

**JONATHAN J. CHENG**  
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### **EDUCATION**

August 1996 – May 2000	Baylor College of Medicine, Houston, TX Medical Doctorate
August 1992 – May 1996	Rice University, Houston, TX Bachelor of Arts, Chemical Physics Minor, Art and Art History
September 1988 – May 1992	Sam Rayburn High School, Pasadena, TX Class Valedictorian

### **POSTGRADUATE TRAINING**

September 2007 – November 2007	University Hospital Gent Gent, Belgium Perforator Flap Microsurgery Stephen Kroll Memorial Scholarship
June 2006 – August 2007	Washington University School of Medicine, St. Louis, MO Hand Surgery, Microsurgery, Peripheral Nerve Fellowship
June 2000 – June 2006	Medical College of Wisconsin, Milwaukee, WI Plastic Surgery Residency
July 2003 – June 2004	Medical College of Wisconsin, Milwaukee, WI Post-doctoral Research Fellow

### **EMPLOYMENT**

January 2008 – Present	University of Texas Southwestern Medical Center, Dallas, TX Department of Plastic Surgery
January 2008	Assistant Professor
September 2014	Associate Professor
September 2020	Professor
2011 – present	University of Texas Southwestern Medical Center, Dallas, TX and University of Texas at Arlington, Dallas, TX Faculty, Joint Graduate Program in Biomedical Engineering
2013 – present	University of Texas at Dallas, Richardson, TX Adjunct Faculty, Department of Biomedical Engineering
2021 - present	University of Texas Southwestern Medical Center, Dallas, TX Investigator, Peter O'Donnell Jr. Brain Institute

## HONORS

- 2022 American Association of Plastic Surgeons Centennial Meeting  
Paper in Presidential Plenary Session
- 2021 Peter O'Donnell Jr. Brain Institute, UT Southwestern  
Investigator
- 2018, 2019 University of Texas Southwestern Medical Center  
Nominee  
Leaders in Clinical Excellence – Institutional Service Award
- 2018 Stanford University Medical Center  
Chief Wellness Officer Training Course, Inaugural Class  
On behalf of UT System Physician Burnout Initiative
- 2016 Plastic and Reconstructive Surgery – Global Open Journal  
Best North American Paper
- 2010 American Society for Surgery of the Hand  
Young Leaders Program
- 2006 Medical College of Wisconsin  
Department of Plastic Surgery  
Top Mock Oral Board Examination
- 2006 Medical College of Wisconsin  
Department of Plastic Surgery  
Resident Research Day, Best Basic Science Paper Award
- 2004 Medical College of Wisconsin  
Department of Plastic Surgery  
Resident Research Day, Best Paper Award
- 2000 Baylor College of Medicine  
James K. Alexander Research Symposium  
Outstanding Clinical Poster
- 1996 Rice University  
Vice President's Appreciation Award
- 1996 Rice University, Jones College  
Graham Stebbings Service Award
- 1995 US Department of Agriculture, National Forest Service  
Certificate of Appreciation, Summer Fellowship
- 1994 National Aeronautics and Space Administration  
Group Achievement Award  
COSMOS 2044 Comparison Project  
(continued)

**HONORS (continued)**

- 1993 Rice University, Department of Engineering  
Charles Francis Cyrus Johnson Scholarship
- 1993 Rice University, Department of Engineering  
W.L. Moody, Jr., Scholarship
- 1992-1995 Rice University, President's Honor Roll  
Six-time recipient
- 1992 National Merit Scholar
- 1992 Sam Rayburn High School  
Class Valedictorian

**ADDITIONAL HONORS**

- 2023 Texas Super Doctors  
D Magazine Best Doctors
- 2022 Texas Super Doctors  
D Magazine Best Doctors
- 2014 Texas Rising Stars

## LEADERSHIP POSITIONS

July 2000 – June 2004	Housestaff Health and Welfare Committee Medical College of Wisconsin Milwaukee, WI
February 2010 – December 2011	Section Editor, Surgery of the Hand and Upper Extremity <i>Case Reviews in Plastic Surgery</i> Quality Medical Publishing, St. Louis, MO
July 2010 – August 2012	Vice-chief of Plastic Surgery Department of Plastic Surgery Children's Medical Center Dallas, TX
July 2010 – June 2012	Clinical Competency Committee Plastic Surgery Residency UT Southwestern Medical Center Dallas, TX
July 2010 – June 2016	Faculty Senator UT Southwestern Medical Center Dallas, TX
July 2012 – present	Co-Director of Microsurgery Fellowship Department of Plastic Surgery UT Southwestern Medical Center Dallas, TX
April 2013 – November 2017	Associate Editor Plastic and Reconstructive Surgery – Globen Open Journal
July 2013 – June 2014	President, Faculty Senate UT Southwestern Medical Center Dallas, TX
July 2013 – present	Chief of Hand, Microvascular, and Peripheral Nerve Surgery Division of Pediatric Plastic Surgery Children's Medical Center Dallas, TX
September 2014 – August 2016	University Representative Faculty Advisory Council University of Texas System
April 2016 – March 2017 March 2017 – April 2018 April 2018 – April 2019	Chair-Elect, Parliamentarian Chair Immediate Past Chair Faculty Advisory Council University of Texas System
December 2015 – present	Director, Brachial Plexus, Peripheral Nerve, Facial Reanimation Team Children's Medical Center Dallas, TX (continued)

### **LEADERSHIP POSITIONS (continued)**

May 2016 – present	Co-Chair, Physician Burnout Initiative and Working Group Faculty Advisory Council Administrative Liaison(s): EVC John Zerwas, MD; AVC Eric Solberg University of Texas System
September 25-26, 2017	Co-Chair, National Symposium “Beyond Resiliency Training: Organizational Strategies to Alleviate Burnout and Increase Wellness in Academic Medicine” Co-Chair, Post-Symposium Systemwide Think Tank MD Anderson Cancer Center Houston, TX
July 2019 – present	Department Representative Committee on Wellness UT Southwestern Medical Center Dallas, TX
July 2019 - present	Clinical Informatics Officer Department of Plastic Surgery UT Southwestern Medical Center Dallas, TX

## RESEARCH EXPERIENCE

- January 2008 – present      Director  
Clinical and Translational Peripheral Nerve Research Lab  
Department of Plastic Surgery  
UT Southwestern Medical Center  
Dallas, TX  
Topics: Peripheral Nerve Tissue Engineering  
Basic Mechanisms of Nerve Repair  
Interfacing of the Autonomic Nervous System  
Nerve-Machine Interface
- July 2003 – June 2004      Medical College of Wisconsin, Milwaukee, WI  
Plastic Surgery Research Fellow  
Mentor: Hani S. Matloub, MD  
Topic: Schwann Cell-Seeded Acellular Nerve Graft
- August 1999 – May 2000      Baylor College of Medicine, Houston, TX  
Plastic Surgery Research Lab  
Mentor: Rahul Nath, MD  
Topics: Cavernous Nerve Reconstruction After Surgical  
Ablation, Suprascapular Nerve Decompression
- January 1995 – May 1995      Dept of Biochemistry, Rice University, Houston, TX  
Mentor: Michael Gustin, PhD  
Topic: Signal Transduction in Response to Osmotic Shock
- Summers 1990 – 1993      Dept of Medicine and Cell Biology  
Baylor College of Medicine, Houston, TX  
Minority Research Training Program (1990)  
Summer Medical and Research Training Program (1993)  
Mentor: Margaret Ann Goldstein, PhD  
Topic: Effects of Micro- and Hypergravity on Cardiac  
Morphology

## RESEARCH FUNDING

- June 2010 – May 2011      North and Central Texas Clinical and Translational Science Initiative  
Pilot Award (PI)  
5 UL1 RR024982-03 (Packer)  
NIH/NCRR  
“Engineering a progenitor seeded nerve graft”
- August 2011 – October 2013      Reliable Peripheral Interface  
Subcontractor  
N660001-11-C-4168 (Keefer/Plexon)  
DARPA  
“Targeted surgical placement of peripheral nerve interfaces”
- October 2014 – December 2014      Bioelectronics R&D Network Exploratory Grant  
Co-PI  
140918  
GlaxoSmithKline  
“Taptrode project”

January 2015 – November 2020	Hand Proprioception and Touch Interfaces Co-PI (Clinical) DARPA-14-30-HAPTIX-FP-010 DARPA “Dexterous Hand Control Through Fascicular Targeting”
January 2016 – December 2016	Bioelectronics R&D Network Research Program Co-PI 3000030267 GlaxoSmithKline “Taptrode electrophysiology”
September 2016 – August 2017	Neurophysiology and Cognitive Neuroscience Co-PI W911NF-16-1-0234 Army Research Office “The molecular and electrophysiologic response to chronic intraneural silicone electrode implantation”

#### **GRANT REVIEW ACTIVITIES**

Peer Reviewed Medical Research Program (PRMRP) Pre-Application Peer Review Panel (SRO, Robin Levin),  
**Department of Defense, 2015**

Special Emphasis Panel/Scientific Review Group 2014/10 ZNS1 SRB-G (78) (SRO, Shanta Rajaram), **National Institutes of Health, 2016**

“Stimulating Peripheral Activity to Relieve Conditions” (SPARC), Tools and Technologies, RFA-RM-17-010  
Proposal Review Panel (SRO, Michael Wolfson and Andrew Weitz), **National Institutes of Health, Common Fund, 2017**

Research Management Committee (Chairs, Kevin Chung/Fraser Leversedge/Tamara Rozental), **American Society for Surgery of the Hand, 2015-2017 (committee member), 2020 (ad hoc).**

## PUBLICATIONS

- Goldstein MA, Cheng J, Schroeter JP. The effects of increased gravity and microgravity on cardiac morphology. *Aviat Space Environ Med* 1998; 69(6 Suppl):A12-16.
- Weinfeld AB, Cheng J, Nath RK, Basaran I, Yuksel E, Rose JE. Topographic mapping of the superior transverse scapular ligament: A cadaver study to facilitate suprascapular nerve decompression. *Plas Reconstr Surg* 2002; 110:774-779.
- Cortes W, Cheng J, Matloub HS. Intra-neural perineurioma of the radial nerve in a child. *J Hand Surg* 2005; 30A:820-825.
- Cheng J, Mackinnon SE. "Nerve Transfers for Digital Sensation." Master Skills in Nerve Repair: Tips and Techniques. Ed. David J. Slutsky. Rosemont: American Society for Surgery of the Hand, 2008. 181-192.
- Cheng J, Mackinnon SE. "Nerve Transfers to Restore Pronation." Master Skills in Nerve Repair: Tips and Techniques. Ed. David J. Slutsky. Rosemont: American Society for Surgery of the Hand, 2008. 213-226.
- Hamdi M, Cheng J. "Repair of the Partial Mastectomy Defect with Free Tissue Transfer." Oncoplastic Surgery of the Breast. Ed. Maurice Y. Nahabedian. London: Elsevier, 2009. Ch. 9. 105-114.
- Cheng J. "Upper Extremity Crush Injuries." Decision Making in Plastic Surgery. Ed. Chad A. Perlyn and Jeffrey L. Marsh. St. Louis: QMP, 2010. 204-205.
- Cheng J. "Upper Extremity Injection Injuries." Decision Making in Plastic Surgery. Ed. Chad A. Perlyn and Jeffrey L. Marsh. St. Louis: QMP, 2010. 208-209.
- Cheng J. Discussion: Lymphaticovenular bypass for lymphedema management in breast cancer patients: a prospective study. *Plast Reconstr Surg* 2010; 126:759-761.
- Dodson R, Ryan T, Cheng J. Case study: Surgical, prosthetic, and therapeutic considerations for a patient with ipsilateral brachial plexus injury and transradial amputation. Proceedings of the 2011 MyoElectric Controls/Powered Prosthetics Symposium. Fredericton, New Brunswick: August 14-19, 2011.
- Gillenwater TJ, Cheng J, Mackinnon SE. Evaluation of the scratch collapse test in peroneal neuropathy. *Plast Reconstr Surg* 2011; 128:933-939.
- Vasudevan S, Yan JG, Zhang LL, Matloub HS, Cheng J. A rat model for long-gap peripheral nerve reconstruction. *Plast Reconstr Surg* 2013;132:871-876.
- Vasudevan S, Huang J, Botterman B, Matloub H, Keefer E, Cheng J. Detergent-free decellularized nerve grafts for long gap peripheral nerve reconstruction. *Plast Reconstr Surg – Glob Open* 2014; 2:e201.
- Desai VH, Anand S, Tran M, Kanneganti A, Vasudevan S, Seifert JL, Cheng J, Keefer EW, Romero-Ortega MI. Chronic sensory-motor activity in behaving animals using regenerative multi-electrode interfaces. *Conf Proc IEEE Eng Med Biol Soc* 2014; 2014:1973-1976.
- Kao DS, Cheng J. Peripheral neuropathy: Surgical approaches simplified for the imagers. *Semin Musculoskelet Radiol* 2015;19:121-129.
- Law HZ, Amirlak B, Cheng J, Sammer DM. An association between carpal tunnel syndrome and migraine headaches – National Health Interview Survey, 2010. *Plast Reconstr Surg – Glob Open* 2015; 3:e333.
- Cox B, Zuniga JR, Panchal N, Cheng J, Chhabra A. Magnetic resonance neurography in the management of peripheral trigeminal neuropathy: experience in a tertiary care centre. *Eur Radiol* 2016; 26:3392-3400.

- Fisher S, Wadhwa V, Manthuruthil C, Cheng J, Chhabra A. Clinical impact of magnetic resonance neurography in patients with brachial plexus neuropathies. *Br J Radiol* 2016; 89:20160503.
- Lachapelle JR, Bjune CK, Kindle AL, Czarnecki A, Burns JR, Grainger JE, Segura CA, Nugent BD, Sriram TS, Parks PD, Keefer E, Cheng J. *Annu Int Conf IEEE Eng Med Biol Soc Aug* 2016; 2016:1794-97.
- Wadhwa V, Faircloth J, Cheng J, Timmons C, Chhabra A. Intra-neural ganglion cyst at the wrist presenting as radial neuropathy. *Annals of Medical and Health Sciences Research*. 2017.
- Anand S, Desai V, Alsmadi N, Kanneganti A, Nguyen DH, Tran M, Patil L, Vasudevan S, Xu C, Hong Y, Cheng J, Keefer E, Romero-Ortega M. Asymmetric sensory-motor regeneration of transected peripheral nerves using molecular guidance cues. *Scientific Reports*. 2017;7:14323.
- Ben-Amotz O, Pezeshk RA, Sammer DM, Cheng J. Arthroscopic Ganglionectomy in the Pediatric Population. *Plast Reconstr Surg* Nov 2018;142:718e-21e.
- Amirlak B, Dehdashtian A, Sanniec K, Lu K, Cheng J. Unique uses of SPY: Revision rhinoplasty. *Plast Reconstr Surg – Glob Open* Jun 2019; 7:e2123.
- Mazal AT, Ashikyan O, Cheng J, Le LQ, Chhabra A. Diffusion-weighted imaging and diffusion tensor imaging as adjuncts to conventional MRI for the diagnosis and management of peripheral nerve sheath tumors: current perspectives and future directions. *Eur Radiol* Aug 2019; 8:4123-4132.
- Mailey B, Naram A, Cheng J. Comparison of provocative maneuvers in diagnosing thumb carpometacarpal joint arthritis. *J Hand Surg (Eur)* Sep 2019;44:750-752.
- Overstreet CK, Cheng J, Keefer EW. Fascicle specific targeting for peripheral nerve stimulation. *J Neural Eng* Nov 2019;16:066040.
- Mazal AT, Faramarzalian A, Samet JD, Gill K, Cheng J, Chhabra A. MR neurography of the brachial plexus in adult and pediatric age groups: Evolution, recent advances, and future directions. *Expert Rev Med Devices* Feb 2020; 17:111-22.
- Kargel JS, Sammer DM, Pezeshk, RA, Cheng J. Oral antibiotics are effective for the treatment of hand osteomyelitis in children. *HAND (NY)* Mar 2020; 15:220-3.
- Amirlak B, Erickson CR, Sanniec K, Lu KB, Totonchi A, Peled ZM, Cheng J. In-depth look at the anatomical relationship between the lesser occipital nerve, greater auricular nerve, and spinal accessory nerve, and a multicenter review of lesser occipital nerve surgery techniques in migraine surgery. *Plast Reconstr Surg* Sep 2020; 146:509-14.
- Pientka WF II, Cheng J. Percutaneous fixation of pediatric subcondylar fracture of the distal aspect of the proximal phalanx: A novel technique. *Tech Hand Upper Ext Surg* Nov 2020. doi: 10.1097/BTH.0000000000000328.
- Nguyen AT, Xu J, Jiang M, Luu DK, Wu T, Tam WK, Zhao W, Drealan MW, Overstreet CK, Zhao Q, Cheng J, Keefer EW, Yang Z. A bioelectric neural interface towards intuitive prosthetic control for amputees. *J Neural Eng* Oct 2020.
- Lies SR, Kao D, Cheng J. "Peripheral Nerve Compression and Pain." [Pain Management for Clinicians: A Guide to Assessment and Treatment](#). Ed. Carl Noe. Heidelberg: Springer, 2020. Ch. 25. 725-742.
- Ruiz S, McCoy J, Pulikkottil B, Cheng J. Detailed Case Reports of Surgical Treatment for Intra-neural Ganglion Cysts. *Plastic and Reconstructive Surgery Global Open*. 2021 Feb;9(2).

- Nguyen AT, Xu J, Luu DK, Overstreet CK, Cheng J, Keefer EW, Yang Z. Redundant Crossfire: A Technique to Achieve Super-Resolution in Neurostimulator Design by Exploiting Transistor Mismatch. *IEEE Journal of Solid-State Circuits*. 2021 Feb 17.
- Luu DK, Nguyen AT, Jiang M, Xu J, Drealan MW, Cheng J, Keefer EW, Zhao Q, Yang Z. Deep Learning-Based Approaches for Decoding Motor Intent from Peripheral Nerve Signals. *Front Neurosci* Jun 2021; 15:667907.
- Cheng J, Yang Z, Overstreet CK, Keefer EW. FAST-LIFE electrode interfacing for motor and sensory restoration in upper limb amputees. *Hand Clin* Aug 2021; 37:401-14.
- Nguyen AT, Drealan MW, Luu DK, Jiang M, Xu J, Cheng J, Zhao Q, Keefer EW, Yang Z. A Portable, Self-Contained Neuroprosthetic Hand with Deep Learning-Based Finger Control. *J Neural Eng* Oct 2021; 18(5).
- Luu DK, Nguyen AT, Jiang M, Drealan MW, Xu J, Wu T, Tam WK, Zhao W, Lim BZH, Overstreet CK, Zhao Q, Cheng J, Keefer E, Yang Z. Artificial intelligence enables real-time and intuitive control of prostheses via nerve interface. *IEEE Trans Biomed Eng* 2022 Oct; 69(10):3051-3063.
- Imbarlina A, Kargel J, Cheng J, Rinaldi R. "Peripheral Nerve Injuries and Acquired Disorders." Handbook of Pediatric Rehabilitation Medicine. Eds. Robert J. Rinaldi and Rajashree Srinivasan. Springer, 2022. Ch. 10. 97-110.
- Tanner, J., Keefer, E., Cheng, J., & Helms Tillery, S. (2023). Dynamic peripheral nerve stimulation can produce cortical activation similar to punctate mechanical stimuli. *Frontiers in Human Neuroscience*, 17, 1083307.

## ACKNOWLEDGEMENTS

Goldstein MA, Edwards RJ, Schroeter JP. Cardiac morphology after conditions of microgravity during COSMOS 2044. *J Appl Physiol* 1992; 73(2 Suppl):94S-100S.

Gosain AK, Klein MH, Sudhakar PV, Prost RW. A volumetric analysis of soft-tissue changes in the aging midface using high-resolution MRI: Implications for facial rejuvenation. *Plast Reconstr Surg* 2005; 115(4):1143-52.

Oliveira IC, Barbosa RF, Ferreira PC, Silva PN, Choupina MP, Silva AM, Reis JC, Amarante JM. The use of forearm free fillet flap in traumatic upper extremity amputations. *Microsurgery* 2009; 29:8-15.

## COURSE FACULTY

11<sup>th</sup> Annual Dallas Cosmetic Surgery Symposium. UT Southwestern Medical Center, Dallas, TX. March 2008.

25<sup>th</sup> Annual Dallas Rhinoplasty Symposium. UT Southwestern Medical Center, Dallas, TX. March 2008.

Techniques in Flap Dissection. UT Southwestern Medical Center, Dallas, TX. May 2008.

3<sup>rd</sup> Annual Hand Fracture Management Symposium. UT Southwestern Medical Center, Dallas, TX. August 2008.

12<sup>th</sup> Annual Dallas Cosmetic Surgery Symposium. UT Southwestern Medical Center, Dallas, TX. March 2009.

Doctors Demystify: Upper Extremity Nerves. UT Southwestern Medical Center, Dallas, TX. March 2009.

Stephen Mathes Reconstructive Symposium. Plastic Surgery Educational Foundation, Dallas, TX. July 2009.

Hand and Wrist Workshop. AO North America, Dallas, TX. February 2010.

Doctors Demystify: Muscles and Tendons. UT Southwestern Medical Center, Dallas, TX. February 2010.

13<sup>th</sup> Annual Dallas Cosmetic Surgery Symposium. UT Southwestern Medical Center, Dallas, TX. March 2010

27<sup>th</sup> Annual Dallas Rhinoplasty Symposium. UT Southwestern Medical Center, Dallas, TX. March 2010.

2<sup>nd</sup> Annual Stephen Mathes Reconstructive Symposium. Plastic Surgery Educational Foundation, Dallas, TX. July 2010.

Hand and Wrist Workshop, AO North America, Dallas, TX, February 2011.

14<sup>th</sup> Annual Dallas Cosmetic Surgery Symposium, UT Southwestern Medical Center, Dallas, TX. March 2011.

28<sup>th</sup> Annual Dallas Rhinoplasty Symposium, UT Southwestern Medical Center, Dallas, TX, March 2011.

“Nerve Transfers That Work” Instructional Course, American Society for Surgery of the Hand, Chicago, IL. October 2012.

16<sup>th</sup> Annual Dallas Cosmetic Surgery Symposium, UT Southwestern Medical Center, Dallas, TX. March 2013.

30<sup>th</sup> Annual Dallas Rhinoplasty Symposium, UT Southwestern Medical Center, Dallas, TX, March 2013.

“Complications in Nerve Reconstruction” Instructional Course, American Association for Hand Surgery, Scottsdale, AZ, January 2016.

19<sup>th</sup> Annual Dallas Cosmetic Surgery Symposium, UT Southwestern Medical Center, Dallas, TX. March 2016.  
Doctors Demystify: Dupuytren's Disease. John Peter Smith Hospital, Fort Worth, TX. April 2016.

49<sup>th</sup> Annual Kenneth C. Haltalin Pediatrics for the Professional Conference, Irving, TX, April 2017.

Doctors Demystify: Nerve Reconstruction. John Peter Smith Hospital, Fort Worth, TX. May 2019.

1<sup>st</sup> Annual Rehabilitation Medicine Symposium for Healthcare Professionals, Children's Health, Plano, TX, August 2019.

## INVITED LECTURES

Panelist: "The Nerve is Injured: Now What Are You Going to Do?" Stephen Mathes Reconstructive Symposium. Plastic Surgery Educational Foundation, Dallas, TX. July 2009.

Panelist: "You Accidentally Cut a Nerve – Now What Do You Do?" American Society for Peripheral Nerve, American Society for Reconstructive Microsurgery, Boca Raton, FL. January 2010.

"Brachial Plexus Reconstruction." American Society of Hand Therapists, Texas Chapter, Corpus Christi, TX. March 2010.

Invited Discussant: "Influence of PEDOT on Neuroma Sensitivity." American College of Surgeons, Surgical Forum, Washington, D.C. October 2010.

Panelist: "Autologous Breast Reconstruction: What Is Available Today?" and Lecturer: "Revisionary Breast Procedures: Trying to Maximize Results." Frontiers of Surgical Breast Care & Reconstruction. Dallas, TX. September 2013.

"Understanding Nerve Transfers." Rare Neuro-Immunologic Disorders Symposium. Dallas, TX. October 2013.

Panelist: "Basics of Nerve Injury Evaluation and Management." American Society for Peripheral Nerve, Scottsdale, AZ, January 2016.

"Dexterous Hand Control Through Fascicular Targeting." Bass Neurosurgery Symposium: The Technologies of Neurorestoration, University of Texas Southwestern Medical Center, Dallas, TX, March 2018.

Panelist: "Science and Surgery without Boundaries – Building a Practice to Restore Sensation, Function, and Treat Pain throughout the Human Body." American Society for Peripheral Nerve, Palm Desert, CA, February 2019.

"Targeted Muscle Reinnervation" and "Reaching into the Future: Controlling Touch and Movement in Robotic Hands." Texas Society of Hand Therapists, Dallas, TX, May 2019.

"FAST-LIFE Interfacing for Sensory Feedback and Motor Control." Arm Dynamics Annual Symposium, Torrance, CA, May 2019.

"FAST-LIFE Interfacing for Sensory Feedback and Motor Control" and "Understanding Nerve Transfers." Visiting Professor, John Peter Smith Hospital Orthopaedic Residency Program, Ft. Worth, TX, May 2019.

"Brachial Plexus Repair and Reconstruction." 1<sup>st</sup> Annual Pediatric Rehabilitation Medicine Symposium for Healthcare Professionals, Children's Medical Center, Plano, TX, August 2019.

Moderator of Panel: "Ulnar Nerve Palsy: Nerve Transfers vs. Tendon Transfers." American Society of Plastic Surgeons, San Diego, CA, September 2019.

“Targeted Muscle Reinnervation” and “FAST-LIFE Interfacing for Sensory Feedback and Motor Control.” Hanger EmpowerFest, Grapevine, CA, November 2019.

Panelist: “Controversies in Nerve Surgery.” American Society for Surgery of the Hand, Virtual Annual Meeting, October 2020.

Panelist: “Radial Nerve Palsy: Nerve Transfers vs. Tendon Transfers.” American Society of Plastic Surgeons, Virtual Annual Meeting, October 2020.

Panelist: “Contemporary Management of Acute Nerve Trauma and Management of Nerve Gaps.” American Society of Plastic Surgeons, Annual Meeting, Atlanta, GA, October 2021.

“Seeking Value in Research, Education, and Service as a Clinician.” Keynote Speaker and Moderator, University of Texas Southwestern Medical Center Prosthetics and Orthotics Program, Annual Research Day, Dallas, TX, November 2021.

Panelist: “Robotic Limb: The Future of Reconstruction.” 11<sup>th</sup> Congress of the World Society for Reconstructive Microsurgery, Cancun, MX, June 2022.

“Fascicle-Specific Targeting (FAST): A Nerve-Only Strategy for Robotic Limb Control.” Seoul Symposium, Seoul National University, Seoul, Korea, November 2022.

“Fascicle-Specific Targeting (FAST): A Nerve-Only Strategy for Robotic Limb Control.” The 10<sup>th</sup> Asan Medical Center Biomedical Engineering Research Center Symposium, Asan Medical Center, Seoul, Korea, November 2022.

“FAST-LIFE: A Marriage of Technology and Intraneural Topography for Sensory and Motor Restoration in Upper Limb Amputees.” 12<sup>th</sup> Congress of the World Society for Reconstructive Microsurgery, Singapore, August 2023. Session Moderator.

## SCIENTIFIC PRESENTATIONS

Cheng J, Nath RK, Slawin D, Kadmon D, Miles R. Nerve graft restores erectile function in men after ablation of unilateral cavernous nerve. Baylor College of Medicine, James K. Alexander Research Symposium, Outstanding Clinical Poster Award. Houston, TX, 2000.

Cheng J, Weinfeld AB, Nath RK. Topographic mapping of the superior transverse scapular ligament: A cadaver study to facilitate suprascapular nerve decompression. Baylor College of Medicine, James K. Alexander Research Symposium. Houston, TX, 2000.

Cheng J, Weinfeld AB, Nath RK. Topographic mapping of the superior transverse scapular ligament: A cadaver study to facilitate suprascapular nerve decompression. Medical College of Wisconsin, Department of Plastic Surgery, Resident Research Day. Milwaukee, WI, 2002.

Cheng J, Yan JG, Zhang LL, Hunter DA, Matloub HS. A novel rodent model for long nerve gap reconstruction. Plastic Surgery Research Council. Ann Arbor, MI, 2004.

Cheng J, Yan JG, Zhang LL, Hunter DA, Matloub HS. A novel rodent model for long nerve gap reconstruction. Midwestern Association of Plastic Surgeons. Chicago, IL, 2004.

Cheng J, Yan JG, Zhang LL, Hunter DA, Matloub HS. A novel rodent model for long nerve gap reconstruction. Medical College of Wisconsin, Department of Plastic Surgery, Resident Research Day. Milwaukee, WI, 2004.

Cheng J, Yan YH, Dzwierzynski WW, Yan JG, Matloub HS, Sanger JR, Zhang LL. Pathophysiology of traumatic

- crush injury in uncrushed vascular segments. Plastic Surgery Research Council. Ann Arbor, MI, 2004.
- Cheng J, Yan YH, Dzwierzynski WW, Yan JG, Matloub HS, Sanger JR, Zhang LL. Pathophysiology of traumatic crush injury in uncrushed vascular segments. Midwestern Association of Plastic Surgeons. Chicago, IL, 2004.
- Cheng J, Yan YH, Dzwierzynski WW, Yan JG, Matloub HS, Sanger JR, Zhang LL. Pathophysiology of traumatic crush injury in uncrushed vascular segments. Medical College of Wisconsin, Department of Plastic Surgery, Resident Research Day. Milwaukee, WI, 2004.
- Cheng J, Agresti M, Yan JG, Matloub HS. Successful culture of adult Lewis rat Schwann cells. Medical College of Wisconsin, Department of Plastic Surgery, Resident Research Day, **Best Paper Award**. Milwaukee, WI, 2004.
- Cheng J, Yan JG, Zhang LL, Hunter DA, Matloub HS. A novel rodent model for long nerve gap reconstruction. American Society for the Peripheral Nerve. Fajardo, Puerto Rico, 2005.
- Cheng J, Agresti M, Yan JG, Matloub HS. Successful culture of adult Lewis rat Schwann cells. American Society for the Peripheral Nerve. Fajardo, Puerto Rico, 2005.
- Cheng J, Janis A, Yan J, Matloub H, Hiles M. A comparison of techniques for nerve decellularization. Medical College of Wisconsin, Department of Plastic Surgery, Resident Research Day. Milwaukee, WI, 2005.
- Cheng J, Matloub HS. Efficacy of the Neurotube in short gap nerve reconstruction. Medical College of Wisconsin, Department of Plastic Surgery, Resident Research Day, **Best Basic Science Paper Award**. Milwaukee, WI, 2006.
- Cheng J, Perlyn CA, Mackinnon SE. Management of complex brachial plexus tumors: 1991-2007. Washington University Division of Plastic and Reconstructive Surgery, James Barrett Brown Resident Research Day, St. Louis, MO, 2007.
- Cheng J, Perlyn CA, Mackinnon SE. Management of complex brachial plexus tumors. American Society for the Peripheral Nerve. Maui, HI, 2009.
- Cheng J, Gillenwater TJ, Mackinnon SE. Evaluation of the scratch collapse test in peroneal neuropathy. American Society for the Peripheral Nerve, Boca Raton, FL, 2010.
- Dodson R, Ryan T, Cheng J. Case study: Surgical, prosthetic, and therapeutic considerations for a patient with ipsilateral brachial plexus injury and transradial amputation. Myoelectric Conference, Fredericton, NB, 2011.
- Anand S, Kanneganti A, Desai V, Granja R, Vasudevan S, Cheng J, Keefer E, Romero MI. Regenerative multi-electrode interfacing of the tibial nerve. Neural Interfaces Conference, Salt Lake City, UT, 2012.
- Kanneganti A, Desai V, Anand S, Vasudevan S, Kim YT, Cheng J, Keefer E, Romero MI. Carbon nanotubes enhance sensitivity and safety of regenerative multi electrode interfaces. Society for Neuroscience, New Orleans, LA, 2012.
- Vasudevan S, Keefer EW, Botterman BR, Cheng J. Long-gap nerve reconstruction using decellularized nerve grafts for the treatment of peripheral nerve injuries. Society for Neuroscience, New Orleans, LA, 2012.
- Anand S, Desai V, Kanneganti A, Vasudevan S, Cheng J, Keefer E, Romero-Ortega MI. Modality specific interfacing with the peripheral nervous system. Biomedical Engineering Society, Atlanta, GA, 2012.

- Vasudevan S, Huang J, Keefer EW, Botterman BR, Cheng J. Long-gap nerve reconstruction using decellularized nerve grafts for the treatment of peripheral nerve injuries. IEEE (Dallas-EMBS) Texas Medical Device Symposium, Dallas, TX, 2012.
- Cheng J, Vasudevan S, Keefer EW. Transcutaneous connector for long-term peripheral nerve recording in rats. DARPA RE-NET Investigators Meeting, New Orleans, LA, 2012.
- Cheng J, Botterman BR, Keefer EW. Targeted surgical placement of peripheral nerve interfaces. DARPA RE-NET Investigators Meeting, New Orleans, LA, 2012.
- Vasudevan S, Keefer EW, Botterman BR, Cheng J. Detergent-free nerve decellularization for long-gap peripheral nerve reconstruction. American Society for Peripheral Nerve, Naples, FL, 2013.
- Cheng J, Botterman BR, Keefer E. Fascicle-specific placement of multichannel neural interfaces. DARPA RE-NET Government Oversight Program Review, Washington, DC, 2013.
- Bailey SH, Ramanadham S, Wong C, Mojallal A, Saint-Cyr M, Cheng J. The medial gastrocnemius flap: Is it a viable option for free muscle transfer to restore elbow flexion? Plastic Surgery Research Council, Santa Monica, CA, 2013.
- Vasudevan S, Botterman BR, Cheng J, Keefer EW. Fascicle-specific placement of MF-LIFE arrays for nerve-machine interface. Society for Neuroscience, San Diego, CA, 2013.
- Reddy G, Haddock NT, Amirlak B, Cheng J, Teotia SS. A simplified algorithm for unilateral breast reconstruction using double pedicled abdominal free flaps. American Society for Reconstructive Microsurgery, Kauai, HI, 2014.
- Cheng J, Keefer EW. Molecular profile of peripheral nerve regeneration as a therapeutic discovery tool. 2<sup>nd</sup> International Symposium on Peripheral Nerve Regeneration, Torino, ITA, 2014.
- Desai VH, Anand S, Tran M, Kanneganti A, Vasudevan S, Seifert JL, Cheng J, Keefer EW, Romero-Ortega MI. Chronic sensory-motor activity in behaving animals using regenerative multi-electrode interfaces. Engineering in Medicine and Biology Society (EMBC), IEEE. Chicago, IL, 2014.
- Law HZ, Amirlak B, Cheng J, Sammer D. Migraine headache as a novel risk factor for carpal tunnel syndrome. American Society for Peripheral Nerve, Paradise Island, Bahamas, 2015.
- Kargel J, Sammer DM, Cheng J. Treatment of acute osteomyelitis using oral antibiotics in the pediatric population. American Association for Hand Surgery, Scottsdale, AZ, 2016.
- Pezeshk R, Ben-Amotz O, Sammer DM, Cheng J. Outcomes of arthroscopic ganglionectomy in a pediatric population. American Association for Hand Surgery, Scottsdale, AZ, 2016.
- Mailey BA, Ignatiuk A, Kargel J, Kao D, Sammer D, Cheng J. The reduction maneuver is more accurate than the grind or shift tests for diagnosing thumb basal joint arthritis. American Association for Hand Surgery, Scottsdale, AZ, 2016.
- Burns J, Grainger J, Lachapelle J, Keefer E, Cheng J. Chronic high density longitudinal intrafascicular electrode arrays for peripheral nerves. North American Neuromodulation Society / Neural Interfaces Conference combined meeting, Baltimore, MD, 2016.
- Hearn T, Tanner J, Keefer E, Cheng J, Lachapelle J, Tillery SH. Viability of a novel microelectrocorticography design for intrasulcal implantation in Macaca Mulatta primary somatosensory cortex. North American Neuromodulation Society / Neural Interfaces Conference combined meeting, Baltimore, MD, 2016.
- Hearn T, Tanner J, Lachapelle J, Burns J, Grainger J, Cheng J, Keefer E, Tillery SH. Viability of a novel

microelectrocorticography design for intrasulcal implantation in Macaca Mulatta primary somatosensory cortex. Biomedical Engineering Society, Minneapolis, MN, 2016.

Lachapelle J, Bjune C, Kindle A, Czarnecki A, Segura CA, Nugent B, Sriram T, Parks P, Keefer E, Cheng J. An implantable, designed-for-human-use peripheral nerve stimulation and recording system for advanced prosthetics. IEEE-EMBS, Orlando, FL, 2016.

Hearn TN, Tanner JC, Lachapelle J, Burns J, Grainger J, Keefer E, Cheng J, Tillery SH. Viability of a novel micro-electrocorticography electrode array design for intrasulcal implantation in macaca mulatta primary somatosensory cortex. Society for Neuroscience, San Diego, CA, 2016.

Tanner J, Hearn T, Helms Tillery S, Keefer E, Cheng J. Median nerve stimulation via a FAST-LIFE array elicits a graded response in primary somatosensory cortex area 3b. Biomedical Engineering Society, Phoenix, AZ, 2017.

Overstreet C, Cheng J, Keefer E. Dexterous hand control through fascicular targeting (DEFT). Biomedical Engineering Society, Phoenix, AZ, 2017.

Keefer E, Overstreet C, Cheng J. Dexterous finger control and sensory restoration in partial hand amputees. Society for Neuroscience, Washington, DC, 2017.

Hearn T, Tanner J, Overstreet C, Cheng J, Keefer E, Helms Tillery S. Probing proprioceptive map modifications by peripheral nerve stimulation. Society for Neuroscience, Washington, DC, 2017.

Tanner J, Hearn T, Helms Tillery S, Keefer E, Cheng J. Median nerve stimulation via a FAST-LIFE array elicits a timing dependent graded response in primary somatosensory cortex area 3b. Society for Neuroscience, Washington, DC, 2017.

Cheng J, Tillery SH, Miguelez J, Lachapelle J, Keefer EW. Dexterous hand control through fascicular targeting (HAPTIX-DEFT). American Society for Surgery of the Hand, San Francisco, CA, 2017.

Cheng J, Keefer EW. Closed-loop control of robotic hand prosthetics in partial hand amputees. American Society for Reconstructive Microsurgery, Phoenix, AZ, 2018.

Cheng J, Keefer EW. Chronic peripheral nerve interfacing for closed-loop sensorimotor control of robotic hands. American Association of Plastic Surgeons, Seattle, WA, 2018.

Cheng J. Dexterous hand control through fascicular targeting (DEFT) – surgeon’s perspective. DARPA HAPTIX Investigators Meeting, Charleston, SC, 2018.

Cheng J, Keefer EW. Fascicular targeting – surgical considerations for robust, modality-specific interfacing of the peripheral nerve. 2<sup>nd</sup> International Symposium on Innovations in Amputation Surgery and Prosthetic Technologies, Vienna, Austria, May 2018.

Keefer EW, Cheng J. A prosthetic interface implemented through fascicular targeting of peripheral nerve. 2<sup>nd</sup> International Symposium on Innovations in Amputation Surgery and Prosthetic Technologies, Vienna, Austria, May 2018.

Overstreet CK, Cheng J, Keefer E. Selective multichannel electrical stimulation of peripheral nerve for sensory prostheses. Society for Neuroscience, San Diego, CA, November 2018.

Yang Z, Xu J, Nguyen A, Jiang M, Wu T, Tam WK, Zhao W, Overstreet CK, Luu D, Zhao C, Cheng JJ, Keefer EW. 15-DOF motor decoding based on a high performance PNS interface and deep neural network. Society for Neuroscience, San Diego, CA, November 2018.

- Cheng J, Overstreet C, Yang Z, Zhao Q, Keefer EW. Fast-LIFE neural interfaces provide naturalistic sensation and individual digit control during robotic hand use. American Association of Plastic Surgeons, Baltimore, MD, April 2019.
- Cheng J, Overstreet C, Yang Z, Zhao Q, Keefer EW. Motor and sensory control of robotic hands through fascicular targeting. Plastic Surgery Research Council, Baltimore, MD, May 2019.
- Halani S, Kite A, Cheng J. Surgical management and outcomes of acute flaccid myelitis (AFM). American Society for Peripheral Nerve, Ft. Lauderdale, FL, January 2020.
- Kite A, Carrasco A, Cheng J. Comprehensive hand restoration after lower brachial plexus injury using a staged approach with nerve and tendon transfers. American Society for Peripheral Nerve, Ft. Lauderdale, FL, January 2020.
- Kargel J, Cheng J. Nonoperative management of bony mallet injuries in the pediatric patient population. American Association for Hand Surgery, Carlsbad, CA, January 2022.
- Cheng J, Keefer EW, Zhao Q, Yang Z. Motor control of individual digits of a robotic hand using only signals recorded from the peripheral nerves. American Association of Plastic Surgeons Centennial Meeting, **Presidential Plenary Session**, San Diego, CA, April 2022.
- Mogharrabi B, Ratakonda R, Keefer E, Cheng J, Chhabra A. Pilot prospective pre-operative MR neurography evaluation of upper extremity amputations implanted with FAST-LIFE electrode interfaces. American Roentgen Ray Society, New Orleans, LA, May 2022.

## **ORGANIZATIONS**

American College of Surgeons	2008-Present
American Society for Surgery of the Hand	2011-Present
Plastic Surgery Research Council	2011-Present
American Society for Reconstructive Microsurgery	2013-Present
Dallas County Medical Society / Texas Medical Association	2014-Present
American Society of Plastic Surgeons	2016-Present
Dallas Society of Plastic Surgeons	2019-Present
American Association of Plastic Surgeons	2020-Present

## **COMMITTEES**

Self-Assessment Committee, American Society for Surgery of the Hand, 2009

Resident Education Committee, American Society for Surgery of the Hand, 2010-2012

Faculty Resource Committee, UT Southwestern Faculty Senate, 2012-2013

Post-Tenure Review Committee, UT Southwestern Faculty Senate, 2012

Peri-operative EHR Governance Workgroup, UT Southwestern, 2012-2013

EPIC Physician Champion / Super User Group, UT Southwestern, 2012--2014

Ad Hoc Committee for Faculty Space Planning, UT Southwestern Faculty Senate, 2013

Executive Committee, UT Southwestern Faculty Senate, 2013-2015

Zale Lipshy University Hospital OR Turnover Taskforce, 2013

Office & Collaborative Spaces Working Committee – West Campus Phase 1 Programming, UT Southwestern, 2014

UTS 125 Intellectual Property Working Groups, UT System, 2015-2016

Research Management Committee, American Society for Surgery of the Hand, 2015-2017.

Shared Governance Committee, UT Southwestern Faculty Senate, 2016

Executive Committee, UT System Faculty Advisory Council, 2016-2019

Wellness Advisory Standing Committee, UT Southwestern, 2018-2020

Dean's Committee on Physician Wellness, UT Southwestern, 2019-present

## **PATENTS**

Use of Immune Modulators to Improve Nerve Regeneration 62/871,552 (provisional)

## **GRADUATE STUDENT**

Srikanth Vasudevan, PhD in Bioengineering 2011-2013  
(Program Manager – Regulatory Science; Center for Devices and Radiological Health, FDA, Silver Spring, MD)

## **ENTREPRENEURIAL ACTIVITY**

Founder and Co-Owner, Nerves Incorporated, Inc., 2013

## **JOURNAL REVIEWER**

Journal of Hand Surgery  
Plastic and Reconstructive Surgery  
Plastic and Reconstructive Surgery – Global Open  
Eplasty  
Experimental Neurology  
Journal of Neurophysiology  
Journal of Hand and Microsurgery  
Journal of Neuroscience Methods  
Microsurgery  
Muscle & Nerve  
Neuromodulation Journal  
European Radiology

## **ADDITIONAL INFORMATION**

Medical Licensure	State of Wisconsin 2003, License #45528-020 Active Status
	State of Missouri 2006, License #2006038227 Active Status
	State of Texas 2007, License #M7109 Active Status
Board Certification	Diplomate American Board of Plastic Surgery 2009
	Certificate of Added Qualification in Hand Surgery American Board of Plastic Surgery 2010
Additional	Fellow American College of Surgeons 2012

Born March 27, 1974, in Bradford, PA