

- Christopher P. Cheng, Ph.D. -
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Summary

- Entrepreneur, executive, board member, investor, R&D leader, academic-corporate partnerships, business development
- Expertise in biomechanics, medical imaging, FEA, statistics, anatomy/physiology, medical device design, preclinical/clinical studies, regulatory strategy, Nitinol, manufacturing, verification & validation
- Government contracting for aerospace industry (NOAA, NASA, DoD, USDA); Top Secret US government clearance
- Author of 25+ patents, patent applications, and invention disclosures
- Advising of undergraduate, master's, doctoral, and post-doctoral students; grant writing, teaching
- Author of 55+ journal, 75+ conference, 1 book, 17 book chapter publications, PROSE book award nominee
- Seasoned conference/session organizer, podium presenter, and invited speaker
- Grant funding of \$16.805M, with \$4.115M as Principal Investigator
- Board member of Duke University Pratt School of Engineering and American Leadership Forum (Silicon Valley)

Education

Stanford University	Stanford, CA	Ph.D. Mechanical Engineering (2002)
Stanford University	Stanford, CA	M.S. , Mechanical Engineering (2000)
Duke University	Durham, NC	B.S.E. , Biomedical and Electrical & Computer Engineering (1998)
University of Oxford	Oxford, UK	Visiting Student, Economics (1996)

Professional History

- 2018 – Present** **Global Science & Technology, Inc.**
President/CEO (2020 – Present)
Vice President, Medical Division (2018 – Present)
- Government contracting for NOAA, NASA, DoD, state & local; earth science, remote sensing, outreach, IT
 - Cardiovascular biomechanics and device durability consulting for the medical device industry
 - From 2020 to 2022, increased revenue by 40%, operating income by 250%, EBITDA by 140%
- 2006 – Present** **Stanford University, Department of Surgery**
Adjunct Professor (2017 – Present)
Consulting Professor (2016 – 2017)
Consulting Associate Professor (2012 – 2015)
Consulting Assistant Professor (2006 – 2011)
- Director of Vascular Intervention Biomechanics & Engineering (VIBE) Lab – Study biomechanical interactions between cardiovascular system and medical devices using imaging, geometric modeling, and quantification methods
- 2019 – Present** **Cardiovascular Implant Durability Inc.**
Founder and President
- Non-profit dedicated to understanding and improving durability of cardiovascular devices
- 2019 – Present** **Reyes Wine Group, LLC**
Business and Technical Advisor
- Advisor to the owner on business development, consumer purchasing behavior, climate change
- 2018** **University of Oxford**
Visiting Fellow/Professor
- Sabbatical – Visiting Fellow at Exeter College, Visiting Professor in Vascular Surgery and Cardiovascular Medicine
 - Wrote *Handbook of Vascular Motion*, organized symposium series on medical entrepreneurship, research
- 2002 – 2018** **MD CTO Consulting, LLC**
Owner
- Consulting for medical imaging, anatomy/physiology, biomechanics, engineering testing, device design, regulatory
- 2012 – 2017** **Kōli, Inc.**
Co-Founder and CEO
- Minimally-invasive treatment for gallstone disease; led company from founding to first-in-human trial
 - Principal Investigator for NSF SBIR Phase I, IB, II, II-REU, II-CAP, II-TECP, II-CC, II-SECO awards

- 2011 – 2012** **Nitinol Devices & Components**
Entrepreneur in Residence
- Emerging opportunities
- 2011** **Tendyne Medical, Inc.**
General Manager
- Minimally-invasive treatment for mitral regurgitation
- 2007 – 2010** **NovoStent Corporation**
Director of Technology
- Directed end-to-end R&D for peripheral vascular stent platform
 - Led stent R&D efforts to achieve clinical trial approval, CE-Mark, and establish FDA pre-IDE requirements
- 2005 – 2007** **Johnson & Johnson, NDC and Cordis**
Principal Engineer/Program Manager
- Founder and director of Cordis Biomechanics Group
 - Cardiovascular device design for Advanced Device Concepts Group
- 2002 – 2005** **Stanford University, Mechanical Engineering and Pediatrics**
Research Associate
- Hemodynamic quantification at rest and during exercise for peripheral vascular disease and congenital heart disease
 - RESISStent Program: Consortium with medical device industry to describe the superficial femoral artery environment
- 1998 – 2002** **Stanford Cardiovascular Biomechanics Lab**
Ph.D. Student
- Quantification of hemodynamic conditions in the abdominal aorta at rest and during exercise (Advisor: Charles Taylor)
- 1993 – 1998** **Internships and Undergraduate Research**
Intern/Research Assistant
- Global Science & Technology, Inc. – Neural network software development for satellite and weather balloon data
 - Swales Aerospace – Mechanism design for 2nd and 3rd Servicing Missions of the Hubble Space Telescope
 - Duke Orthopedics Biomechanics Lab – Neck muscle medical image processing and geometric modeling
 - NASA Goddard Space Flight Center – Contingency analysis for 1st Servicing Mission of the Hubble Space Telescope

Board Memberships

- Industry: Argus Cognitive (2021-present), MedRes (2021-present), Pinnacle OZ Fund VIII (2021-present), GST (2020-present), The Power Rank (2011-present), Kōli (2012-2017), 480 Biomedical (2012-2013), Tendyne Medical (2011-2012)
- Academic: Duke University, Pratt School of Engineering (2018-present)
- Non-Profit: American Leader Forum – Silicon Valley (2021-present), Cardiovascular Implant Durability (2019-present), East Palo Alto Boxing Club (2012-2016)

Awards and Honors

- *Handbook of Vascular Motion* nominated by Elsevier for PROSE book award (2019)
- Best Paper Award at American Association of Wine Economists Conference (2019)
- Medical Research Council, Expert-In-Residence, University of Oxford (2018)
- Fannie Mitchell Expert-In-Residence, Duke University (2015)
- Standards of Leadership Award, Johnson & Johnson (2006)
- First Place of Ph.D. competition at ASME Summer Bioengineering Conference (2001)
- Whitaker Fellow, The Whitaker Foundation (1998-2002)

Other Accomplishments & Skills

- *Boy Scouts of America* – Eagle Scout with Gold Palm; Order of the Arrow
- *Martial Arts* – Black Belt in Tang Soo Do; Kung-Fu training at The Shaolin Temple of China; Boxing
- *Foreign Language* – Fluent in Mandarin Chinese
- *Wine* – Certified Specialist of Wine (CSW) through the Society of Wine Educators; Technical advisor for Martin Reyes' Master of Wine research paper; Wine producer, lecturer, consultant, buyer, and judge; Founder and lecturer of Stanford Wine Club and Stanford Viticulture Course

Journal Publications

In Preparation

- Suh G, Bondesson J, Zhu YD, Nilson MC, Roselli EE, **Cheng CP**, “Ascending Aortic Endograft and Thoracic Aortic Deformation After Ascending Thoracic Endovascular Aortic Repair,” *Journal of Endovascular Therapy*, accepted
- **Cheng CP**, Suh G, Jalaie H, Barbati ME, “Stent deformations in the common iliac and iliofemoral veins as a result of hip flexion and extension,” *Journal of Vascular Surgery: Venous and Lymphatic Disorders*, accepted
- Bondesson J, Suh G, **Cheng CP**, “Cardiac-induced Helical Deformation of Thoracic Aorta and Endografts After Thoracic Endovascular Aortic Repair of Type B Dissections,” *Journal of Endovascular Therapy*, submitted
- **Cheng CP**, Suh G, Moainie SL, Patel HJ, Stern JR, Szeto WY, “Pulsatile Deformations of a Conformable Descending Thoracic Aortic Endograft in Aneurysm, Dissection, and Transection TEVAR Patients,” *Journal of Endovascular Therapy*, submitted
- **Cheng CP**, Bondesson J, Hegde S, Acuero MT, El-Said HG, “Impact of Stenting on Patent Ductus Arteriosus Morphology and Pulsatile Deformations,” in preparation
- Kwiecinski J, Uberoi R, Mohammed H, **Cheng CP**, You Z, “*In Vitro* Quantification of Stent-Graft Behavior During ch-TEVAR,” in preparation
- Lee S, Karla K, Redpath B, Bernheim A, Little B, Brewster L, Shaw L, Arya S, “Evaluation of Peripheral Calcium Score as a Measure of Peripheral Arterial Disease Burden and Amputation Risk,” in preparation

Published

- 1) Suh GY, Frakes D, Kamali R., **Cheng CP** (2022) “Boundary Conditions and Long-Term Implantation Effects with Cardiovascular Nitinol Implants,” *Shape Memory and Superelasticity*, 8(2): 85-97, DOI: 10.1007/s40830-022-00376-z
- 2) Nagaraja S, Paranjape HM, **Cheng CP** (2022) “Durability of Nitinol Cardiovascular Devices,” *Shape Memory and Superelasticity*, 8(2): 4-44, DOI: 10.1007/s40830-022-00370-5
- 3) Ullery BW, Suh G, Thompson P, Lee JT, Holden A, Dalman RL, **Cheng CP** (2022) “Impact of Renal Chimney Intra-aortic Stent Length on Branch and End-stent Angle in Chimney Endovascular Aneurysm Repair and Endovascular Aneurysm Sealing Configurations,” *Vascular*, 31(2): 234-243, DOI: 10.1177/17085381211059978
- 4) Bondesson J, Suh G, Dake MD, Lee JT, **Cheng CP** (2021) “Influence of Thoracic Endovascular Aortic Repair on True Lumen Helical Morphology in Type B Dissections,” *Journal of Vascular Surgery*, 74(5): 1499-1507
- 5) Kwiecinski J, **Cheng CP**, Uberoi R, Mohammed H, Hempel P, Degel C, You Z (2021) “Thoracic Aortic Parallel Stent-Graft Behaviour When Subjected to Radial Loading,” *Journal of the Mechanical Behavior of Biomedical Materials*, 118: 104407
- 6) Suh G, Bondesson J, Zhu YD, Lee JT, Dake MD, **Cheng CP** (2021) “Multiaxial Pulsatile Dynamics of the Thoracic Aorta and Impact of Thoracic Endovascular Repair,” *European Journal of Radiology Open*, 8: 100333
- 7) Tran K, Suh GY, Mouglin J, Haulon S, **Cheng CP** (2021) “Respiratory-induced Changes In Reno-visceral Branch Vessel Morphology Following Fenestrated Thoraco-abdominal Aneurysm Repair With the BeGraft Balloon Expandable Covered Stent,” *Journal of Vascular Surgery*, 74(2): 396-403
- 8) Bondesson J, Suh G, Lundh T, Dake MD, Lee JT, **Cheng CP** (2021) “Quantification of True Lumen Helical Morphology and Chirality in Type B Aortic Dissections,” *American Journal of Physiology – Heart and Circulatory Physiology*, 320: H901-H911
- 9) Stern JR, **Cheng CP**, Colvard BD, Paranjape H, Lee JT (2021) “The Triple-Wire Technique for Delivery of Endovascular Components in Difficult Anatomy,” *Annals of Vascular Surgery*, 70: 197-201
- 10) **Cheng CP**, Dua A, Suh G, Shah RP, Black SA (2020) “The Biomechanical Impact of Hip Movement on Iliofemoral Venous Anatomy and Stenting for Deep Venous Thrombosis,” *Journal of Vascular Surgery: Venous and Lymphatic Disorders*, 8(6): 953-960 (editor highlighted as outstanding paper)
- 11) **Cheng CP**, Reyes MR (2020) “Impact of Crowd-sourced Wine Ratings on Purchasing Behavior in a Retail Environment,” American Association of Wine Economists, Working Paper #252 (Best Paper Award at 2019 American Association of Wine Economists Conference)
- 12) **Cheng CP** (2020) “Dynamic Blood Vessels and Implications for Medical Devices,” *Journal of the Nuffield Department of Surgical Sciences*, 1(1): online, DOI: 10.37707/jnds.v1i1.67 (invited editorial for inaugural issue)
- 13) Frohlich M, Suh G, Bondesson J, Lee JT, Dake MD, Leineweber M, **Cheng CP** (2020) “Aortic Geometry Correlates with Endograft Bird-Beaking Severity,” *Journal of Vascular Surgery*, 72(4): 1196-1205
- 14) Bondesson J, Suh G, Lundh T, Lee JT, Dake MD, **Cheng CP** (2020) “Automated Quantification of Diseased Thoracic Aortic Longitudinal Centerline and Surface Curvatures,” *Journal of Biomechanical Engineering*, 142(4): 041007
- 15) Combs JW, Levin E, **Cheng CP**, Daly S, Yeralan S, Duerig T (2019) “Effects of Heat Treatment on the Magnetic Properties of Nitinol Devices,” *Shape Memory and Superelasticity*, 5(4): 429-435, DOI: 10.1007/s40830-019-00258-x

- 16) Lee R, Stoddart M, Dyson I, Cassimjee I, Handa A, **Cheng CP** (2019) "Length Redundancy and Twist Improve the Biomechanical Properties of Polytetrafluoroethylene Bypass Grafts," *Annals of Vascular Surgery*, 61: 410-415
- 17) **Cheng CP**, Suh G, Kim JJ, Holden A (2019) "Cardiac- and Respiratory-Induced Deformations of the Renal Arteries and Stents and Relative Compliance Damping After Snorkel Endovascular Aneurysm Sealing," *Journal of Endovascular Therapy*, 26(4): 556-564
- 18) Suh G, Ullery BW, Lee JT, Dake MD, Fleischmann D, **Cheng CP** (2019) "Cardiopulmonary-Induced Deformations of the Thoracic Aorta Following Thoracic Endovascular Aortic Repair," *Vascular*, 27(2): 181-189
- 19) Itoga N, Suh G, **Cheng CP** (2018) "Stabilization of the Abdominal Aorta During the Cardiac Cycle with the Sac-Anchoring Nellix Device," *Annals of Vascular Surgery*, 52: 312e7-e12
- 20) Lundh T, DiGiacomo P, Suh G, **Cheng CP** (2018) "A Lagrangian Cylindrical Coordinate System for Characterizing Surface Geometry of Tubular Anatomic Structures," *Medical & Biological Engineering & Computing*, 56(9): 1659-1668
- 21) Ullery BW, Suh G, Hirotsu K, Zhu YD, Lee JT, Dake MD, Fleischmann D, **Cheng CP** (2018) "Geometric Deformations of the Thoracic Aorta and Supra-aortic Arch Branch Vessels Following Thoracic Endovascular Aortic Repair," *Vascular and Endovascular Surgery*, 52(3): 173-180
- 22) **Cheng CP**, Zhu YD, Suh G (2018) "Optimization of 3D Geometric Modeling Parameters for Geometric Precision and Modeling Efficiency for Healthy and Diseased Aortas," *Computer Methods in Biomechanics and Biomedical Engineering*, 21(1): 65-74
- 23) Hirotsu K, Suh G, Lee JT, Dake MD, Fleischmann D, **Cheng CP** (2018) "Changes in Geometry and Cardiac Deformation of the Thoracic Aorta After Thoracic Endovascular Aortic Repair," *Annals of Vascular Surgery*, 46: 83-89
- 24) Srimathveeravalli G, Balesh E, **Cheng CP**, Chen D (2017) "If You Built It, They Will Come: How to Establish an Academic Innovation Enterprise," *Techniques in Vascular and Interventional Radiology*, 20: 121-126
- 25) Suh G, Fleischmann D, Beygui RE, **Cheng CP** (2017) "Quantification of Motion of the Thoracic Aorta After Ascending Aortic Repair of Type-A Dissection," *International Journal of Computer Assisted Radiology and Surgery*, 12(5): 811-819
- 26) Ullery BW, Suh G, Kim JJ, Lee JT, Dalman RL, **Cheng CP** (2017) "Dynamic Geometric Analysis of the Renal Arteries and Aorta Following Complex Endovascular Aneurysm Repair," *Annals of Vascular Surgery*, 43: 85-95
- 27) Suh G, Hirotsu K, Beygui R, Dake MD, Fleischmann D, **Cheng CP** (2016) "Volumetric Analysis Demonstrates True and False Lumen Remodeling Persists for 12 Months after TEVAR," *Journal of Vascular Surgery Cases*, 2:101-104
- 28) Suh G, Choi G, Herfkens RJ, Dalman RL, **Cheng CP** (2016) "Respiration-Induced Motion of the Visceral Arteries and Kidneys in Patients with Abdominal Aortic Aneurysms," *Annals of Vascular Surgery*, 34: 250-260
- 29) Ullery BW, Suh G, Lee JT, Liu B, Stineman R, Dalman RL, **Cheng CP** (2016) "Comparative Geometric Analysis of Renal Artery Anatomy Before and After Fenestrated or Snorkel/Chimney EVAR," *Journal of Vascular Surgery*, 63(4): 922-929
- 30) Choi G, **Cheng CP** (2016) "Quantification of the *In Vivo* Kinematics of the Superficial Femoral Artery due to Hip and Knee Flexion using Magnetic Resonance Imaging," *Journal of Medical and Biological Engineering*, 36(1): 80-86
- 31) **Cheng CP**, Taylor CA, Dalman RL (2015) "Abdominal Aortic Hemodynamics in Intermittent Claudication Patients at Rest and During Dynamic Pedaling Exercise," *Annals of Vascular Surgery*, 29(8): 1516-1523
- 32) Ullery BW, Suh G, Lee JT, Liu B, Stineman R, Dalman RL, **Cheng CP** (2015) "Geometry and Respiratory-Induced Deformation of Abdominal Branch Vessels and Stents After Complex Endovascular Aneurysm Repair," *Journal of Vascular Surgery*, 61(4): 875-885
- 33) Suh G, Beygui RE, Fleischmann D, **Cheng CP** (2014) "Aortic Arch Vessel Geometries and Deformations in Patients with Thoracic Aortic Aneurysms and Dissections," *Journal of Vascular and Interventional Radiology*, 25(12): 1903-1911
- 34) Choi G, Xiong G, **Cheng CP**, Taylor CA (2014) "Methods for Characterizing Human Coronary Artery Deformation from Cardiac-Gated Computed Tomography Data," *IEEE Transactions on Biomedical Engineering*, 61(10): 2582-2592
- 35) Suh G, Choi G, Herfkens RJ, Dalman RL, **Cheng CP** (2013) "Respiration-Induced Deformation of the Superior Mesenteric and Renal Arteries in Patients with Abdominal Aortic Aneurysms," *Journal of Vascular and Interventional Radiology*, 24(7): 1035-1042
- 36) Suh G, Choi G, Draney MT, Herfkens RJ, Dalman RL, **Cheng CP** (2013) "Respiratory-Induced 3D Deformations of the Renal Arteries Quantified with Geometric Modeling During Inspiration and Expiration Breath-holds of Magnetic Resonance Angiography," *Journal of Magnetic Resonance Imaging*, 38(6): 1325-1332
- 37) Suh G, Les AS, Tenforde AS, Shadden SC, Spilker RL, Yeung JJ, **Cheng CP**, Herfkens RJ, Dalman RL, Taylor CA (2011) "Hemodynamic Changes Quantified in Abdominal Aortic Aneurysms With Increasing Exercise Intensity Using MR Exercise Imaging and Image-Based Computational Fluid Dynamics," *Annals of Biomedical Engineering*, 39(8): 2186-2202

- 38) Zeller T, Braunlich S, Waldo M, **Cheng CP**, Macharzina R, Scheinert D, Rastan A (2011) "The NovoStent® SAMBA® stent: A novel alternating helix self-expanding nitinol stent design," *Interventional Cardiology*, 3(2): 247-261
- 39) Suh G, Les AS, Tenforde AS, Shadden SC, Spilker RL, Yeung JJ, **Cheng CP**, Herfkens RJ, Dalman RL, Taylor CA (2011) "Quantification of Particle Residence Time in Abdominal Aortic Aneurysms Using Magnetic Resonance Imaging and Computational Fluid Dynamics," *Annals of Biomedical Engineering*, 39(2): 864-883
- 40) Tenforde AS, **Cheng CP**, Suh G, Herfkens RJ, Dalman RL, Taylor CA (2010) "Quantifying *In Vivo* Hemodynamic Response to Exercise in Patients with Intermittent Claudication and Abdominal Aortic Aneurysms Using Cine Phase-Contrast MRI," *Journal of Magnetic Resonance Imaging*, 31(2): 425-429
- 41) **Cheng CP**, Choi G, Herfkens RJ, Taylor CA (2010) "The Effect of Aging on Deformations of the Superficial Femoral Artery Due to Hip and Knee Flexion: Potential Clinical Implications," *Journal of Vascular and Interventional Radiology*, 21(2): 195-202
- 42) Choi G, Suh G, Shin LK, Taylor CA, **Cheng CP** (2009) "*In Vivo* Deformation of the Human Abdominal Aorta and Common Iliac Arteries With Hip and Knee Flexion: Implications for the Design of Stent-Grafts," *Journal of Endovascular Therapy*, 16(5): 531-538
- 43) Choi G, **Cheng CP**, Wilson NM, Taylor CA (2009) "Methods for Quantifying Three-Dimensional Deformation of Arteries Due to Pulsatile and Nonpulsatile Forces: Implications for the Design of Stents and Stent Grafts," *Annals of Biomedical Engineering*, 37(1): 14-33
- 44) **Cheng CP** (2008) "A Review of Peripheral Vascular Deformations Due to Respiration and Musculoskeletal Influences," *Journal of ASTM International (Symposium on Fatigue and Fracture of Medical Metallic Materials and Devices)*, 5(10): Paper ID JAI102074
- 45) Robertson SW, **Cheng CP**, Razavi MK (2008) "Biomechanical Response of Stented Carotid Arteries to Swallowing and Neck Motion," *Journal of Endovascular Therapy*, 15: 663-671
- 46) Robertson SW, Jessup DB, Boero JJ, **Cheng CP** (2008) "Right Renal Artery *In Vivo* Stent Fracture," *Journal of Vascular and Interventional Radiology*, 19: 439-442
- 47) **Cheng CP**, Taur AS, Lee GS, Goris ML, Feinstein JA (2006) "Relative Lung Perfusion Distribution in Normal Subjects: Observations and Clinical Implications," *Congenital Heart Disease*, 1: 210-216
- 48) **Cheng CP**, Wilson NM, Hallett RL, Herfkens RJ, Taylor CA (2006) "*In Vivo* MR Angiographic Quantification of Axial and Twisting Deformations of the Superficial Femoral Artery Resulting from Maximum Hip and Knee Flexion," *Journal of Vascular and Interventional Radiology*, 17: 979-987
- 49) Tang BT, **Cheng CP**, Draney MT, Wilson NM, Tsao PS, Herfkens RJ, Taylor CA (2006) "Abdominal Aortic Hemodynamics in Young Healthy Adults at Rest and during Lower Limb Exercise: Quantification using Image-Based Computer Modeling," *American Journal of Physiology – Heart and Circulatory Physiology*, 291: H668-H676
- 50) **Cheng CP**, Herfkens RJ, Taylor CA, Feinstein JA (2005) "Proximal Pulmonary Artery Blood Flow Characteristics in Healthy Subjects Measured in an Upright Posture Using MRI: The Effects of Exercise and Age," *Journal of Magnetic Resonance Imaging*, 21: 752-758
- 51) **Cheng CP**, Herfkens RJ, Lightner AL, Taylor CA, Feinstein JA (2004) "Blood Flow Conditions in the Proximal Pulmonary Arteries and Vena Cavae in Healthy Children During Upright Seated Rest and Cycling Exercise, Quantified with MRI," *American Journal of Physiology – Heart and Circulatory Physiology*, 287(2): H921-926
- 52) **Cheng CP**, Herfkens RJ, Taylor CA (2003) "Abdominal Aortic Hemodynamic Conditions in Healthy Subjects Aged 50-70 at Rest and During Lower Limb Exercise: *In Vivo* Quantification Using MRI," *Atherosclerosis*, 168: 323-331
- 53) **Cheng CP**, Herfkens RJ, Taylor CA (2003) "Inferior Vena Caval Hemodynamics Quantified *In Vivo* at Rest and During Lower Limb Exercise Using Magnetic Resonance Imaging," *American Journal of Physiology – Heart and Circulatory Physiology*, 284(4): H1161-1167
- 54) **Cheng CP**, Herfkens RJ, Taylor CA (2003) "Dynamic Exercise Imaging With an MR-Compatible Stationary Cycle Within the General Electric Open Magnet," *Magnetic Resonance in Medicine*, 49(3): 581-585
- 55) **Cheng CP**, Herfkens RJ, Taylor CA (2003) "Comparison of Abdominal Aortic Hemodynamics Between Men and Women at Rest and During Lower Limb Exercise," *Journal of Vascular Surgery*, 37(1): 118-123
- 56) **Cheng CP**, Parker D, Taylor CA (2002) "Quantification of Wall Shear Stress in Large Blood Vessels Using Lagrangian Interpolation Functions with Cine PC-MRI," *Annals of Biomedical Engineering*, 30: 1020-1032
- 57) Taylor CA, **Cheng CP**, Espinosa LA, Tang BT, Parker D, Herfkens RJ (2002) "*In Vivo* Quantification of Blood Flow and Wall Shear Stress in the Human Abdominal Aorta During Lower Limb Exercise," *Annals of Biomedical Engineering*, 30: 402-408

Book and Book Chapters

Book

Cheng CP (Editor) (2019) *Handbook of Vascular Motion*. 1st Edition. Amsterdam, Netherlands: Elsevier Inc. eBook ISBN: 978-0-12-815714-5, Paperback ISBN: 978-0-12-815713-8

Book Chapters

- 1) Suh G, Ullery BW, Bondesson J, **Cheng CP**, Lee JT (2019) “Dynamic Geometric Change of the Thoracic Aorta: Implications for TEVAR and Branched Grafts,” European Symposium on Vascular Biomaterials, pp ##
- 2) **Cheng CP** (2019) “Deciding What Vascular Motions You Need” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 7-22), Amsterdam, Netherlands: Elsevier
- 3) **Cheng CP** (2019) “Medical Imaging Modalities and Protocols” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 23-43), Amsterdam, Netherlands: Elsevier
- 4) **Cheng CP** (2019) “Geometric Modeling of Vasculature” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 45-66), Amsterdam, Netherlands: Elsevier
- 5) **Cheng CP** (2019) “Quantifying Vascular Deformations” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 67-84), Amsterdam, Netherlands: Elsevier
- 6) Choi G, Chen J, Carroll J, **Cheng CP** (2019) “Coronary Arteries and Heart” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 87-116), Amsterdam, Netherlands: Elsevier
- 7) Frakes D, **Cheng CP** (2019) “Arteries of the Head and Neck” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 117-138), Amsterdam, Netherlands: Elsevier
- 8) Ullery B, Suh G, **Cheng CP** (2019) “Thoracic Aorta and Supra-Aortic Arch Branches” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 139-163), Amsterdam, Netherlands: Elsevier
- 9) Suh G, Ullery B, **Cheng CP** (2019) “Abdominal Aorta and Renovisceral Arteries” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 165-189), Amsterdam, Netherlands: Elsevier
- 10) **Cheng CP** (2019) “Lower Extremity Arteries” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 191-223), Amsterdam, Netherlands: Elsevier
- 11) Carr A, **Cheng CP** (2019) “Veins of the Upper Body” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 225-246), Amsterdam, Netherlands: Elsevier
- 12) **Cheng CP** (2019) “Inferior Vena Cava and Lower Extremity Veins” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 247-271), Amsterdam, Netherlands: Elsevier
- 13) **Cheng CP** (2019) “Developing Boundary Conditions for Device Design and Durability Evaluation” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 275-289), Amsterdam, Netherlands: Elsevier
- 14) Myers C, Wolf B, Nilson M, Byrne A, Rush S, Elkins J, Ragheb A, Roeder B, Swift R, Metcalf J, Duerig T, **Cheng CP** (2019) “Product Development and Business Implications” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 351-372), Amsterdam, Netherlands: Elsevier
- 15) **Cheng CP** (2019) “Conclusion and Future Directions” In CP Cheng (Ed.), *Handbook of Vascular Motion* (1st Edition, pp 373-380), Amsterdam, Netherlands: Elsevier
- 16) Suh G, **Cheng CP** (2017) “Quantification of Abdominal and Thoracic Aortic Geometric and Motion Changes After Endovascular Repair,” European Symposium on Vascular Biomaterials, pp 263–270
- 17) Suh G, **Cheng CP**, Lee JT, Dalman RL (2015) “Renal and Superior Mesenteric Arteries Motion during Respiration in Patients with Aortic Aneurysms,” European Symposium on Vascular Biomaterials, pp 25–33

Conference Publications and Presentations

- 1) Bondesson J, Raja S, Suh G, Dake MD, Lee JT, **Cheng CP** (2022) “Longitudinal Mapping of True Lumen Morphology for Accurate Endograft Oversizing in Patients with Type B Aortic Dissections,” *2022 VEITH Symposium*, New York, NY, November 2022
- 2) **Cheng CP** (2022) “Impact of Cardiovascular Motion on Device Design and Durability,” *2022 Transcatheter Therapeutics Conference*, Boston, MA, September 2022
- 3) **Cheng CP** (2022) “Nominal, Challenging, and Extreme Boundary Conditions,” *2022 Greenberg Stent Summit*, Boston, MA, September 2022
- 4) **Cheng CP** (2022) “Cardiovascular Motion and Medical Imaging,” *2022 Cardiovascular Implant Durability Conference*, Pacific Grove, CA, April 2022
- 5) Bondesson J, Suh G, **Cheng CP** (2022) “Cardiac-induced Helical Deformation of Thoracic Aorta and Endografts After Thoracic Endovascular Aortic Repair of Type B Dissections,” *2022 Cardiovascular Implant Durability Conference*, Pacific Grove, CA, April 2022

- 6) **Cheng CP** (2021) "Respiratory-Induced Dynamics of the BeGraft Stent in FEVAR," *2021 Leipzig Interventional Course (LINC)*, Virtual, January 2021
- 7) Bondesson J, Suh GY, Dake MD, Lee JT, **Cheng CP** (2020) "Influence of Thoracic Endovascular Aortic Repair on True Lumen Helical Morphology for Stanford Type B Dissections," *2020 Western Vascular Society Annual Meeting*, Virtual, October 2020
- 8) Tran K, Suh GY, Haulon S, **Cheng CP** (2020) "Respiratory-induced Changes in Reno-visceral Branch Vessel Morphology Following Fenestrated Thoraco-abdominal Aneurysm Repair with a Flexible Balloon Expandable Covered Stent," *2020 Western Vascular Society Annual Meeting*, Virtual, October 2020
- 9) **Cheng CP** (2020) "Designing Venous Stents to Cope with Venous Anatomy: What is Needed Below the Ligament," *2020 Charing Cross Symposium*, Virtual, April 2020
- 10) Stern JR, Colvard BD, Lee JT, **Cheng CP** (2020) "The Triple-Wire Technique for Delivery of Endovascular Components in Difficult Anatomy," *2020 Vascular & Endovascular Surgery Society Meeting*, Virtual, January 2020.
- 11) **Cheng CP** (2019) "Capturing Vascular Motion with Medical Imaging," *2019 Cardiovascular Implant Durability Conference*, Pacific Grove, CA, October 2019
- 12) **Cheng CP** (2019) "Peripheral Vascular Deformations," *2019 Cardiovascular Implant Durability Conference*, Pacific Grove, CA, October 2019
- 13) Kwiecinski J, Uberoi R, Mohammed H, **Cheng CP**, You Z (2019) "In Vitro Quantification of Stent-Graft Behavior During ch-TEVAR," *2019 CIRSE Conference*, Barcelona, Spain, September 2019
- 14) Bondesson J, Suh G, Lundh T, Dake MD, Lee JT, **Cheng CP** (2019) "Quantification of True Lumen Helicity in Type B Dissections," *2019 Transcatheter Therapeutics Conference*, San Francisco, CA, September 2019
- 15) **Cheng CP**, Suh G, Shah RP, Black SA, Chinubhai A (2019) "Iliofemoral Vein Compression Is Caused by the Pubic Bone, Not the Inguinal Ligament," *2019 Transcatheter Therapeutics Conference*, Abstract #566, San Francisco, CA, September 2019
- 16) Combs JW, Levin E, **Cheng CP**, Daly S, Yeralan S, Duerig T (2019) "Effects of Heat Treatment on the Magnetic Properties of Nitinol Devices," *2019 Society of Experimental Mechanics Conference*, Reno, NV, June 2019
- 17) Reyes MR, **Cheng CP** (2019) "The rise of the consumer critic: Is purchasing behavior impacted in a wine retail environment?" *2019 American Association of Wine Economists Conference (Best Paper Award)*, Vienna, Austria, July 2019
- 18) **Cheng CP** (2019) "Vascular Motion and Device Design," *2019 China Vascular Innovation Symposium*, Beijing, China, October 2019
- 19) **Cheng CP** (2019) "Peripheral Vascular Deformations," *2019 China Vascular Innovation Symposium*, Beijing, China, October 2019
- 20) **Cheng CP** (2019) "Thoracic and Abdominal Aortic Deformations," *2019 China Vascular Innovation Symposium*, Beijing, China, October 2019
- 21) **Cheng CP**, Kim JJ, Suh G, Holden A (2018) "Cardiac- and Respiratory-Induced Motion of the Renal Arteries and Stents in Snorkel Endovascular Aneurysm Sealing," *2018 Leipzig Interventional Course (LINC)*, Leipzig, Germany, January-February 2018
- 22) **Cheng CP**, Suh G, Kim JJ, Lee JT, Dalman RL, Holden A (2018) "Dynamic Geometry of Renal Arteries in Untreated AAA and Snorkel Endovascular Aneurysm Repair and Sealing," *2018 Leipzig Interventional Course (LINC)*, Leipzig, Germany, January-February 2018
- 23) Kim JJ, Suh G, Lee JT, Dalman RL, **Cheng CP** (2018) "Renal Snorkel Stent Length Affects Branch Angle in Snorkel EVAR and EVAS Patients," *2018 Leipzig Interventional Course (LINC)*, Leipzig, Germany, January-February 2018
- 24) Suh G, Cabrerros S, Kim JJ, Bondesson J, Lee JT, Dake MD, **Cheng CP** (2018) "Multiaxial Pulsatile Compliance Changes to the Thoracic Aorta from Before to After TEVAR," *2018 Leipzig Interventional Course (LINC)*, Leipzig, Germany, January-February 2018
- 25) Frohlich MM, Suh G, Bondesson J, Lee JT, Dake MD, **Cheng CP** (2018) "Geometric Features of the Thoracic Aorta and Endograft Correlate with TEVAR Bird-Beaking Severity," *2018 Leipzig Interventional Course (LINC)*, Leipzig, Germany, January-February 2018
- 26) Bondesson J, Suh G, Lundh T, Lee JT, Dake MD, **Cheng CP** (2018) "Quantification of Thoracic Aortic Longitudinal Centerline and Surface Curvatures for TEVAR Planning and Evaluation," *2018 Leipzig Interventional Course (LINC)*, Leipzig, Germany, January-February 2018
- 27) Hirotsu K, Suh G, Lee JT, Dake MD, Fleischmann D, **Cheng CP** (2017) "Changes in Geometry and Cardiac Deformation of the Thoracic Aorta After TEVAR," *2017 Vascular & Endovascular Surgery Society Winter Meeting*, Steamboat Springs, CO, February 2017
- 28) **Cheng CP** (2017) "Will Advances in Bridging Stent Design Improve Outcomes?" *2017 Critical Issues America in Aortic Endografting*, Coral Gables, FL, February 2017

- 29) Dalman RL and **Cheng CP** (2016) “How Renal Artery Angulation and Respiratory Motion Affect the Long-Term Results of Chimney EVAR (Ch/EVAR) and Fenestrated EVAR (F/EVAR),” *2016 VEITH Symposium*, Session 41, New York, NY, November 2016
- 30) **Cheng CP** (2016) “Stent-Branch Vessel Interactions: Lessons Learned from Parallel Grafts and FEVAR,” *2016 Greenberg Stent Summit*, Cleveland, OH, September 2016
- 31) Suh G, Zhu, YD, Hirotsu K, Lee JT, Dake MD, Fleischmann D, **Cheng CP** (2016) “Cardiac- and Respiratory-Induced Deformation of Thoracic Aorta after TEVAR,” *2016 International Symposium of Endovascular Therapy*, Hollywood, FL, February 2016
- 32) Suh G, Ullery BW, Kim JJ, Lee JT, Dalman RL, **Cheng CP** (2016) “Geometric Changes of Renal Arteries and Abdominal Aorta with Complex EVAR from Preop to Follow-up Stage,” *2016 International Symposium of Endovascular Therapy*, Hollywood, FL, February 2016
- 33) Suh G, Hirotsu, K, Zhu, YD, Lee JT, Dake MD, Fleischmann D, **Cheng CP** (2015) “Geometric Analysis of Thoracic Aorta and Arch Branches Before and After TEVAR,” *2015 Transcatheter Therapeutics Conference*, Abstract #323
- 34) **Cheng CP** (2015) “Motion of the Aortic Arch: What we think we know,” *2015 Greenberg Stent Summit*
- 35) Ullery BW, Suh G, Lee JT, Liu B, Stineman R, Dalman RL, **Cheng CP** (2015) “Comparative Geometric Analysis of Renal Artery Anatomy Before and After Fenestrated or Snorkel/Chimney EVAR,” *2015 Vascular Annual Meeting*
- 36) **Cheng CP** (2014) “Motion of the Branch Vessels: What is happening, and should we be concerned?” *2014 Greenberg Stent Summit*
- 37) Choi G, Koo BK, **Cheng CP** (2014) “Quantification of Coronary Artery and Myocardial Deformation Due to Cardiac Motion Using Cardiac-gated Computed Tomography Data,” *2014 Transcatheter Therapeutics Conference*, Abstract #305
- 38) Ullery BW, Suh G, Lee JT, Liu B, Stineman R, Dalman RL, **Cheng CP** (2014) “Geometry and Respiratory-Induced Deformation of Abdominal Branch Vessels Following Complex EVAR,” *2014 Western Vascular Society Annual Meeting (First Place in Best Trainee Award Competition)*
- 39) Suh G, Beygui R, Fleischmann D, **Cheng CP** (2014) “Respiratory- and Cardiac-Induced Motion of the Thoracic Aorta in Patients with Thoracic Aortic Disease,” *2014 Society of Interventional Radiology Annual Scientific Meeting*, Abstract #18 (Podium Presentation)
- 40) Suh G, Beygui R, Marangi R, Fleischmann D, **Cheng CP** (2013) “Respiratory- and Cardiac-Induced Branch Deformation of the Aortic Arch Vessels in Patients with Thoracic Aortic Disease,” *2013 International Symposium of Endovascular Therapy*, Poster ID #20
- 41) Dalman RL and **Cheng CP** (2012) “Quantifying Ascending Aorta And Arch Deformation From Respiratory And Cardiac Motion: Implications For Branched Devices,” *2012 VEITH Symposium*, Session 11
- 42) Suh G, **Cheng CP** (2012) “Respiration-induced Deformation of the Abdominal Arteries in Patients with Abdominal Aortic Aneurysms,” *2012 US-Korea Conference*
- 43) Suh G, Choi G, Draney MT, Herfkens RJ, Dalman RL, **Cheng CP** (2012) “Respiratory Deformation of the Superior Mesenteric Artery and Renal Arteries in Patients with Abdominal Aortic Aneurysms,” *2012 Society of Interventional Radiology Annual Scientific Meeting*, Abstract #422 (**Poster Award Winner**)
- 44) Suh G, Choi G, Draney MT, Herfkens RJ, Dalman RL, **Cheng CP** (2012) “Respiratory Deformation of the Renal Arteries in Healthy Subjects and Patients with Abdominal Aortic Aneurysms,” *2012 International Symposium of Endovascular Therapy*, Abstract #750042
- 45) **Cheng CP**, Suh G, Choi G (2010) “Renal Artery and Abdominal Aortic Biomechanics,” *2010 Stent Summit*
- 46) Zeller T, Johnson A, **Cheng CP**, Martin GR (2009) “Evaluation of NovoStent’s SAMBA Stent,” *2009 Transcatheter Therapeutics Conference*, Abstract #597
- 47) Zeller T, Johnson A, **Cheng CP**, Martin GR (2009) “Animal Evaluation of a Novel Alternating Helical Stent,” *EuroPCR, EuroIntervention*, Volume 5, Supplement E, p E41
- 48) Choi G, Dusch MN, Xiong G, Xiao N, **Cheng CP**, Taylor CA (2009) “*In Vivo* Quantification of Human Coronary Artery Deformation from Cardiac-Gated Computed Tomography Data,” *2009 ASME Summer Bioengineering Conference*
- 49) Suh G, Tenforde A, Shadden S, Spilker R, **Cheng CP**, Herfkens RJ, Dalman RL, Taylor CA (2009) “Hemodynamics in Abdominal Aortic Aneurysms at Rest and Graded Levels of Exercise,” *2009 ASME Summer Bioengineering Conference (3rd Place Podium Competition)*
- 50) **Cheng CP**, Choi G, Cukur T (2008) “Tibial Artery Biomechanics,” *2008 Stent Summit*
- 51) Choi G, Shin LK, Taylor CA, **Cheng CP** (2008) “Quantification of the Deformation of the Human Iliac Arteries with Hip and Knee Flexion: Implications for Stent-Graft Design,” *2008 ASME Summer Bioengineering Conference*
- 52) **Cheng CP** (2008) “Carotid Artery Deformations Due to Musculoskeletal Motion and Comparisons with Other Anatomies,” *2008 ASTM Fatigue and Fracture of Medical Metallic Materials and Devices*
- 53) **Cheng CP** (2008) “The Dynamic Environment of the SFA,” *2008 Society of Interventional Radiology Annual Scientific Meeting*

- 54) Choi G, Wilson NM, **Cheng CP**, Herfkens RJ, Taylor CA (2008) "Quantification of the *In Vivo* Kinematics of the Superficial Femoral Artery Due to Hip and Knee Flexion Using Magnetic Resonance Imaging," *16th International Society for Magnetic Resonance in Medicine*, Abstract #2062
- 55) Tenforde A, **Cheng CP**, Suh G, Les AS, Dalman RL, Herfkens RJ, Taylor CA (2008) "Hemodynamic Response to Exercise in Small Aortic Aneurysms," *16th International Society for Magnetic Resonance in Medicine*, Abstract #1970
- 56) **Cheng CP**, Robertson SW (2007) "Non-Pulsatile Carotid Artery Biomechanics," *2007 Stent Summit*
- 57) Cao E, **Cheng CP** (2007) "*In Vivo* 3D Deformations of the Human Iliac Artery Due to Hip Flexion," *2007 Transcatheter Therapeutics Conference*, Abstract #587
- 58) Choi G, **Cheng CP**, Wilson NM, Taylor CA (2007) "Methods for Quantifying Vessel Deformation Due to Pulsatile and Non-Pulsatile Forces," *2007 ASME Summer Bioengineering Conference* (3rd Poster Competition)
- 59) Les AS, **Cheng CP**, Draney, MT, Figueroa CA, LaDisa JF, Park JM, Herfkens RJ, Dalman RL, Taylor CA (2007) "Hemodynamics in Abdominal Aortic Aneurysms During Rest and Simulated Exercise," *2007 ASME Summer Bioengineering Conference*
- 60) **Cheng CP**, Choi G, Suh G, Donovan FD, Herfkens RJ, Taylor CA (2006) "*In Vivo* Axial and Twisting Deformations of the Superficial Femoral Artery Due to Hip and Knee Flexion: The RESISStent Consortium Experience," *2006 Transcatheter Therapeutics Conference*, Abstract #2616
- 61) Choi G, **Cheng CP**, Suh G, Donovan FD, Herfkens RJ, Taylor CA (2006) "Quantification of Radial Compression and Deflection of the Superficial Femoral Artery Due to Musculoskeletal Motion," *2006 Transcatheter Therapeutics Conference*, Abstract #258
- 62) **Cheng CP** (2006) "Arterial Biomechanics for Vascular Implants," *Complications Conference, Jackson Hole, WY*
- 63) **Cheng CP** (2006) "Functional Vascular Imaging for Medical Devices," *2006 Society for Medical Innovation and Technology (SMIT) Conference*
- 64) Fonte TA, **Cheng CP**, Spilker RL, Taylor CA, Feinstein JA (2005) "Patient-Specific 3-Dimensional Computational Models Quantifying Central, Lobar and Segmental Pulmonary Artery Hemodynamics with Morphometric Representation of Distal Vessels" *2005 American Heart Association Conference*
- 65) **Cheng CP**, Wilson NM, Herfkens RJ, Taylor CA (2005) "*In Vivo* Deformations of the Superficial Femoral Artery – Possible Cause of Stent Fractures?" *2005 ASME Summer Bioengineering Conference*
- 66) Song BP, Bennett NR, **Cheng CP**, Fahrig R, Wilson NM, Taylor CA (2005) "Methods for Imaging and Quantifying Stent Deformation in the Superficial Femoral Artery," *2005 ASME Summer Bioengineering Conference*
- 67) **Cheng CP**, Wilson NM, Herfkens RJ, Taylor CA (2005) "Superficial Femoral Artery Deformations Due to Maximal Hip and Knee Flexion: Implications for Stent Design," *13th International Society for Magnetic Resonance in Medicine*, Abstract #272
- 68) **Cheng CP**, Herfkens RJ, Taylor CA, Feinstein JA (2004) "*In Vivo* Blood Flow Characteristics in the Proximal Pulmonary Arteries of Healthy Children and Adults at Seated Rest and During Cycling Exercise," *12th International Society for Magnetic Resonance in Medicine*, Abstract #557
- 69) **Cheng CP**, Herfkens RJ, Taylor CA, Feinstein JA (2004) "Upright Seated Pulmonary and Caval Blood Flow Characteristics During Rest and Cycling Exercise Using Magnetic Resonance Imaging," *53rd Annual Scientific Session of the ACC, Supplement to JACC*, 43(5): p 396A
- 70) **Cheng CP**, Herfkens RJ, Taylor CA (2003) "*In Vivo* Quantification of Large Vessel Hemodynamics Using Exercise-Stress Magnetic Resonance Imaging," *International Bio-Fluid Symposium and Workshop*
- 71) **Cheng CP**, Herfkens RJ, Taylor CA (2003) "*In Vivo* Quantification of Abdominal Aortic Hemodynamic Conditions at Rest and During Cycling Exercise in Healthy Subject Aged 50-70," *11th International Society for Magnetic Resonance in Medicine*, Abstract #150
- 72) **Cheng CP**, Herfkens RJ, Dalman RL, Coogan SM, Taylor CA (2003) "*In Vivo* Abdominal Aortic Hemodynamic Conditions at Rest and During Cycling Exercise in Young Healthy Subjects, Older Healthy Subjects, and Intermittent Claudication Patients," *Proceedings of the 2003 ASME Summer Bioengineering Conference*, p 815-816
- 73) Tang BT, **Cheng CP**, Draney MT, Tsao PS, Taylor CA (2003) "Subject-Specific Finite Element Modeling of 3D Pulsatile Flow in the Human Abdominal Aorta: Comparison of Resting and Simulated Exercise Conditions," *Proceedings of the 2003 ASME Summer Bioengineering Conference*, p 165-166
- 74) **Cheng CP**, Parker D, Taylor CA (2001) "Wall Shear Stress Quantification from Magnetic Resonance Imaging Data Using Lagrangian Interpolation Functions," *Proceedings of the 2001 ASME Summer Bioengineering Conference*, p 795-796 (**PhD Student Paper Competition winner**)
- 75) Taylor CA, **Cheng CP** (2001) "Hemodynamic Conditions in the Human Abdominal Aorta at Rest and During Exercise," *2001 Vascular Annual Meeting Conference*
- 76) **Cheng CP**, Espinosa L, Tang B, Herfkens RJ, Taylor CA (2000) "*In vivo* Quantification of Blood Flow Distribution and Shear Stress in the Abdominal Aorta at Rest and During Lower Limb Exercise," *Annals of Biomedical Engineering, Volume 28 Supplement 1*, S-67

77) **Cheng CP** and Taylor CA (1999) “A Computational Study of the Effect of Femorofemoral Bypass Graft Diameter on Hemodynamic Conditions,” *Proceedings of the 1999 ASME Summer Bioengineering Conference*, p 191-192

Grant Funding

- NIH SBIR Direct to Phase II Pending Award, “Koli: A Non-surgical Solution for Gallstone Disease”
Role: PI/CEO \$1,744,000 2023-2025
- Research grant from *Medical Device Manufacturer*, “Biomechanical Analysis of Branched EVAR with ...”
Role: PI \$109,000 2021-22
- Research grant from Starlight Cardiovascular, “Biomechanical Analysis of Single Ventricle Disease to Assist with Ductus Arteriosus Stent and Pulmonary Artery Flow Restrictor Design and Durability Evaluation”
Role: PI Phase I: \$60,000 2020-21
Phase II: \$90,000 2021-22
- Research grant from *Medical Device Manufacturer*, “Biomechanical Analysis of the Ascending Aorta After Dissection TEVAR Treatment”
Role: PI \$715,000 2019-21
- Research grant from *Medical Device Manufacturer*, “Biomechanical Analysis of Fenestrated EVAR with ...”
Role: PI \$100,000 2019-20
- Grant from UK Medical Research Council, “Expert in Residence from Silicon Valley”
Role: Expert in Residence £18,000 (\$25,000) 2018
- Research grant from *Medical Device Manufacturer*, “Biomechanical Analysis of the Ascending Aorta Before and After Type A Dissection Endograft Treatment ...”
Role: PI \$60,000 2016-2018
- Research grant from *Medical Device Manufacturer*, “Geometry and Deformation of the Thoracic Aorta Before and After TEVAR”
Role: PI \$75,000 2017
- Research grant from *Medical Device Manufacturer*, “Biomechanical Analysis of the Complex Endovascular Aortic Repair with the ... Device”
Role: PI \$100,000 2016-17
- Research grant from *Medical Device Manufacturer*, “Biomechanical Analysis of the ... Device with Chimney/Snorkel Branches in Patients”
Role: PI \$105,000 2016-17
- NSF SBIR Phase II #IIP-1353584, “A Medical Device to Treat Gallstone Disease”
Role: PI/CEO \$1,312,000 2014-2017
Phase II Award \$736,000 2014-2017
Commercialization Assistance Program +\$10,000 Supplement 2014
Research Experiences for Undergraduates +\$16,000 Supplement 2015
Technology Enhancement for Commercial Partnerships +\$147,000 Supplement 2015
Research Experiences for Undergraduates +\$16,000 Supplement 2016
Partnership with Community Colleges +\$40,000 Supplement 2016-2017
Diversity Post-doctoral Fellowship +\$200,000 Supplement 2016-2017
Small Business / ERC Collaborative Opportunity +\$147,000 Supplement 2017
- Research grant from Endologix Inc., “Biomechanical Analysis of ... Endovascular Aortic Repair”
Role: PI \$48,000 2015
- Research grant from W.L. Gore & Associates, “Biomechanical Influences of ... on the Thoracic Aorta”
Role: PI \$300,000 2013-2015
- NSF SBIR Phase I #1248295, “A Medical Device to Treat Gallstone Disease”
Role: PI/CEO \$180,000 2013
Phase I Award \$150,000 2013
SBIR IB, NSF Match on outside investment +\$30,000 Supplement 2013
- Research grant from Medtronic Vascular, “Geometric Deformations of the Thoracic Aorta and Arch Branches Due to Respiration and Cardiac Pulsatility”
Role: PI \$297,000 2011-2013
- Research grant from W.L. Gore & Associates, “Visceral Artery Motion Due to Respiration”
Role: PI \$150,000 2012
- Research grant from Medtronic Vascular, “Quantification of Renal, Super Mesenteric, and Celiac Artery Geometry and Respiratory-Induced Deformation in Healthy Subjects and Patients with AAA”
Role: PI \$189,000 2010-2011
- NIH # P50 HL083800, “AAA: STOP, Abdominal Aortic Aneurysms: Simple Treatment or Prevention”

- Role: Co-Investigator \$12,000,000 2005-2009
- Research grant from Cordis Corporation, “Abdominal Aortic Deformations Due to Musculoskeletal Motion”
Role: PI \$200,000 2005-2007
- RESISStent SRI/Stanford Consortium on Stent Fracture in the Superficial Femoral Artery
Role: Co-Investigator \$690,000 2003-2005