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## Education

- PhD **Case Western Reserve University**, PhD, Biomedical Engineering, May, 1999.  
 Dissertation title: "Functionally selective stimulation of peripheral nerves: Electrodes that alter nerve geometry"
- BS **Michigan Technological University**, BS, Electrical Engineering, May, 1992.

## CV Highlight Summary

- Neural interface and neural engineering expert with foci in
  - Research and development of innovative and robust neural interface device design, specifically for somatosensory function
  - Computational neural modeling
  - Pre-clinical and clinical system development
  - Clinical research and implementation
- Total-to-date Funding as PI: **\$26.4M**
- Scientific Impact (stats via Google Scholar, 6/5/17)
  - Total Citations: **3666+** h-index: **27** i10-index: **51** 2015 Citations: **487** 2016: **534** 2017 to date: **450**
  - Third most cited author in neural interfaces, One of top 40 cited authors in the entire field of neural engineering
  - Highlighted publications (Dr. Tyler's students are underlined)
    - Graczyk EL, Schiefer MA, Saal HP, Delhaye BP, Bensmaia SJ, **Tyler DJ**: The neural basis of perceived intensity in natural and artificial touch. *Sci Trans Med* 2016, 8:362ra142. (**Cover, 9 Citation to date, hundreds of international popular press articles, Altmetrics score of 560, which is in top 1% of more than 7.5M tracked research outputs**)
    - Tan DW, Schiefer M, Keith MW, Anderson JR, Tyler J, **Tyler DJ**: A neural interface provides long-term stable natural touch perception. *Sci. Transl. Med.* 2014, 6:257ra138–257ra138. (**Cover, 160 Citations to date, thousands of international popular press articles; Altmetrics score of 283, which is in top 1% of more than 7.5M tracked research outputs**)
    - Capadona JR, Shanmuganathan K, **Tyler DJ**, Rowan SJ, Weder C: Stimuli-responsive polymer nanocomposites inspired by the sea cucumber dermis. *Science*. 2008, 319:1370–1374. (**571 Citations, thousands of international popular press articles; Altmetrics score: 28, top 4% of all tracked research output**)
    - Capadona JR, Van Den Berg O, Capadona LA, Schroeter M, Rowan SJ, **Tyler DJ**, Weder C: A versatile approach for the processing of polymer nanocomposites with self-assembled nanofibre templates. *Nat. Nanotechnol.* 2007, 2:765–769. (**290 Citations**)
    - Polasek KH, Hoyen HA, Keith MW, Kirsch RF, **Tyler DJ**: Stimulation stability and selectivity of chronically implanted multicontact nerve cuff electrodes in the human upper extremity. *IEEE Trans. Neural Syst. Rehabil. Eng.* 2009, 17:428–437. (**79 Citations**)
    - **Tyler DJ**, Durand DM: Functionally Selective Peripheral Nerve Stimulation with a Flat Interface Nerve Electrode. *IEEE Trans Neural Syst Rehabil Eng* 2002, 10:294–303. (**246 Citations, Altmetrics score:10, top 9% of all tracked research output**)
- Patents (including active applications): **16** Invited presentations (international): **43 (9)**
- Post-doc mentored: **6** ♦ VA Career awardees mentored: **5** ♦ PhD Students, Graduated: **9** ♦ PhD, Current: **8** ♦ MS Students, Graduated: **8** ♦ MS, Current: **0** ♦ NIH F31 Fellows: **1** ♦ NSF Fellows: **2** ♦ NIH T32 fellows: **6** ♦ Graduate Advising Cmt: **17**
- Total number of Undergraduates advised: **165** ♦ UG Student in Research Projects: **28**
- Number of courses to which have made a contribution: **14**; Average instructor rating: **3.81**; Average course rating: **3.29**
- Significant teaching contributions: **Redesigned BME design curriculum, critical to passing ABET in 2012** ♦ **Introduced two new courses – EBME370 and EBME407** ♦ **\$200,000 NIH R25 award for design curriculum** ♦ **Created and run the Summer Design Experience and Summer Clinical Immersion program – total of 135 students and four companies have participated so far.**
- Significant service contributions: **Chair of BME UG Education Cmt, AY2012 & AY2013 – Changed BME curriculum to four major tracks** ♦ **CSE Budget committee 2009-2011, Chair 2011-2012** ♦ **CSE Strategic Planning Committee, 2011-** ♦ **EMAE Dept Chair Search Cmt Member, 2013-14** ♦ **Faculty Senate Finance Cmt 2011-2013** ♦ **Univ Strategic Planning Cmt, 2008** ♦ **Assoc. Dir. Advanced Platform for Technology Center of Excellence, 2005-Present** ♦ **Founded and organize Nat'l Neural Engineering Workshop meeting, 2011-present** ♦ **Chair and organize IEEE and BMES conference sessions** ♦ **Serve on FDA Device Policy Panels** ♦ **Served on more than thirty proposal review panels for NIH, VA, NSF, CURE, DOD, others – have been chair for a review panel as part of the BRAIN initiative** ♦ **Scientific judge for community science fairs and Ohio State Science Fair 2014** ♦ **Mentor local HS students in my lab.**

## Academic Appointments

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|-----------------------|---|
| July 2016 – Present   | Kent H. Smith II Professor of Biomedical Engineering (Primary appt.)<br>Dept. of Biomedical Engineering, Case Western Reserve School of Eng.<br><b>Case Western Reserve University</b> , Cleveland, OH  |
| Jan 2005 – Present    | Associate Director (secondary appointment)<br>Cleveland Advanced Platform Technology Center, Cleveland, OH<br><b>A National Center of Excellence of US Dept of Veterans Affairs</b><br>Rehabilitation Research and Development Service          |
| July 2015 – June 2016 | Elmer Lincoln Lindseth Associate Prof. of Biomedical Eng<br>Department of Biomedical Eng., Case Western Reserve School of Eng.<br><b>Case Western Reserve University</b> , Cleveland, OH  |
| July 2009 – July 2015 | Associate Professor with Tenure (primary appt.)<br>Department of Biomedical Eng., Case Western Reserve School of Eng.<br><b>Case Western Reserve University</b> , Cleveland, OH   |
| Jan 2002 – Present    | Principal Investigator (secondary appointment)<br>Cleveland Functional Electrical Stimulation Center, Cleveland, OH<br><b>A National Center of Excellence of US Dept of Veterans Affairs</b><br>Rehabilitation Research and Development Service |
| July 2011 – July 2013 | Vice-Chair for Undergraduate Education<br>Department of Biomedical Eng., Case Western Reserve School of Eng.<br><b>Case Western Reserve University</b> , Cleveland, OH  |
| Jan 2007 – June 2009  | Nord Distinguished Assistant Professor (primary appointment),<br>Department of Biomedical Engineering, Case School of Engineering,<br><b>Case Western Reserve University</b> , Cleveland, OH.   |
| Aug 2004 – Dec 2006   | Assistant Professor (primary appointment),<br>Department of Biomedical Engineering, Case School of Engineering,<br><b>Case Western Reserve University</b> , Cleveland, OH.  |
| Aug 2003 – Aug 2004   | Adjunct Assistant Professor,<br>Department of Biomedical Engineering, Case School of Engineering,<br><b>Case Western Reserve University</b> , Cleveland, OH.  |

## Industrial Appointments

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|             | <b>NeuroControl Corporation, Cleveland, OH.</b>              |
| 2001 – 2002 | Manager, Software Engineering                                |
| 1998 – 2001 | Biomedical Engineer III, Research and Development            |
| 1995 – 2016 | <b>Bear Software, LLC</b> , Cleveland, OH, Founder/President |

### *Other Professional Training*

Medical Device Software: A Practical Guide to Software Process Control and Documentation, Underwriters Laboratories, Northbrook, IL, 2001.

## Professional Societies

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IEEE Engineering in Medicine and Biology Society (1992-Present)  
American Association for Advancement of Science (2001-Present)  
Biomedical Engineering Society (2004 – Present)  
Material Research Society (2005 – Present)  
Tau Beta Pi (1990 – Present)

## Honors and Awards

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- **Fellow, American Institute of Medical and Biological Engineers**, 2017
- **Kent H. Smith Professor of Biomedical Eng**, Case Western Res Univ, 2016 -
- **Research Career Scientist**, Dept. of Veterans Affairs, Rehabilitation Research & Development Service, Oct. 2016-Sept. 2021
- **Elmer Lincoln Lindseth Associate Professor of Biomedical Eng**, Case Western Res Univ, 2015
- **St. Patrick's Day Science Medal Award Celebration**, Invited by Science Foundation Ireland to attend event in Washington DC to honor and Irish Scientist work in the US. Attendees include the US Ambassador to Ireland and the Irish An Taoiseach (Prime Minister), as well as reception hosted by the Ambassador, 2015
- **White House BRAIN Conference**, White House Complex, Washington, DC, 30 Sept 2014
- **Neurotechnology Researcher of the Year**, Neurotech Leaders Forum, 2014
- **Carl F. Wittke Award** (Nominated), Excellence in UG Teaching, CWRU, 2012
- Nominated for BMES Society-Case Chapter, Outstanding BME UG Professor, 2011
- **Carl F. Wittke Award** (Nominated), Excellence in UG Teaching, CWRU, 2009
- **Nord Distinguished Assistant Professor**, Case Western Reserve Univ, 2007-2010.
- **Research Award**, Case School of Engineering, 2008
- **Undergraduate Teaching Award**, Case School of Engineering, 2008.
- **Nat'l Academies Keck Futures Initiative – Smart Prostheses**, 2006.
- **Scholarship 2<sup>nd</sup> Joint US-China Neural Interfaces Workshop**, Kunming, China, 2006
- **Outstanding Professor** by the Sisters of AXΩ, CWRU, 2006.
- **Whitaker Foundation Grad. Res. Fellowship**, CWRU, 1993-1998.
- **National Science Foundation Grad. Fellowship**, CWRU, 1993.
- **NIH Graduate Trainee Fellowship**, Case Western Reserve University, 1992-1993.
- **Michigan Technological Univ Scholar**, Michigan Technological Univ, 1988-1992.
- **Michigan Technological University Merit Award**, Michigan Tech Univ, 1992.

## Professional Service

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### *Conference Organization and Service*

- Co-Chair, IEEE Biomedical Circuits and Systems Int'l Conference (IEEE-BioCAS) to be held in Cleveland in 2018.
- ClevelandNEW, Conference Chair, Cleveland, Ohio, founder in 2011, chaired in 2013, 2015, 2017, 2019
- Session Moderator, FDA Workshop on BCI devices and translation, Nov 2014.
- Session Co-Moderator, Translational Working Group Meeting on Clinical BCI Systems, 27 Feb 2014.
- Biomedical Engineering Society (BMES) Annual Fall Meeting, Session Co-Chair (with B. Wheeler), "Neural Control and Modeling," Seattle, WA, September 2013.
- Session Chair, Sensory Neuroprostheses, Neural Interfaces Conference, Salt Lake City, Utah, June, 2012.
- Participant at Allen/Gatsby/Kavli Workshop, "Opportunities at the Interface of Neuroscience and Nanoscience," at the Kavli Royal Society International Center, UK in 2011 (conference resulted in the President's BRAIN initiative starting in 2013).
- Session Chair, Neural Tissue Engineering Track, BMES, Hartford, CT, 2011.
- IEEE-EBMS Engineering in Medicine and Biology Society, 32<sup>st</sup> Annual International Conference, Track Chair, Track 9.6, "Safety and Medical Device Design", Buenos Aires, Argentina, Sept. 2010.
- IEEE-EBMS Engineering in Medicine and Biology Society, 31<sup>st</sup> Annual International Conference, Track Chair, Track 9.6, "Safety and Medical Device Design", Minneapolis, MN, Sept. 2009.
- IEEE-EBMS Engineering in Medicine and Biology Society, 31<sup>st</sup> Annual International Conference, Session Co-Organizer (with P. Mohseni), "Neural Recording", Minneapolis, MN, Sept. 2009.
- Biomedical Engineering Society (BMES) Annual Fall Meeting, Session Co-Chair (with K. Gustafson), "Clinical Implementation of Medical Devices," Pittsburgh, PA, October 2009.
- MBEC (Midwest Biomedical Engineering Conference) – Co-ops and Internships Panel Moderator, Cleveland, OH, 2007
- MRS (Material Research Society) – Annual Spring Meeting, San Francisco, CA: Invited Speaker, Session Chair (2006), Co-Organizer (with D. Kipke, S. Lacour, and B. Morrison) for Symposium U: "Advanced Materials for Neural Interfaces," Session Chair (2007).
- IEEE-EMBS Engineering in Medicine and Biology Society 28<sup>th</sup> Annual International Conference, Associate Editor, Track 10.0 Neural and Rehabilitation Engineering, and Neuromuscular Systems, New York, New York, Aug 30 – Sept 3, 2006

### *Proposal Review Panels*

- NIH BRP Review panel ZRG1 SBIB-Z(55) R, 2015

- T32 Proposal Review panel ZNS1 SRB-L(03), 2015
- Chair, NIH BRAIN review panel, 2015
- CDMRP review panel, 2015
- VA Merit Review panel, 2014, 2015
- NIH BRAIN Review panel, 2014
- NSF ERC Site Visit Team, Center for Sensorimotor Neural Engineering, 2014, 2015, 2016
- VA CDA Panel, Fall 2012
- NIH CSR R25 Panel, Biomedical Engineering Design Education, Fall 2012.
- PVA Panel, Fall 2012.
- NIH SSS-5, Muscular, Skeletal, and Dental Integrated Review, Feb 2002 – Feb 2004
- NIH BDCN-MRS, Invited Temporary Member, March 2004.
- NIH BDCN-K (10), "Clinical Neurophysiology, devices and Neuroprosthetics," Feb 2005
- NIH BDCN-E (16 M), "Clinical Neuroscience and Disease," March 2005
- NIH BDCN-K (10), "Clinical Neurophysiology, devices and Neuroprosthetics," June 2005.
- NIH BDCN-K (10), "Clinical Neurophysiology, devices and Neuroprosthetics," Oct 2005.
- NSF Mail Review, Dec 2005.
- NIH BDCN-K (10), "Clinical Neurophysiology, devices and Neuroprosthetics," Feb 2006.
- NIH BDCN-K (10), "Clinical Neurophysiology, devices and Neuroprosthetics," June 2006.
- NIH BDCN-K (10), "Clinical Neurophysiology, devices and Neuroprosthetics," Nov 2006.
- NIH BDCN-K (10), "Clinical Neurophysiology, devices and Neuroprosthetics," Feb 2007.
- Dept. Veteran's Affairs RR&D Ad Hoc Special Emphasis Panel, March 2007.
- NIH ZNS1 SRB-M (44), "NINDS K99 Award Review Panel," March 2007.
- Shriner's Hospital System, CURE, invited review, August 2007.
- NIH BDCN-E (10), "Clinical Neurophysiology, devices and Neuroprosthetics," Oct 2007.
- NIH BDCN-E (10), "Clinical Neurophysiology, devices and Neuroprosthetics," Feb 2008.
- NIH BDCN-E (10), "Clinical Neurophysiology, devices and Neuroprosthetics," June 2008.
- NIH ETTN-A (03), "Neural Technology," July 2008.

### ***Ad Hoc Grant Proposal Reviews***

National Science Foundation (NSF)

National Institutes of Health (NIH)

Dept. of Veteran's Affairs, Rehabilitation Research and Development (VA RRD)

### ***Ad Hoc Journal Reviews***

Science Translational Medicine

Nature Reports

Neuromodulation

IET Systems Biology

Biomaterialia

Archives of Physical Medicine and Rehabilitation

Journal of Neuroscience Methods

Clinical Anatomy (Wiley)

IEEE Trans BME (IEEE)

IEEE Trans Neural Sys and Rehab Eng (IEEE)

Journal of Rehabilitation Research and Development (VA)

Journal of Neural Engineering (IoP)

### ***Collaborations Outside of Case***

Lee Miller (Northwestern University)

Sliman Bensmaia (Univ of Chicago)

Philip Sabes (Univ Cal, San Francisco)

Linda Resnik (Providence VAMC, Brown University)

Forrest Pape & Tim Denison (Medtronic, Minneapolis, MN)

Sat Pannu (Lawrence Livermore National Lab)

Daniel Merrill & Shane Gillroy (Ripple, LLC, Salt Lake City, UT)

Douglas Weber (University of Pittsburgh)  
Doug Shire (Cornell University)  
Paul Galvin (Tyndall National Lab, Cork, Ireland)  
Anil Harapanahalli & Bryan McLaughlin (Draper, Boston, MA)  
Michael Broniatowski (University Hospitals)  
Ronald Triolo (VA Medical Center)  
Harry Hoyen (MetroHealth Medical Center)  
Michael Keith (MetroHealth Medical Center)  
David Zealear (Vanderbilt University)

## **University Service**

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### ***Committee and Other Service Assignments***

#### Case School of Engineering

Department of Biomedical Engineering, Undergraduate Education Committee, Member, 2004-present, Chair 2011-2013 (Responsible for redesigned BME Design Sequence; bioelectricity UG sequence chair; responsible for several undergraduate recruiting events; BME High School Scholarship cmt (2006); BME HS Visitor cmt.)  
EMAE Department Chair Search Committee, 2013-2014  
CSE Strategic Planning Committee, 2012-Present.  
CSE Budget Committee, 2009-2011, Chair 2011-2012  
Chair of Student Recruitment Sub-committee of BME UGEC, 2007-2011.  
BME Freshman contact, 2007 – Present.  
BME Co-op Advisor, 2005 – Present.  
BME Sages Advisor, 2006 – 2011.  
Department of Biomedical Engineering, Judge, ShowCASE Poster competition, 2004.  
ENGR 131 Oversight Committee, Member, 2006.

#### University-Wide

Faculty Senate, 2017-2020  
Faculty Senate Finance Committee, 2011-2013.  
Member, University Strategic Planning Committee for Experiential Learning/Innovative Curriculum Task Force, 2008.  
Co-Chair, Neural Engineering and Rehabilitation Lectures, Annual Conference, 2004 – Present.  
Co-organizer, Neural Prosthesis Seminar Series, 2002 – 2006.

#### VA Medical Center

Chair, Conflict of Interest Sub-Committee of R&D Committee, 2005-2008.

### ***Interdisciplinary Center and Research Group Affiliations***

Cleveland Functional Electrical Stimulation Center (FESC), Member, 2002 – Present.  
Cleveland Advanced Platform Technology Center (APT), Associate Director, 2005 – Present.  
Functional Neural Interface Lab (FNI), Director, 2004 – Present.  
Neural Engineering Center (NEC), Member, 2002 – Present.  
VA Neural Interfacing and Advanced Biomaterials Laboratory, Co-Director, 2006 – 2014.

## **Community Outreach and Service**

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Judge, The Ohio Academy of Science, Akron District Science Fair, 2017.  
Judge, The Ohio Academy of Science, State Science Day, 2014.  
Judge, Hathaway-Brown School Science Fair, Feb. 2007, 2010.  
Judge, St. Paschal-Baylon School Science Fair, Feb 2008, 2009, 2010, 2011, 2012, 2013.  
Invited Speaker, Great Lakes Science Center, Educators Evening, October, 2007.  
Invited Speaker, Great Lakes Science Center, April 2008.

See supplemental file: "Service Statement – Tyler Prof Package.docx" for more information.

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## Research

### Research Interests

- Translation of neural interfaces to clinical implementation and commercial success
- Neural interfaces for somatosensory function restoration, autonomic nervous system, and pain management
- Neuroprosthesis for dynamic control of aspiration, design and clinical implementation
- Neuroprosthesis design and implementation, particularly nerve electrodes, for restoration of function in SCI and Stroke patients
- Biomimetic, integrated neural interfaces, utilizing nano- and micro- fabricated systems

See supplemental file: "Research Statement – Tyler Prof Package.docx" for more details.

### Research Support

See supplemental file: "Tyler Support Tables.docx"

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## Teaching and Mentorship

See supplemental file: "Tyler CV – Teaching and Mentorship.docx"

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## Bibliography

**Metrics:** *Google Scholar (since 2007)*  
*h-index:* 27  
*i10-index:* 51  
*Total citations:* 3666+  
*Citations per year:* Steady growth since 2000. 474 in 2015, 534 in 2016

*Top 5 papers (not including patents):* >1200 citations

*Top 5 (including patents):* >1300 citations

**Notes: Supervised students and researchers indicated by bold face.**

*Interdisciplinary studies indicated by [I].*

*Translational studies indicated by [T].*

*CV name is underlined (DJ Tyler) for ready identification.*

### Dissertation

D. J. Tyler, "Functionally selective stimulation of peripheral nerves: Electrodes that alter nerve geometry," Ph.D., Case Western Reserve University, May 1999.

### Peer-Reviewed Journal Articles (reverse chronological order)

1. **Brill, N**, Naufel SN, **Polasek KH**, Ethier C, Cheesborough J, Agnew S, Miller LE, Tyler DJ, "Evaluation of high-density, multi-contact nerve cuffs for activation of grasp muscles in monkeys," J Neural Eng. 2017 Aug 21. doi: 10.1088/1741-2552/aa8735. [Epub ahead of print] PubMed PMID: 28825407.
2. **Christie BP**, **Freeberg M**, Memberg WD, Pinault GJC, Hoyen HA, Tyler DJ, Triolo RJ. "Long-term stability of stimulating spiral nerve cuff electrodes on human peripheral nerves." J Neuroeng Rehabil. 2017 Jul 11;14(1):70. doi: 10.1186/s12984-017-0285-3. PubMed PMID: 28693584; PubMed Central PMCID: PMC5504677.
3. **Freeberg M**, Stone M, Triolo R, Tyler DJ, (2017) "The design of and chronic tissue response to a composite nerve electrode with patterned stiffness," J Neural Eng, doi: 10.1088/1741-2552/aa6632.
4. **Brill, N**, Tyler, D.J., (2017) "Quantification of Human Upper Extremity Nerves and Fascicular Anatomy," *Muscle & Nerve*, 56(3):463-471, doi: 10.1002/mus.25534.
5. **Graczyk EL**, **Schiefer MA**, Saal HP, Delhaye BP, Bensmaia SJ, Tyler DJ, (2016), "Then neural basis of perceived intensity in natural and artificial touch," Sci Trans Med, 8(362):362ra142 (Featured on Cover).
6. Peterson EJ, Dinsmoor, DA, Tyler, DJ, Denison, TJ, (2016) "Stimulation artifact rejection in closed-loop, distributed neural interfaces," European Solid-State Circuits Conference: 42<sup>nd</sup>, 233-236.
7. Tyler, DJ, (2016), "Restoring the human touch: Prosthetics imbued with haptics give their wearers fine motor control and a sense of connection," IEEE Spectrum, 53(5):28-33 (Featured on Cover).
8. Dweiri, Yazan M., MA Stone, DJ Tyler, GA McCallum, DM Durand, (2016) "Fabrication Method of High Contact-Density, Flat Interface Nerve Electrode for Interfacing with the Peripheral Nervous System," *JoVE*, e54388.
9. Bowsher, Kristen; Civillico, Eugene; Coburn, James; Collinger, Jennifer; Contreras-Vidal, Jose; Denison, Timothy; Donoghue, John; French, Jennifer; Geztzoff, Natalie; Hochberg, Leigh; Hoffmann, Michael; Judy, Jack; Kleitman, Naomi; Knaack, Gretchen;

- Krauthamer, Victor; Ludwig, Kip; Moynahan, Megan; Pancrazio, Joseph; Peckham, Hunter; Pena, Carlos; Pinto, Vivek; Ryan, Tiffany; Saha, Devjani; Scharen, Hilda; Shermer, Shawn; Skodacek, Ken ; Takmakov, Pavel; Tyler, Dustin; Vasudevan, Srikanth; Wachrathit , Kelliann; Weber, Douglas; Welle, Cristin; Ye, Meijun, (2016) "Brain-Computer Interface Devices for Patients with Paralysis and Amputation: A Meeting Report," *J Neural Eng*, 13(2):023001.
10. **Schiefer, Matthew S., D Tan**, SM Sidek, and D Tyler, (2016) "Sensory feedback by peripheral nerve stimulation improves task performance in individuals with upper limb loss using a myoelectric prosthesis," *J Neural Eng*, 13(1):016001, PMID:26643802, PMCID: PMC5517302.
  11. **[T] Tan D, Tyler D**, Sweet J, Miller J. (2015) "Intensity Modulation: A Novel Approach to Percept Control in Spinal Cord Stimulation." *Neuromodulation*. doi: 10.1111/ner.12358. [Epub ahead of print] PubMed PMID: 26479774.
  12. Nguyen JK, Jorfi M, Buchanan KL, Park DJ, Johan Foster E, Tyler DJ, Rowan SJ, Weder C, Capadona JR. (2015) "Influence of resveratrol release on the tissue response to mechanically adaptive cortical implants." *Acta Biomater*. PubMed PMID: 26553391.
  13. **[T] Tyler DJ**. (2015) "Neural interfaces for somatosensory feedback: bringing life to a prosthesis." *Curr Opin Neurol*. 28(6):574-81 PMID: 26544029, PMCID: 5517303.
  14. **[T] Tan, Daniel W., M. Schiefer**, M. Keith, J. R. Anderson, J. D. Tyler, D. J. Tyler, (2015) "Stability and selectivity of a chronic, multi-contact cuff electrode for sensory stimulation in human amputees." *J. Neural Eng*. 12, [26002](#), PMID:25627310, PMCID: PMC5517311. (*JNE Featured Article*)
  15. **[T] Hadley**, Aaron J, K.R. Krival, A. L. Ridgel, **E. C. Hahn**, D. J. Tyler, (2015) "Neural network pattern recognition of lingual-palatal pressure for automated detection of swallow," *Dysphagia*, 30(2):176-87, PMID: 25618539.
  16. **[T] Tan, Daniel W., M. Schiefer**, M. Keith, J. R. Anderson, J. D. Tyler, D. J. Tyler, (2014) "Neural interface provides stable, natural, touch perception to prosthetic hand users for more than one year," *Science Translational Medicine*, 6 (257):138, PMID: 25298320, PMCID: PMC5517305. (*Featured on cover*).
  17. **[T] Hahn, E. C., A. Hadley, D. J. Tyler**, N. Maronian, (2014) "Clinical Feasibility Trial for Transtracheal Stimulation of Vocal Fold Closure in Sensate Human Subjects," *Otolaryngol. Neck Surg.*, 151, P187–P187.
  18. Nguyen, J.K., D.J. Park, J.L. Skousen, A.E. Hess-Dunning, D.J. Tyler, S.J. Rowan, C.W. Weder, J.R. Capadona, (2014) "Mechanically-compliant intracortical implants reduce the neuroinflammatory response," *J. Neural Eng*. 11(5):5601, PMID: 25125443.
  19. **[I] Hess-Dunning, A.E., D.J. Tyler, J. P. Harris**, J.R. Capadona, C. Weder, S.J. Rowan, C.A. Zorman, (2014) "Microscale Characterization of a Mechanically Adaptive Polymer Nanocomposite With Cotton-Derived Cellulose Nanocrystals for Implantable BioMEMS," *J. Microelectromechanical Syst.* 23(4), 774–784 (2014).
  20. **[T] A. J. Hadley, P. Thompson, I. Kolb, E. C. Hahn**, and D. J. Tyler, (2014) "Targeted Transtracheal Stimulation for Vocal Fold Closure," *Dysphagia*, 29(3), 346-54, PMID: 24562508.
  21. **Peterson, E., D.J. Tyler**, (2014) "Motor neuron activation in peripheral nerves using infrared neural stimulation," *J Neural Eng*, 11 (1):016001, PMID: 24310923.
  22. **Harris, J., Tyler, D.J.**, (2014), "Biological, mechanical, and technological considerations affecting the longevity of intracortical electrode recordings," *Crit Rev Biomed Eng*, 41(6), 435-56.
  23. **[I] Hess-Dunning, A.E., D. J. Tyler**, C. A. Zorman, (2013) "Stretchable thin-film metal structures on a stimuli-responsive polymer nanocomposite for mechanically-dynamic microsystems," *Solid-State Sensors, Actuators and Microsystems (TRANSDUCERS & EUROSENSORS XXVII)*, Transducers & Eurosensors XXVII: The 17th International Conference, pp. 2229–2232.
  24. **Hess, A, Potter, K, Tyler, DJ, Zorman, C, Capadona, J** (2013) "Environmentally-controlled microtensile testing of mechanically-adaptive polymer nanocomposites for ex vivo characterization," *J Vis Exp*, (78):e50078.
  25. **Schiefer, M., M. Freeberg, G. J. C. Pinault, J. Anderson, H. Hoyen, D. J. Tyler**, and R. J. Triolo, (2013) "Selective activation of the human tibial and common peroneal nerves with a flat interface nerve electrode," *J. Neural Eng.*, vol. 10, no. 5, p. 056006, Oct, PMID: 23918148.
  26. **[T] Fisher, L.E., Tyler, D.J. & Triolo, R.J.** (2013), "Optimization of selective stimulation parameters for multi-contact electrodes.", *Journal of Neuroengineering and Rehabilitation*, vol. 10, pp. 25.
  27. **[T] Hadley, A.J., Kolb, I. & Tyler, D.J.** (2013), "Laryngeal elevation by selective stimulation of the hypoglossal nerve", *Journal of Neural Engineering*, vol. 10, no. 4.
  28. **[I] Duke, A.R., Peterson, E., Mackanos, M.A., Atkinson, J., Tyler, D., Jansen, E.D.**, (2012) "Hybrid electro-optical stimulation of the rat sciatic nerve induces force generation in the plantarflexor muscles," *Journal of Neural Engineering* 9 (6) art. no. 066006, PMID: 23186608.
  29. **[I] Capadona, J. R., Tyler DJ**, Zorman CA, Rowan SJ, Weder C, (2012) "Mechanically adaptive nanocomposites for neural interfacing," *MRS Bulletin*, 37(6), 581-589.
  30. **[T] Broniatowski M, Grundfest-Broniatowski S, Hahn EC, Hadley AJ, Tyler DJ**, Tucker HM, (2012) "Selective intraoperative stimulation of the human larynx," *Laryngoscope*. Sep;122(9):2015-22. doi: 10.1002/lary.23464. Epub 2012 Aug 9, PMID: 22886746.
  31. **[T] Schiefer, Matthew A., Dustin J. Tyler**, Ronald Triolo, (2012) "Probabilistic modeling of selective stimulation of the human sciatic nerve with a flat interface nerve electrode," *J Comput Neurosci*, Epub Jan 6, 33(1):179, PMID: 22222951, PMCID: PMC3357453

32. [I] **Harris, James P.**, Jeffrey R Capadona, Robert H Miller, Brian C Healy, Kadiravan Shanmuganathan, Stuart J Rowan, Christoph Weder, Dustin Tyler, (2011) "Mechanically adaptive intracortical implants improve the proximity of neuronal cell bodies," *J Neural Eng.* 2011 Dec;8(6):066011. Epub Nov 2. PMID: 22049097, NIHMSID: 337131.
33. **Peterson, Erik J., Olivier Izad**, Dustin Tyler, (2011) "Predicting axon activation using extracellular field shape characteristics," *J Neural Eng.* Aug;8(4):046030. Epub 2011 Jul 13. PMID: 21750371, PMCID: PMC3197268.
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### **Reviews and Non-referred Articles**

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### **Book Chapters**

1. Tyler DJ, 2017, "Sensory Neuroprosthetics," *Textbook of Neuromodulation*, 2<sup>nd</sup> Edition, ES Krames, A Rezai, PH Peckham, eds, 2017.
2. Tyler DJ, 2017, "Electrode for the Neural Interface," *Textbook of Neuromodulation*, 2<sup>nd</sup> Edition, ES Krames, A Rezai, PH Peckham, eds, 2017.
3. Tyler DJ, 2017, *Peripheral Nerve Stimulation. Neuroprostheses – Theory and Practice*, 2<sup>nd</sup> Edition, 2017.
4. **Schiefer, M.A.** & Tyler, D.J., 2015. Computer Models of Peripheral Nerves. *Nerves and Nerve Injuries*, 2, pp.1021–1032.
5. Tyler, D.J., **Polasek, K.H.** & **Schiefer, M.A.**, 2015. Peripheral Nerve Interfaces. *Nerves and Nerve Injuries*, 2, pp.1033–1054.
6. Tyler, D.J., "Neuroprostheses for management of dysphagia resulting from cerebrovascular disorders", in *Operative Neuromodulation - Volume 1: Functional Neuroprosthetic Surgery. An Introduction*, D.E. Sakas, B.A. Simpson, and E.S. Krames, Editors. 2009, Springer Verlag: New York.
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### **Abstracts and Professional Conference Presentations**

1. **Graczyk EL, Schiefer MA**, Saal HP, Delhaye BP, Bensmaia SJ, Tyler DJ, (2016) "Fascicular organization affects tactile sensation evoked from peripheral nerve cuff stimulation," 46<sup>th</sup> Annual Society for Neuroscience Meeting, Nov 12-16, San Diego, CA.
2. **Schiefer MA, Cuberovic I, Graczyk EL, Tyler DJ**, (2016), "Muscle contraction is significantly associated with proprioception restored with electrical nerve stimulation with a Flat Interface Nerve Electrode (FINE)," 46<sup>th</sup> Annual Society for Neuroscience Meeting, Nov 12-16, San Diego, CA.
3. **Cuberovic I, Schiefer MA**, Anderson J, Tyler DJ, (2016), "Developing patient-specific, in-situ computational models using intraoperative ultrasound," 46<sup>th</sup> Annual Society for Neuroscience Meeting, Nov 12-16, San Diego, CA.
4. Tyler DJ, Graczyk EL, Schiefer MA, Cuberovic I, Malone K, Keith M, Anderson J, "Evolution of human-in-the-loop neuroprosthesis – toward an artificial hand," Invited symposium talk, 46<sup>th</sup> Annual Society for Neuroscience Meeting, Nov 12-16, San Diego, CA.
5. Rowan, S.J., JR Capadona, C Weder, AE Hess, DJ Tyler, CA Zorman, (2014), Mechanically dynamic composites as biocompatible implants. ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, 248.
6. Three talks (Tyler, Schiefer, Graczyk) at MEC, New Brunswick Canada, 2014
7. **Schiefer, M.A., DW Tan, E Graczyk, MW Keith, JR Anderson, DJ Tyler**, "Assessing Functional Improvements with Varied Sensory Restoration in Upper Extremity Amputees," *Neural Interfaces Workshop*, Dallas, TX, June, 2014.
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9. **Graczyk, E, DW Tan, MA Schiefer, DJ Tyler**, "Perception of visual-tactile synchrony when tactile sensations are elicited by peripheral nerve stimulation," *Neural Interfaces Workshop*, Dallas, TX, June, 2014.
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81. **Tyler, DJ** and DM Durand, "Combined Modulation of Pulse Width and Pulse Amplitude to Enhance Functional Selectivity of Neural Stimulation," Proc. of IEEE-EMBS 17th Int'l Conference, Montreal, Quebec, Canada, 1995.
82. **Tyler, DJ** and DM Durand, "Selective Activation of Fasciculated Peripheral Nerves by an Interfascicular Electrode," Engineering Foundation Conference on Neural Prostheses, Motor Systems IV, Mt. Sterling, Ohio, 1994.
83. **Tyler, DJ** and DM Durand, "A Method of Quantifying Electrode Performance Based on Non-Invasive Three dimensional Isometric Torque Data," Proc. of IEEE-EMBS 16th Int'l Conference, Baltimore, MD, 1994.
84. **Tyler, DJ** and DM Durand, "Design and Acute Tests of a Slowly Penetrating Interfascicular Nerve Electrode," Biomedical Engineering Research Day, Case Western Reserve University, Cleveland, OH, 1994.
85. **Tyler, DJ** and DM Durand, "Design and Acute Test of a Radially Penetrating Interfascicular Nerve Electrode," Proc. of IEEE-EMBS 15th Int'l Conference, San Diego, CA, 1993.

### **Invited Professional Presentations**

1. Tyler DJ, "Sensory, Motor, System: Creating a Replacement Sensorimotor System for Prosthetics," 7<sup>th</sup> International Conference: Advances in Orthopaedic Osseointegration," San Diego, CA, Mar 18, 2017.
2. Tyler DJ, "Latest Advances in Sensory Restoration and Control following UE Limb Loss," Hanger Education Fair, Las Vegas, NV, Feb 2, 2017.
3. Tyler DJ, "Naturalistic Sensation and Control in Mixed Reality: The Next Interface between Man and Machine," TTI: Vanguard [next] – The Advanced Technology Conference Series, San Francisco, CA, Dec 5-7, 2016.
4. Tyler DJ, Graczyk EL, Schiefer MA, Cuberovic I, Malone K, Keith M, Anderson J, "Evolution of human-in-the-loop neuroprosthesis – toward an artificial hand," Invited symposium talk, 46<sup>th</sup> Annual Society for Neuroscience Meeting, Nov 12-16, San Diego, CA.
5. Tyler DJ, "Restoring Sensation and Control in Prosthetics," Ossur-Ottobock Treaty Meeting, Reykjavik, Iceland, Oct 29, 2016.
6. Tyler, D.J., "Development of neural interfaces that provide long-term stable natural touch perception," 10<sup>th</sup> Forum of Neuroscience (FENS), Copenhagen, Denmark, July 2-6, 2016.
7. Tyler, D.J., "Restoring Naturalistic Sensation and Control following Limb Loss," Invited talk, Georgia Inst Tech, Sept 2, 2016.

8. Tyler, D.J., "Neural Interfaces Restore the Sense of Touch and Position Following Limb Loss," Keynote address, *1<sup>st</sup> International Symposium on Innovations in Amputation Surgery and Prosthetic Technologies (IASPT)*, Chicago, IL, May 12-13, 2016.
9. Tyler, D.J., "Restoring Touch with Neural Interfaces," University of Central Florida, April 7, 2016
10. Tyler, D.J., "Restoring Touch: Development and Implementation of Advanced Neural Interface Technology," Rehabilitation Institute of Chicago / Northwestern University, Chicago, IL, March 18, 2016.
11. Tyler, D.J., "The touch of a hand: Neural interfaces restore the sense of touch and position following limb loss," Invited Keynote, *World Haptic Conference, IEEE Haptics Society*, Chicago, IL, June 2015.
12. Tyler, D.J., "Long-term Restoration of Sensation with Peripheral Nerve Electrodes," University of Toronto, CA, Feb 25, 2015.
13. Tyler, D.J., "Convergence of MEMS, Material Science, and Neuroscience: Advancing Towards an Artificial Neuron," invited keynote at Ireland Technology Days, Tyndall Institute, Cork, Ireland, 17 Nov 2014.
14. Tyler, D.J., "The Science and Clinical Implementation of Neural Interface Technology," invited speaker, Orthopedic Rehabilitation Research Conference, Cleveland, OH, 24 Oct 2014.
15. Tyler, D.J., "Innovation in Neurotechnology: Sensation," Neurotech Leaders Forum, San Francisco, CA, 21 Oct 2014.
16. Tyler, D.J., "The Science and Clinical Implementation of Neural Interface Technology," invited talk at the Feinstein Institute, NY, 28 Sept 2014.
17. Tyler, D.J., "Getting Back in Touch with the World: Restoring Sensation after Limb Loss," Science Café Cleveland, Cleveland, OH, 11 August 2014.
18. Tyler, D.J., "New Concepts in Patterned Electrical Stimulation Result in Restoration of Natural, Complex Sensory Perception," Neural Interfaces Conference, Dallas, TX, June, 2014.
19. Tyler, D.J., "Peripheral nerve stimulation for restoration of sensation," Invited panelist with Drs. Miller, Bensmaia, Sabes, and Gaunt at 2014 Int'l conference for Society of the Neural Control of Movement, Amsterdam, Netherlands, April, 2014.
20. Tyler, D.J., "Connecting With The World: Electrical Stimulation To Provide A Sense Of Touch For Persons With Limb Loss," Neural Prosthesis Seminar Series, Cleveland, OH, April, 2014.
21. Tyler, D.J., "Long-Lasting Neural Interfaces for Sensory Feedback," Annual Hanger Educational Fair, Las Vegas, NV, Feb, 2014.
22. Tyler, D.J., "Challenges at the Neural Interface: Mechanics," IEEE-Neural Engineering, San Diego, CA, Nov, 2013.
23. Tyler, D.J., "Peripheral Nerve Stimulation for Sensory Restoration," International Brain-Computer Interface Meeting, Asilomar, CA, June, 2013.
24. Tyler, D.J., "Taking "Artificial" out of the Prosthetic Hand," Annual Hanger Educational Fair, Las Vegas, NV, Feb, 2013.
25. Tyler, D.J., "Evolving Clinical Implementation of the Flat Interface Nerve Electrode," DARPA All-agency, Gov't Only Clinical translation workshop, Silver Springs, MD, Feb, 2013.
26. Tyler, D.J., "Peripheral Nerve Interfaces: Advanced Development and Clinical Implementation," Invited talk, Boston University, 1/24/2013.
27. Tyler, D.J., "Electrical Stimulation for the Management of Aspiration during Swallowing," Invited talk at 34<sup>th</sup> Annual International Conference: IEEE Engineering in Medicine and Biology Society, San Diego, CA, 2012.
28. Tyler, D.J., "Mechanically Dynamic Nanocomposite Materials: *In-vivo* Properties and Cortical Tissue Response," Invited speaker at Fall Material Research Society Meeting, Session R: Flexible electrodes, Boston, MA, Nov 2011.
29. Tyler, D.J., "Interfaces at the Nanoscale," Keynote at Nanobio Europe, June 2011, Cork, Ireland.
30. Tyler, DJ, "Advanced Neural Interfaces for Functional Electrical Stimulation and Rehabilitation Systems," IEEE-Neural Engineering Conference, Cancun, Mexico, 2011.
31. Tyler, DJ, "Computational modeling in peripheral nerve electrode design," Neural Interfaces Conference, Los Angeles, CA, 2010.
32. Tyler, DJ, "Dynamic Materials for Cortical Probes," Spring Material Research Society Meeting, San Francisco, 2010.
33. Tyler, D.J., "GLSC101: How to Make a Superhero," BioMedTech Distance Learning Program, Great Lakes Science Center, Oct. 21, 2009. (Video link: [http://www.greatscience.com/biomed\\_tech/distance\\_learning.php](http://www.greatscience.com/biomed_tech/distance_learning.php))
34. Tyler, D.J., "Bioelectrical Interfaces at the Nanoscale," Cleveland Neural Prosthesis Seminar, April, 2009. (Video link: <http://www.youtube.com/watch?v=1UB5FPJBTgE>)
35. Tyler, D.J., "Bioelectrical Interfaces at the Nanoscale," Abiotic/Biotic Interfaces Workshop as part of the NIH Roadmap Nanomedicine Initiative and the Trans-NIH Nano Task Force, Natcher Conference Center, NIH Campus, April 8, 2009.
36. Tyler, D.J., "Direct Sensory Feedback," Panelist on Neurotechnology for Sensory Restoration for Prosthetic Limbs, Neural Interfaces Conference, Cleveland, OH June 18, 2008.
37. Tyler, D.J., "Selective Peripheral Nerve Stimulation in Human Subjects," Biomedical Engineering Society, Los Angeles, CA, September 28, 2007.
38. Tyler, D.J., "Clinical Progress in Peripheral Nerve Electrodes," Biomedical Engineering Society, Chicago, IL, 12 October 2006.
39. Tyler, D.J., "Clinical Implementation of Peripheral Nerve Stimulation," Panther Grand Rounds, University of Pittsburg, 20 Sept 2006.
40. Tyler, D.J., Department of Biomedical Engineering, Univ of Texas, Dallas, 25 June 2006.

41. Tyler, D.J., "Stimulus-responsive, Mechanically-dynamic Nanocomposite for Cortical Electrodes," Materials Research Society – Electrobiological Interfaces Symposium, San Francisco, CA, April 2006.
42. Tyler, D.J., "Electrical Stimulation for Dysphagia Management following Stroke," 7th Meeting of the International Neuromodulation Society, Rome, Italy, June 2005.
43. Tyler, D.J., "New Strategies for Treatment of Dysphagia after Stroke," Scientific Basis of Neurorehabilitation for Spinal Cord Injury and Stroke, American Society of Neurorehabilitation, Cleveland, OH, Aug 2003.

### **Patents and Technology Invention Disclosures**

#### Patents and Patent Applications

1. Durand, Dominique, DJ Tyler, B Cottrill, "Nerve Cuff for Implantable Electrode," US Patent No. 9,713,708 B2, Awarded 7/25/17.
2. Weder, Christoph, SJ Rowan, **JR Capadona**, DJ Tyler, K Shanmuganathan, O van den Berg, "Dynamic mechanical polymer nanocomposites," US Patent No. 9,260,573, Awarded 2/16/2016.
3. **Xu, Yuesho, AE Hess-Duning**, and DJ Tyler, "Interconnect Devices, Systems, and Methods for Bridging Electronic Devices," US Patent App. US2015229046-A1, Feb 2014, US Pat No. 9,486,619 awarded 11/8/2016.
4. **Fisher, L**, R. Triolo, DJ Tyler, "Delaying the Onset of Muscle Fatigue Associated with Functional Electrical Stimulation," US Patent App. 2014/0094872, April 2014, US Pat No. 9,468,768 awarded 18 Oct 2016.
5. **Fisher, L**, R. Triolo, DJ Tyler, "System and method for stimulating motor units," US Patent App. 13/918,440, 2013, US Pat No. 9,468,753 awarded 10/18/2016.
6. Tyler, DJ, **M Schiefer, D Tan**, "Methods of treating medical conditions by population based encoding of neural information," Provisional patent filed Dec, 2012, US Patent application Dec 2014, International Patent app. Jan 2015, US Pat No. 9,421,366 issued Aug 23, 2016.
7. Tyler, DJ, "Nerve interface electrode with fibers for insertion between nerve fascicles," US Patent App. 14/113,976, filed 2012, US Patent No. 9,254,378, awarded 2/9/2016.
8. Tyler, DJ, "Hybrid System for Laryngeal Control with Detection of Physiologically Relevant Control Signals," submitted to Case TTO, February 2009, provisional filed with USPTO November 2009, Utility Patent application filed November 2010, Cleared for allowed claims, 11/3/2014, Application No. 12/949,562, US Patent No. 8,983,610, Awarded 3/17/2015.
9. Durand, DM; Tyler, DJ; and Cottrill, B, "Nerve cuff for implantable electrode, U.S. Patent No. 8,868,211, issued 21 Oct 2014.
10. Tyler, DJ and DM Durand, "Corrugated Nerve Electrode," U. S. Patent No. 5,634,462.
11. Durand, DM and DJ Tyler, "Slowly Penetrating Interfascicular Nerve Electrode," U.S. Patent No. 5,400,784.
12. Tyler, DJ and DM Durand, "Flat Interface Nerve Electrode and A Method for Use," U.S. Patent No. 6,456,866.
13. Weder, C, SJ Rowan, **JR Capadona**, DJ Tyler, K Shanmuganathan, O Van Den Berg, "Dynamic mechanical polymer nanocomposites," U.S. Patent No. 8,344,060, Jan 1, 2013.
14. Fang, ZP, G Thrope, A Ignagni, S Pourmehdi, D Tyler, R Strother, M Walker, T Winter, J Demchak, J Mrva, A Spzak, "System and Methods for Performing Prosthetic or Therapeutic Neuromuscular Stimulation Using a Programmable Universal External Controller Using an External, Battery Powered Controller with Power Conservation Features," U.S. Patent No. 6,587,728.
15. Fang, ZP, G Thrope, A Ignagni, S Pourmehdi, D Tyler, R Strother, M Walker, T Winter, J Demchak, J Mrva, A Spzak, "System and Methods for Performing Prosthetic or Therapeutic Neuromuscular Stimulation Using a Programmable Universal External Controller Providing Different Selectable Neuromuscular Stimulation Functions," U.S. Patent No. 6,625,494.
16. Fang, ZP, G Thrope, A Ignagni, S Pourmehdi, D Tyler, R Strother, M Walker, T Winter, J Demchak, J Mrva, A Spzak, "System and Methods for Performing Prosthetic or Therapeutic Neuromuscular Stimulation Using a Programmable Universal External Controller Having a Graphical User Interface," U.S. Patent No. 6,678,563 B2.
17. Fang, ZP, G Thrope, A Ignagni, S Pourmehdi, D Tyler, R Strother, M Walker, T Winter, J Demchak, J Mrva, A Spzak, "System and Methods for Performing Prosthetic or Therapeutic Neuromuscular Stimulation Using a Programmable Universal External Controller Accommodating Different Control Inputs and/or Different Control Outputs," U.S. Patent No. 6,701,189.

#### Invention Disclosures (not including those patented or in patent application)

1. Triolo, R.J., D.J. Tyler, K.J. Gustafson, "Ankle Control via Selective Nerve Cuff Electrodes," submitted to Case TTO, February 2009.
2. Tyler, D.J., "BioChip – A Platform for Bioelectric Applications," disclosed to Case TTO, August 2008.
3. Zorman, C.A., D.J. Tyler, **A. Hess**, J. Dunning, "A Method to Fabricate a Flat Interface Nerve Electrode Using Micromachining Techniques," disclosed to Case TTO, March 2007.
4. 2005-1088 Electrode for Hands Free Intraoperative Monitoring, Disclosed to Case Western Reserve University
5. 2005-1051 Hands Free Intraoperative Monitoring, Disclosed to Case Western Reserve University
6. 2005-1036 Flat Interface Nerve Electrode Double-Ended Closure Mechanism, Disclosed to Case Western Reserve University
7. 2005-1037 Flat Interface Nerve Electrode Strain Relief, Disclosed to Case Western Reserve University

**Investigational Device Exemptions (IDE)**

1. "Peripheral Nerve Interface for Sensory Feedback in Upper Extremity Prosthetic Devices," Sponsor: Cleveland VA Medical Center, PI: Dustin J Tyler, #G110043.

**Selected Popular Media and Notable Blog Coverage (of several thousand)**

1. [Great Big Story](https://youtu.be/lrn5HbQjkm8) (<https://youtu.be/lrn5HbQjkm8>), "For Amputees, Reactivating the Sense of Touch," [www.greatbigstory.com](http://www.greatbigstory.com) - Frontiers, Posted 16, 2017.
2. [IEEE Spectrum Video](#), "Creating a Prosthetic Hand That Can Feel," posted 28 April 2016.
3. [The New Yorker](#), "Feel Me," by Adam Gopnik, 16 May 2015
4. [IEEE Spectrum](#), "Restoring the human touch: Prosthetics imbued with haptics give their wearers fine motor control and a sense of connection," Tyler, Dustin J., Pg 28-33, May 2016 (Featured on Cover).
5. Case Western Reserve University video, [Prosthetic Hand Restores a Sense of Touch](#), Nov, 2016.
6. [Huffington Post Live](#), 17 Nov 2015.
7. [Time.com](#), 16 Nov 2015.
8. [CliffNotes](#), broadcast on ChannelOne News to over 1M High School students, Sept 2015.
9. [MSN Innovation](#), 9 Feb 2015.
10. [WEWS Cleveland](#), with Leon Bibb, 19 Feb, 2015.
11. [MSN Best Inventions of 2014](#), Listed at #2 of 20.
12. [The Osgood Files](#), CBS Radio, 21 Oct 2014.
13. [Bloomberg: Health & Science News](#), 8 Oct 2014.
14. HealthDay: <http://consumer.healthday.com/disabilities-information-11/amputation-news-720/new-prosthetic-hands-restore-sense-of-touch-to-amputees-692511.html>
15. Video interview with Editor in Chief of Science Translational Medicine: <https://www.youtube.com/watch?v=nPhmQnDOMN8&feature=youtu.be>
16. Nature: News & Comments: <http://www.nature.com/news/artificial-arms-get-closer-to-the-real-thing-1.16111>
17. AP Newswire Bigstory: <http://bigstory.ap.org/article/e6078638796c4d66bf98ea4cc3b7fac4/step-toward-artificial-hand-sense-touch>
18. BBC News: Health - <http://www.bbc.com/news/health-29538385>
19. The Scientist: <http://www.the-scientist.com/?articles.view/articleNo/41186/title/Smarter-Prostheses>
20. Case Think Magazine: <http://www.case.edu/think/spring2014/restorative-touch.html#.Vz8nyl-cHoo>
21. ABCNews: <http://abcnews.go.com/Technology/wireStory/step-artificial-hand-sense-touch-26054778>
22. Daily Planet, Discovery Channel, Canada (14 Jan 2014):  
Program Link: <http://watch.discoverychannel.ca/daily-planet/january-2014/daily-planet---january-14th-2014/#clip1063806>  
  
Video downloadlink (Copyrights to site): <https://review.bellmedia.ca/view/825962995>
23. National Geographic Daily News: "Revolution in Artificial Limbs Brings Feeling Back to Amputees," Online 2/22/12, web link: <http://news.nationalgeographic.com/news/2014/02/140222-artificial-limbs-feeling-prosthetics-medicine-science/>
24. QMed Daily – "Six innovators transforming bionics," Web link: <http://www.qmed.com/mpmn/gallery/6-innovators-transforming-bionics>
25. MIT Technology Review, "An artificial hand with real feeling," MIT Technology Review, (online 18 Feb 2014, print March/April 2014): Web link: <http://www.technologyreview.com/photoessay/524676/an-artificial-hand-with-real-feeling/>
26. Sound of Ideas, Cleveland NPR Affiliate, "Restoring Sensation," Live, 12 Aug 2014, web link: <http://www.ideastream.org/soi/entry/63730>.
27. WKSU-NPR, Radio
28. 2011 Medcity news
29. "Ohio med-device start-ups win grants," MedCity News, May 24, 2010, (Link: <http://www.massdevice.com/news/ohio-med-device-start-ups-win-grants>)
30. "How to rewire the nervous system," The Economist – Quarterly Technology Review, Sept 2, 2010, London, (Link: [http://www.economist.com/node/16909945?story\\_id=16909945&fsrc=rss](http://www.economist.com/node/16909945?story_id=16909945&fsrc=rss))
31. Campbell MacGregor, "Paralysed limbs revived by hacking into nerves," New Scientist, Issue 2754, April 2010, (Link: <http://www.newscientist.com/article/mg20627546.200-paralysed-limbs-revived-by-hacking-into-nerves.html>)
32. <http://gizmodo.com/5508116/hacking-nerves-to-revive-paralyzed-limbs>
33. <http://www.popsci.com/science/article/2010-04/nerve-hacking-restores-movement-paralyzed-limbs>
34. <http://www.medcitynews.com/2010/05/psoriasis-treatment-throat-stimulating-device-get-25k-grants/?edition=ohio>

35. "Upper-Limb Prosthetics: Seeking the Sense of Touch ", The O&P Edge, Oct. 2013, [http://www.oandp.com/articles/2013-10\\_04.asp](http://www.oandp.com/articles/2013-10_04.asp).
36. "An Artificial Hand with Real Feelings," David Talbot, MIT Technology Review, 12/05/2013, <http://www.technologyreview.com/news/522086/an-artificial-hand-with-real-feelings/>
37. Innovation Excellence, #9 of Top 10 innovations in 2013 (14 Dec 2013): <http://www.innovationexcellence.com/blog/2013/12/14/top-10-innovations-of-the-year-2013/>
38. Cleveland Plain Dealer (27 Dec 2013): [http://www.cleveland.com/healthfit/index.ssf/2013/12/prosthetic\\_hand\\_with\\_sense\\_of.html](http://www.cleveland.com/healthfit/index.ssf/2013/12/prosthetic_hand_with_sense_of.html)