and Pickett T, A Validated Approach to Global Health Technology Innovation, West African Extreme Affordability Conference, Kpong Ghana
- 2017 Langell J, Fassi B, Petelenz T, Innovating The Future of Healthcare, World Health Organization Medical Device Summit, Geneva, SUI
- 2017 Chen J, Pickett T, Langell A, Trane A, Charlesworth B, Loken K, Lombardo S, Langell J, Cinluma: A Novel Thermo-Coagulation Device to Treat Cervical Intraepithelial Neoplasms in Resource Poor settings, Society of American Gastrointestinal and Endoscopic Surgeons, Houston, TX
- 2017 Schwab T, Langell J, Mobile Application Design and Human Factors for Global Health Innovation, Academic Surgical Congress, Las Vegas, NV
- 2017 Langell J and Martin L, Improving On-Time Surgical Starts: The Impact of Implementing Pre-OR Timeouts and Performance Pay, Academic Surgical Congress, Las Vegas, NV
- 2017 Schwab T, Fassi B, Patel R, Langell J, The Importance of Design Validation in Global Health Surgical Innovation, Academic Surgical Congress, Las Vegas, NV
- 2017 Weisner E, Martin L, Peche W, Langell J, Impact of Narcotic Analgesic Use on HIDA Scan-based Gallbladder Ejection Fractions, Academic Surgical Congress, Las Vegas, NV
- 2017 Weisner E, Martin L, Peche W, Langell J, Variations in HIDA Scan-based Gallbladder Ejection Fractions Over Time in Suspected Biliary Dyskinesia, Academic Surgical Congress, Las Vegas, NV
- 2017 Langell J, Price R, Development an Ultra Low-Cost Laparoscopic Platform for Global Surgery, Academic Surgical Congress, Las Vegas, NV
- 2016 Chen J, Pickett T, Langell A, Trane A, Charlseworth B, Loken K, Lombardo S, Langell J, Industry-Academic Partnerships, A Trans-Disciplinary Approach to Accelerate Surgical Innovation, Academic Surgical Congress, Jacksonville, FL

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- 2016 Elder C, Loftus P, D'Ambrosio T, Langell J, Enhancing Medical Education and Innovation Through Industry Mentors and Experiential Programs, Academic Surgical Congress, Jacksonville, FL
- 2016 Madsen S, Thorup K, Baczuk J, Patwari N, Barton R, Langell J, Development of a contact-free RF-based respiratory sensor: Results of a Clinical Pilot Study, Academic Surgical Congress, Jacksonville, FL
- 2016 Langell J, Evidence Based Medicine: The Low Hanging Fruit of Lean Healthcare Implementation, Academic Surgical Congress, Jacksonville, FL
- 2016 Langell J, Bledsoe A, Vijayakumar S, Anderson T, Zawalski I, Zimmerman J, Standardized Implementation of National Practice Guidelines To Reduce Waste and Optimize Patient Value, Academic Surgical Congress, Jacksonville, FL
- 2016 Barneck M, Rhodes N, De La Presa M, Poursaid A, Nourian M, Firpo M, Langell J, Violet 405-Nm Light A Novel Therapeutic Agent Against Common Pathogenic Bacteria, Academic Surgical Congress, Jacksonville, FL
- 2015 Le Ber J, Shipman JP, Van Der Volgen J, Mowdood A, Stark L, Langell J, "Accepting No Limits: Librarians Lead Sex and Gender Differences Research Efforts." 2015 National Medical Library Association Annual Meeting and Exhibition, May 19, 2015, Austin, TX.
- 2015 Casucci T, Shipman JP, Langell J, McIntyre M, Altizer R. "Opening New Doors: Innovation Partners Unite." Presented at the 2015 VentureWell Conference, Washington, D.C.
- 2015 Van Der Volgen J, Shipman JP, Lake E, Langell J, "Lean Process Improvement and Innovation Demystified." National Medical Library Association, Continuing Education Program, Austin, TX
- 2014 Elder C, Loftus P, Langell J, Bench-to-Bedside: A Model Program for Medical Device Design, American Association of Medical Colleges Meeting, Philadelphia, PA
- 2014 Shipman J, Casucci T, Langell J, Altizer R, "Information Future: Partnering with Medical Therapeutic Devices & Apps Innovations." Presented at the 2014 Annual Meeting of the National Medical Library Association, Chicago, IL

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- 2014 Shipman P, Langell J, Rethlefsen M, Altizer R, Lee V, “The Synapse Plus – Transformed Space Invites Innovation, Research, Teaching and Learning to Transpire Within a Health Sciences Library.” Learn Serve Lead 2014: The American Association of Medical Colleges Meeting, Chicago, IL
- 2014 Casucci T, Shipman JP, Langell J, Altizer R, “Beyond Borders: Partnering with Medical Therapeutic Devices & Apps Innovations” Special Libraries Association, Vancouver, CAN
- 2014 Casucci T, Shipman JP, Langell J, Altizer R, “Convergence and Collaboration: Partnering with Medical Therapeutic Devices & Apps Innovations”, Mid-continental Chapter of the Medical Library Association
- 2014 Loftus P, Langell JT, Shipman J, Hitchcock R, Petelenz T, “Creating a Benchmark Medical Technology Entrepreneurship Competition”, National Collegiate Inventors and Innovators Alliance (NCIIA) Open, San Jose, CA
- 2014 Langell JT, Hitchcock, Price R, Petelenz, T, “Innovating for Resource Poor Regions”, National Collegiate Inventors and Innovators Alliance (NCIIA) Open, San Jose, CA
- 2014 Langell JT, Hitchcock R, Petelenz T, “Teaching Innovation and Entrepreneurship: A Multidisciplinary Approach”, National Collegiate Inventors and Innovators Alliance (NCIIA) Open, San Jose, CA
- 2013 Agutter J, Hitchcock R, Langell JT, Broadhead K, Petelenz T, “Design and Engineering Clinical Immersion Program, National Collegiate Inventors and Innovators Alliance (NCIIA) Open, Washington D.C.
- 2011 Langell J, “Creating the Optimal Executive Management Council”, United States Air Force Health Services Executive Management Conference, Atlanta, GA
- 2009 Le DK, Rusin W, Langell JT, “Postoperative Antibiotics Use in Non-Perforated Appendicitis”, Southwest Surgical Congress, Sand Diego, CA
- 2009 Langell, JT, “The Dexon-Window: A Series Report of a New Method for Control of Enteroatmospheric Fistulas”, Southwest Surgical Congress, Sand Diego, CA
- 2007 Langell, JT, Jennings, R, Clark, J, Ward, J, “Pharmacological Countermeasures for the Prevention and Treatment of Toxic Radiation Exposure in Space Flight”, Aerospace Medical Association Meeting, Washington, DC

February 21, 2019

- 2003 Langell JT, Gilmore, S, "Aeromedical Status of an Air Transport Pilot with Suspected Multiple Sclerosis", Aerospace Medical Association meeting, San Antonio, TX
- 1998 Langell JT, Reiss GR, Blankenhorn, EP, Kresh, JY, "3-Azido-3-Deoxythymidine Decreases Cell Surface Expression of the Alpha-1,3 Galactosyl Carbohydrate on Porcine Endothelial Cells", American Society of Transplant Physicians meeting, Chicago, IL
- 1998 Reiss GR, Langell JT, DiSesa VJ, Procko, DJ, "Rescue from Lethal Total Body Irradiation by Allogenic Marrow Stromal Cells", American College of Surgeons meeting, Chicago, IL
- 1998 Langell JT, Reiss GR, DiSesa VJ, "Antisense ribozyme degradation of alpha-1,3-galactosyltransferase mRNA: A Possible Mechanism for Reduction of Alpha-1,3Gal". American Society of Transplant Surgeons meeting, Chicago, IL
- 1998 Langell JT, Samuels LE, DiGregoria GJ, Barbieri EJ, Ferko AP, Pace J, Kozac JL, Mahoney T, Kutalek SP, Morris RJ, Brozena SC, "Amiodarone Distribution in Explanted Hearts from Cardiac Transplant Recipients", The Society of Heart and Lung Transplantation Annual Meeting, Boston MA
- 1998 Langell JT, GR, Strong J, Kresh JY, Blankenhorn EP, "Suppression of the alpha-1,3-Galactosidase Epitope by Golgi Expression of a Coffee Bean alpha-1,3-Galactosidase Transgene", American Society of Transplant Physicians Annual Meeting, Chicago, IL
- 1997 Langell JT, Strong JD, Kresh JY, Blankenhorn EP, "The Pig Kidney Epithelial Cell Line LLC-PK1 May Not be a Suitable Model for Characterizing Xeno-Antigens in Hyperacute Rejection", International Congress for Xenotransplantation, Nante, France
- 1997 Langell JT, Reiss GR, Blankenhorn EP, Kresh JY, "The Effects of Mycophenolic Acid and 3-Azido-3-Deoxythymidine on Porcine Endothelial Expression of the Alpha-Galactosyl Carbohydrate", International Congress for Xenotransplantation, Nante, France
- 1997 Langell JT, Strong J, Kresh JY, Blankenhorn, EP, "Alpha-1,3-Galactosidase Transgene Suppression of the Alpha-Gal Xenotope", International Congress for Xenotransplantation Nante, France
- 1997 Langell JT, Strong J, Kresh VJ, Blankenhorn EP, "Intrinsic Suppression of Alpha-1,3-Galactosyl Xenogeneic Epitopes on Mammalian Cells by Golgi-

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- Targeted Expression of a Coffee Bean Alpha-1,3-Galactosidase Transgene”, Allegheny University Graduate Research Symposium
- 1997 Verma A, Langell JT, Kresh JY, “Isolation and Maintenance of Adult Rabbit Cardiac Myocytes In Vitro”, Allegheny House Staff Research Symposium
- 1997 Reiss GR, Mohiuddin MM, Langell JT, Blankenhorn EP, DiSesa VJ, “The Use of Polymerase Chain Reaction to Detect Microchimerism after Intrathymic Injection in Experimental Heart Transplantation”, Society of University Surgeons Research Symposium, Chicago, IL
- 1997 Reiss GR, Mohiuddin MM, Langell JT, Blankenhorn EP, DiSesa VJ, “PCR to Detect Microchimerism in Experimental Heart Transplantation After Intrathymic Pretreatment: Evidence That Donor Cells Do Not Re-enter the Thymus”, Allegheny House Staff Research Symposium.
- 1996 Lehmann J, Langell JT, Sluck JM, Sinclair SH, “5-Hydroxytryptophan Induction of Intraocular Hypotension”, ARVO Annual Meeting
- 1995 Langell JT, Blankenhorn EP, “Studies of Anti-Porcine Xenoreactive Antibody in Human Patients”, Medical College of Pennsylvania and Hahnemann University Graduate Research Symposium
- 1994 Langell JT, Lehmann J, “Serotonin Induced Ocular Hypotension in Wistar Rats”, Hahnemann University, Medical Research Symposium
- 1993 Langell JT, Lehmann J, “The Effect of 5-HTP on Intraocular Pressure in Wistar Rats”, Eastern Student Research Forum, Miami FL
- 1993 Starkman S, Langell JT, “The Interaction of Neurologist with Emergency Physicians: A Survey of Emergency Medicine Programs”, The Academy of Emergency Physicians, Detroit, MI

Competitive Abstract Submitted/Pending

- 2018 Fogg B, Langell J, Transforming Medical Student Education Through Interdisciplinary and Experiential Education to Foster Medical Innovation. Submitted to the 2019 Academic Surgical Congress, Houston, TX
- 2018 Langell A, Pickett T, Dodson M, Mangum C, Chen J, Wallace D, Langell J, Clinical trial of Cervical Thermo-Coagulation on Cervical Epithelial Coagulative Necrosis, Submitted to the 2019 Academic Surgical Congress, Houston, TX
- 2018 Langell J, D’Ambrosio T, Petelenz T, The National Science Foundation I-Corps Program: An Important Resource to Promote Technology

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Innovation in Surgery, Submitted to the 2019 Academic Surgical Congress, Houston, TX

2018 Langell J, Young MJ, Ferraro J, Development of an Automated Digital Surgical Safety Checklist to Reduce Surgical Errors, Submitted to the 2019 Academic Surgical Congress, Houston, TX

2018 Langell J, Walker S, Pickett T, Accelerated Medical Technology Development and Commercialization Using The DesignBox™ Process, Submitted to the 2019 Academic Surgical Congress, Houston, TX

INTELLECTUAL PROPERTY AND COMMERCIALIZATION ACTIVITIES

Patent Filings

Langell J, Johnson P, Fogarty M, Madsen S, Self-Contained Port Closure Trochar and Method of Use, United States Patent and Trademark Office Utility Patent Application, Filed April 25, 2018 Publication 20280303470

Langell J, Brooks L, Medical Boroscopes and Related Tip Assemblies, United States Patent and Trademark Office Utility Patent Application, Filed April 13, 2018 Publication 20180228344

Langell J, Straubhar A, Keenan K, Pickett T, Lackey J, Burton J, Monarch Intraperineal heating device, United States Patent and Trademark Office Provisional Patent, 04/2018

Langell J, Holman P, Broderick S, Eyre Z, Goates T, Peiper J, Uterine Contraction Device, United States Patent and Trademark Office, Utility Patent Filing 2016/62317028

Langell J, Gardner L, Fannesbeck A, Colposcopy Compatible Low-Profile Speculum, United States Patent and Trademark Office, Utility Patent Filing, 2016

Langell J, Brooks L, Medical Boroscopes and Related Methods and Systems, United States Patent and Trademark Office Utility Patent Granted # 9943214

Langell J, Holman P, Broderick S, Eyre Z, Goates T, Peiper J, Uterine Contraction Device, World Intellectual Property Organization. Patent No. WO/2017/173232 1A

Langell J, Young, J, Ruan, T, Passman J, O'Neil KJ, Nanoparticle based radiopaque marking device, United States Patent and Trademark Office Utility Patent Granted #9861449

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Langell J, Johnson P, Fogarty M, Madsen S, Laparoscopic Port Automatic Closure Device, United States Patent and Trademark Office Utility Patent Granted # 9962145

Langell J, Johnson, P, Fogarty, M, Madsen, S, Laparoscopic Port Automatic Closure Device, WIPO, Patent Cooperation Treaty International Filing

Langell J, Bowen C, Nambi, M, Mobile Pneumoperitoneal Pressure Device, United States Patent and Trademark Office, Utility Patent Filing 2016

Langell JT, Yates, B, K-wire modification with moveable fixation/anti-migration adapter. United States Patent and Trademark Office, Provisional Patent filing.

Prockop D, Reiss R, Langell J, Stromal Cell Use. World Intellectual Property Organization. Patent No. WO/2000/024261

Prockop D, Reiss R, Langell J, Utilization of Marrow Mesenchymal Stem Cells in Bone Marrow Transplantation. United States Patent and Trademark Office Patent Publication No. 2008/0102058 A1

Licensed Patent Filings

Langell J, Straubhar A, Keenan K, Pickett T, Lackey J, Burton J, Monarch Intraoperative heating device—Licensed to Clinical Innovations Incorporated, 2018

Langell J, Holman P, Broderick S, Eyre Z, Goates T, Peiper J, Uterine Contraction Device— License Option to Clinical Innovations Incorporated, 2017

Langell J, Brooks L, Medical Boroscopes and Related Methods and Systems—Licensed to Xenacor Incorporated, 2013

Langell J, Young, J, Ruan, T, Passman J, O’Niel KJ, Nanoparticle based radiopaque marking device—License Option to Control Medical LLC, 2011

Langell JT, Johnson P, Fogarty M, Madsen S, Laparoscopic Port Automatic Closure Device—Licensed to 6S Medical LLC, 2013

Prockop D, Reiss R, Langell J, Utilization of Marrow Mesenchymal Stem Cells in Bone Marrow Transplantation—Licensed to Prochymal Incorporated, 1999

Software Copyright

Software-Based Platform for Patient-Centered Perioperative Care Management (2014)

Software application: Universal Electronic Health Record for Emergency Care (2014)

Software application: Advanced Surgical Safety System (2018)

Company Formation

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Cure Medical LLC, Founding Partner 2017

Sixth Sensing LLC, Founding Partner, 2017

Light Line Medical Incorporated (formerly Veritas Medical LLC), Founding Partner 2014

6S Medical, Founding Partner, 2013

Xenocor Inc, Founding Partner, 2012

OTHER ACTIVITIES

Membership in Professional Societies (Present and Past)

American College of Healthcare Executives

Association for Academic Surgery

American College of Surgeons

Aerospace Medical Association

Space Medicine Association

Southwestern Surgical Congress

Salt Lake Surgical Society

Utah Medical Association

American Association for the Advancement of Science

American Medical Association

American Military Surgeons of the United States

Alpha Omega Alpha Honors Society

Sigma XI Honors Society

Society for Experimental Medicine

Gold Key Honor Society

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Policy Activities

- 2017 BioUtah, Utah Life Science Industry Policy Committee, Salt Lake City Utah
- 2014 Brookings Institute for Healthcare Reform, Working Group for National Institutes for Health Study on the Future of FDA Regulatory Strategy and Medical Device Development
- 1993 American Medical Association Resolution Authorship. Smoking Van on Public Trains (Passed AMA House of Delegates)
- 1992 American Medical Association Resolution Authorship. Cadaveric Organ Procurement

Journal Referee/Reviewer (selected)

Acta Astronautica

Aviation, Space and Environmental Medicine

Journal of Infection

Journal of the American College of Surgeons

Internal Journal of Healthcare management

Interests and Hobbies

Sailing, Competitive Horse Jumping, Skiing, Ironman Triathlon and Distance Running

APPENDIX

BRIEF SUMMARY OF SELECTED SIGNIFICANT LEADERSHIP ROLES

Vice Dean, University of Utah School of Medicine and Executive Director, Center for Medical Innovation, University Of Utah, 2010-Present

I founded the Center for Medical Innovation, a university strategic initiative designed to partner cross-disciplinary university faculty, student and resources with state government economic initiatives and commercial industry partners. The Center creates and facilitates multidisciplinary collaborative programs between the Health Sciences, the School of Business, the College of Engineering, the College of Law, the Design School and the Technology Commercialization Office. I created an integrated program that allow for optimal development and commercialization of healthcare technologies, digital medical

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therapeutics and medical applications. Working closely with the Governor's Office for Economic Development, commercial industry partners and philanthropy I established a unified strategy for university resource utilization and development. I also established long-term programmatic funding through philanthropic, institutional, commercial and state resources for sustainable program support. Additionally, I established benchmark cross-disciplinary educational programs in technology and digital health development and commercialization for all levels including undergraduate and graduate students, faculty and commercial enterprises. Each program covers a systematic multidisciplinary approach to the development process including ideation methodology, intellectual property, regulation, prototyping and design controls, stakeholder and market analysis, business plan development, strategy and capital acquisition. To date the Center has created seven formal education programs and competitions spanning more than eight Colleges and Schools and over 60 industry partnerships. Over the past seven years our programs have resulted in the creation of over 60 start-up ventures, more than 180 intellectual property filings and numerous licensing agreements. I have served as PI or Co-I on multiple NSF and NIH program grants for the Center, including its I-Corps™ Site program that has engaged and trained 120 faculty inventor-entrepreneurs over the past four years resulting in over \$20 million in commercial spinout funding. Focusing on financial sustainability, I raised over \$29 million in philanthropic support for Center programs.

The Center for Medical Innovation played a significant role in the University of Utah's recognition as the #1 University for Aspiring Entrepreneurs and is credited by the Milken Institute as a critical resource in the University of Utah becoming #1 University in technology commercialization. In all, CMI has supported the development over 150 new technologies and more than \$20 Million in commercialization funding.

I am currently focused on growing the Center into the Institute for Healthcare Innovation. The Institute will be composed of five centers 1) The Center for Patient Safety and Simulation 2) The Center for Medical Technology Innovation 3) The Center for Digital Health Innovation 4) The Center for Healthcare Leadership 5) The Center for Global Health Innovation.

Co-Director, Health Sciences Lean Healthcare Operations Program 2012-2015

I established the strategic initiative to implement system wide LEAN operational management and process improvement strategies for Health Sciences at the University of Utah as a means of improving the quality of patient care delivery and integrating service lines while reducing healthcare costs through improved efficiency and waste reduction. My areas of responsibility included development of external partnerships, creation of a LEAN education and consultation programs for faculty and senior administration and organizational change management strategies. Operationally, I co-directed and provide oversight for LEAN implementation of university surgical services and implementation of quality focused standardized care pathways. I implemented sustainable changes that resulted in improved patient safety and substantial annual cost reductions. The effort created a LEAN culture change at the institution, trained over 200 physician leaders on

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Lean-Six Sigma concepts through and generated projected annual savings of over \$30 million. As a key member of the University of Utah leadership team, my efforts directly contributed to University of Utah Health achieving the Vizient #1 in quality award twice, the US news and world report #1 ranked Hospital in Utah and a nationally recognized low-cost leader in healthcare delivery.

Director of Lean-Six Sigma Operations Education Implementation, National Veterans Administration Healthcare Centers of Innovation, 2015-Present

The National VHA Centers for Innovation (COI) is composed of five sites serving the entire geographic network of VA healthcare facilities. As the Lean Six Sigma operations expert within the COI, I developed and implemented a new program to support Lean-Six Sigma operations education and consultative services. Operating out of the Salt Lake City Veterans Administration healthcare program I lead a team of process engineers, physicians and nurses to support implementation VA National Lean-Six Sigma initiative.

Founding Partner Xenocor Inc, 2012-Present

Xenocor is a medical device incubator with expertise in intellectual property strategy, FDA regulatory processes, prototyping, clinical trials and business development. The company formed around University of Utah technology developed in my laboratory. The two current devices managed by the company are an ultra-low cost, lightweight disposable laparoscope for minimally invasive surgery and a portable, low cost operating microscope. Both technologies have significant markets worldwide and allow the transition of advanced, minimally invasive surgical techniques globally. The core technology is the Xenoscope™ that is providing a disruptive low cost and high quality surgical imaging solution. The device has achieved CE-Mark, is FDA cleared and in sales. It has received numerous innovation awards including Wall Street Journal recognition. <https://www.wsj.com/articles/new-low-cost-surgical-tool-could-help-patients-in-third-world-1474855620>

President and Vice President, American College Of Surgeons (Utah) 2010-2013

The Utah Chapter of the American College of Surgeons (ACS) represents over 500 surgeons and 2.9 million potential surgical patients in the State of Utah. Our mission is to ensure the practice of high-quality surgical care within the state and advocate for patient centered safety, healthcare access and affordability initiatives. As both President and Vice President, I provided strategic guidance and administrative oversight for the state ACS chapter and directed state-level surgical education and collaborative research programs. I worked closely with patient advocacy organizations, state and national medical organizations, the Governor's office and state legislature on policy initiatives and legislative actions to improve care and address healthcare issue that impact the citizens of Utah. I also worked with the ACS national office to provide representation of Utah surgeons and citizens regarding national-level healthcare issue and national legislative healthcare policy and advocacy.

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Chief of Surgery, Salt Lake City Veterans Administration Hospital, 2007-2015

The George E. Wahlen Veterans Administration Hospital is a 168-bed tertiary medical center. The division of General Surgery is composed of a large group of specialty surgeons, surgical residents, mid-level providers, nurses and administrative support specialist. Collectively, we provide care for complex patient management in all general surgical disciplines. As Chief of Surgery, I led the restructuring and quality improvement efforts of the service and creation of quality care pathways. During my tenure I have strengthen the critical relationship with the University of Utah Department of Surgery, ensured surgical care practices met appropriate standards of care and revamped the general surgical curriculum for residents and medical students. I obtained margin of excellence salary funding to recruit top surgical specialist and created an integrated and transparent quality review process. As a result, surgical outcomes and key performance metrics for the division of general surgery soared from a statistically poor outlier status to a benchmark national program of surgical excellence. As Chief of Surgery I was responsible for recruitment, budgetary management, faculty practice compliance and development, resident curriculum development and education, surgical quality and administrative management of surgical programs and employees.

Director of Acute Care Surgery, University of Utah Healthcare, 2006-2012

The Acute Care Surgical Service at the University of Utah provides comprehensive advanced surgical care for patients presenting to the University of Utah Emergency Department and non-directed inter-hospital transfers of urgent and emergent complex surgical patients from a four state region. I was recruited to the University of Utah Department of Surgery to develop the Acute Care Surgical Service as a new program designed to improve care for urgent and emergent surgical patients while improving operational efficiency of elective surgical practices. As service director I created operational guidelines and developed standardized processes to improve the quality of care and optimize revenue collections for services performed. As a result, over my first year as Director I improved billing and collections for urgent and emergent surgical patients increased six-fold.

CEO (Commander), Air Force Healthcare Facilities, 2006-2018

I previously served in the role of medical facility chief executive officer (commander) for a total of 11 years at four separate Air Force Reserve medical facilities. Most recently as the CEO of the largest medical facility in the Air Force Reserve. I was responsible for the leadership and management of approximately 500 physicians, nurses, dentists, optometrists, administrators and technicians. In my leadership role, I managed a large operational budget, establish a strategic pathway to accomplish mission requirements, provided guidance for alignment and oversight of medical care programs and secured additional funds for facility construction and program development. The organization structure is very similar to private healthcare facilities, providing quality comprehensive healthcare, ensuring qualification and credentialing of providers, establishing training programs for personnel and providing comprehensive management and support.

John Thomas Langell, MD, PhD, MPH, MBA

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