Jacob L. Segil, Ph.D.

(303)-735-7313
Jacob.Segil@colorado.edu
www.segildesigns.com

Education

University of Colorado at Boulder August 2010 – May 2014
Doctor of Philosophy, Mechanical Engineering
- Research in Neural Interfaces and Prosthetic Control
- Dissertation title: *Development and Validation of a Postural Controller for Advanced Myoelectric Prosthetic Hands*

University of Colorado at Boulder August 2010 – May 2012
Master of Science, Mechanical Engineering
- Bioengineering track

University of Illinois at Urbana-Champaign August 2003 – May 2008
Bachelor of Science with Honors, Mechanical Engineering
- Minor in Mathematics
- Concentration in Biomedical Engineering

Research Experience

Research Assistant Professor — Boulder, CO
Department of Mechanical Engineering January 2021 - Present
- Director of the Artificial Limb Laboratory
- Funding from Department of Veterans Affairs and National Institute of Health
- Mentoring undergraduate and graduate students across College of Engineering

Research Healthcare Scientist — Denver, CO
Department of Veterans Affairs January 2017 – Jan 2023
- Rehabilitation Research and Development *Career Development Award*
- *'Investigation of Embodiment of Upper Limb Prosthetic Devices'*
- Mentored by Richard Weir, Alena Grabowski, Rocky Mountain VAMC

Visiting Research Faculty — Cleveland, OH
Functional Neural Interface Laboratory January 2017 – Jan 2023
Case Western Reserve University
- Rehabilitation Research and Development *Career Development Award-2*
- *'Investigation of Embodiment of Upper Limb Prosthetic Devices'*
- Visiting fellow during CDA2 summers
- Mentored by Dustin Tyler, Cleveland VAMC

Research Assistant (Denver, CO and Chicago, IL)
Biomechatronics Development Laboratory
University of Colorado Denver | Anschutz Medical Campus 2010 - 2016
Rehabilitation Institute of Chicago 2008 – 2010
• Mentor: Dr. Richard F. *ff.* Weir

Administrative Experience

Research and Innovation Office, University of Colorado Boulder, CO
Managing Director – Center for Translational Research Feb 2020 – Oct 2022
• Founding member and first director of the center
• Managed the campus-wide SBIR/STTR proposal writing resource
• Collaborated with faculty to translate technology to startup companies through non-dilutive funding

Teaching Experience

University of Colorado Boulder, CO
Senior Instructor –Engineering Plus program August 2014 – January 2021
• Taught 3-5 undergraduate courses an academic year
• Joint appointment with Mechanical Engineering department (Fall 2014-Fall 2016)
• 23 courses taught to 1,109 students total
• Median Instructor Overall Score (out of 6): ***5.35***
• Median Course Overall Score (out of 6): ***4.92***

Entrepreneurial Experience

Afference, Inc. Boulder, CO
Founder June 2022 – Present
• Founded a neurotechnology company to build wearable devices for haptic feedback from virtual and augmented reality content.
• Raised intuitional funding of $1.5m in a PreSeed financing round
• Direct product development of a interdisciplinary team of electronic engineers, firmware developers, virtual reality developers, and product designers

Point Designs LLC Boulder, CO
Founder June 2016 – Present
• Founded a medical device startup company to manufacture prosthetic components
• Launched first product, the *Point Digit*¸ a mechanical prosthetic finger for heavy-duty use
• 330% organic year-over-year growth in first two years

MITA LLC Boulder, CO
Founder July 2015 – Present
• Successful exit when purchased by Stryker Biomedical (October 2016)

• Lead engineer on developed of arthroscopic hip traction frame
• Lead inventor on licensed provisional patent

HeapSi LLC Boulder, CO
Founder Nov 2020 – Present

• Successful exit when purchased by Smith and Nephew (October 2022)
• Founder and CEO for targeted hip preservation medical devices
• Successful funding of $125k from Lab Venture Challenge and $75k from NIH REACH | SPARK Program to launch company in Winter 2020

Infinite Biomedical Technologies LLC Baltimore, MD
Consultant Oct 2016 – Jan 2021

• Chief scientist on *Glide* myoelectric control algorithm project
• Lead author on successful $1.7million SBIR application
• Grant writer for SBIR/STTR prosthetic technology applications

SparkFun Electronics Boulder, CO
Engineering Education Consultant January 2014 – December 2016

• Integrate SparkFun products into hands-on teaching curriculum that emphasize mechanical, electrical, and software design

Federally and State Funded Research Projects

Current

(2023) 2211906 Segil (Co-PI) 08/01/2023-07/31/2026
Agency: NSF
A Cognition-based Model for More Forgiving Human-Machine Interactions through Embodied Cooperation
Award Type: PD 19-058Y Mind, Machine, and Motor Nexus
Total Award: $901,102
Role: **Co-Principal Investigator** – This studies embodiment of prosthetic limbs through neural interfaces and sensory feedback
Status: Current

(2023) Lab Venture Challenge Segil (PI) 04/01/2024 – 04/1/2025
Agency: CU Boulder Lab Venture Challenge
Rotational Intramedullary Femoral Nail System - From Benchtop to Clinic
Award Type: CU Boulder Lab Venture Challenge
Total Award: $132,505
Role: **Principal Investigator** – This award promotes the development and commercialization of our rotational femoral nail technology.
Status: Current

(2023) OEDIT ESCR Award Segil (PI) 04/01/2024 – 04/1/2025
Agency: State of Colorado Office of Economic Development and Trade
Afference – Enabling Touch for the Spatial Computing Era
Award Type: OEDIT Early Stage Capital Retention Program
Total Award: $250,000
Role: **Principal Investigator** – This award promotes the development and commercialization of the Phantom, a wearable neural interface for the spatial computing era.
Status: Current

(2020) VARR&D CDA2 Segil (PI) 01/01/2021-12/31/2026
Agency: U.S. Dept. of Veterans Affairs VARR&D
Investigation of Embodiment of Upper Limb Prosthetic Devices
Award Type: VA Career Development Award – 2
Total Award: $1,223,463
Role: **Principal Investigator** – This award established my new research group, the Neural Interface and Sensory Restoration Laboratory. I will study the embodiment of prosthetic limbs using peripheral nerve cuffs to create physiologically appropriate sensory feedback.
Status: Current

Completed

(2021) 1R41EB032723-01 Segil (PI) 09/22/2021-09/21/2023
Agency: NIH/NIBIB
Multi-Modal Fingertip Sensor for Prosthetic Hand Control and Feedback
Award Type: STTR Phase 1
Total Award: $276,835
Role: **Principal Investigator** – This award translates a multi-modal fingertip sensory technology to Point Designs LLC for use in a semi-autonomous control of myoelectric prosthetic hands.
Status: Complete

(2021) SPARK | REACH Program (Co-PI) 03/01/2021 – 2/28/2023
Agency: OEDIT AIA Program
Hip Arthroscopy Surgical Instruments for Improved Patient Outcomes and Reduced Surgical Time
Award Type: SPARK | REACH Program
Total Award: $75,000
Role: Co-**Principal Investigator** – This award promotes the development and commercialization of our targeted hip preservation surgical instruments.
Status: Complete

(2021) R44 NS122687-01 (Sliker) 08/31/2021-08/30/2026
Agency: NIH/NINDS
Development and clinical assessment of a robust, 3D printed titanium, myoelectric powered prosthetic digit system
Award Type: SBIR Fast Track
Total Award: $6,499,787
Role: **Co-Investigator** – This award develops and validates a powered prosthetic finger.
Status: Complete

(2021) VARR&D Merit Review Weir (PI) 10/01/2021-09/31/2024
Agency: U.S. Dept. of Veterans Affairs VARR&D
Artificial Digit Replacements for Women Veterans with Individual Digit Loss
Award Type: VA RR&D Merit Review
Total Award: $745,939
Role: **Co-Investigator** – This award leverages the Women's Digit prosthetic finger in order to run a nationwide clinical trial
Status: Complete

(2020) R44 HD096942 (Sliker) 04/01/2020-03/31/2023
Agency: NIH/NICHD
A Ratcheting Prosthetic Partial Finger Using Advanced Rapid Manufacturing Technology
Award Type: SBIR Phase 2
Total Award: $1,498,945

Role: **Co-Investigator** – This award performs a clinical trial of our *Point Partial* technology including scaling manufacturing, in-laboratory tests, and a 11-patient take-home trial in collaboration with our clinical partners.
Status: Complete

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(2019) NIH NICHD 1R42 HD097827-01A1 Segil (Co-I) 05/06/2019 – 10/31/2023
Agency: National Institute of Child Health and Human Development (NICHD)
The Point Digit: A ratcheting prosthetic finger using advanced rapid manufacturing technology
Award Type: Fast-Track Small Business Technology Transfer (STTR)
Total award: $1,722,786
Role: **Co-Investigator** (PI: Weir, UC-Denver). I am an inventor of the technology and responsible for the coordination of the product development and clinical trial

(2021) Lab Venture Challenge Segil (PI) 01/01/2021 – 12/31/2022
Agency: CU Boulder Lab Venture Challenge
Hip Arthroscopy Surgical Instruments for Improved Patient Outcomes and Reduced Surgical Time
Award Type: CU Boulder Lab Venture Challenge
Total Award: $125,000
Role: **Principal Investigator** – This award promotes the development and commercialization of our targeted hip preservation surgical instruments.
Status: Complete

(2020) R43 HD101162 (Sliker) 04/01/2020-03/31/2022
Agency: NIH/NICHD
The Point Powered: A Robust Actuated Prosthetic Finger for Partial Hand Amputation
Award Type: SBIR Phase 1
Total Award: $224,994
Role: **Co-Investigator** – This project's goal is to develop and commercialize a robust, powered prosthetic finger using advanced metal 3D-printing technology
Status: Completed

(2020) 1I21RX003471-01A1(Weir) Segil (PI) 09/01/2020-8/31/2022
Agency: U.S. Dept. of Veterans Affairs VARR&D
Power Hungry: Fuel Cells Harvesting Biofluids for Renewable Power of Wearable Medical Devices
Award Type: VA RR&D SPiRE
Total Award: $184,000

Role: **Principal Investigator** – This award builds off of our Multi-Functional Materials IRT seed award to study the use of fuel cells as power sources for medical devices using sugar in the blood stream.
Status: Completed

(2021) CO OEDIT Sliker (PI) 11/01/2021-10/31/2022
Agency: Colorado Office of Economic Development and International Trade
Manufacturing Support for Point Powered Prosthetic Finger
Award Type: Advanced Industry Accelerator Program
Total Award: $250,000
Role: **Co-Investigator** – This award supports the development of a powered prosthetic finger with manufacturing equipment and services.
Status: Completed

(2017) VARR&D 1IO1RX002830-01A1 Segil (Co-I) 01/01/2018 – 01/01/2020
Agency: U.S. Dept. of Veterans Affairs VARR&D
Artificial Digit Replacements for Women Veterans with Individual Digit Loss
Award Type: Merit Review
Total Award: $496,123
Role: **Co- Investigator** (PI: Weir, Biomechatronics Development Laboratory). I am responsible for mechanical design and testing as well as reporting to the VA RR&D service.
Status: Completed

(2018) VARR&D Contract: Segil (PI) 10/01/2018-9/30/2020
Agency: U.S. Dept. of Veterans Affairs VARR&D
Proximity, Contact, and Force Sensing Finger Tip Material for Cleveland VA Medical Center Clinical Trial1
Award Type: Contract
Total Award: $199,747
Role: **Principal Investigator -** This contract is for the delivery of sensorized prosthetic hands to the Cleveland VA based upon our novel multi-modal fingertip sensors.
Status: Complete

(2016) NIH R44 HD087065 Segil (Co-I) 09/1/2016 – 08/31/2019
Agency: National Institute of Health – ZRG1 ETTN-C (10)
Joint angle transform based methodology for controlling upper limb prostheses
Award Type: Fast Track Small Business Innovative Research (SBIR)
Total Award: $1,609,492
Role: **Co- Investigator** (PI: Kaliki, Infinite Biomedical Technologies, LLC). I am the lead researcher for the UC Denver subaward and responsible for patient testing, product design, analysis, and reporting.

Status: Completed

(2017) VARR&D IK1RX002011: Segil (PI) 01/01/2017-6/30/2019
Agency: U.S. Dept. of Veterans Affairs VARR&D
Integration of a Sensory Feedback Implant with Myoelectric Prosthetic Hands
Award Type: Career Development Award 1
Total Award: $245,953
Role: **Principal Investigator**
Status: Complete

(2018) NIH R41 HD096942-01 Segil (Co-I) 10/1/2018 – 04/01/2019
Agency: National Institute of Health – ZRG1 MOSS-V (15)
The Point Partial: A ratcheting prosthetic partial finger using advanced rapid manufacturing technology
Award Type: Phase 1 Small Business Innovative Research (SBIR)
Total Award: $209,900
Role: **Co- Investigator** (PI: Sliker, Point Designs LLC). I am responsible for overseeing the mechanical design and testing through the UC-Denver subaward.
Status: Complete

(2017) OEDIT AIA Grant Segil (Co-I) 04/15/2017 – 03/31/2018
Agency: OEDIT, State of Colorado
The Point Digit: A ratcheting mechanical prosthetic finger built using advanced rapid manufacturing
Award Type: Advanced Industry Accelerator
Total Award: $137,485
Role: **Co- Investigator** (PI: Weir, Biomechatronics Development Laboratory). I was managing the mechanical design, testing, analysis, and reporting during the project through the UC Denver subaward.
Status: Complete

(2012) VARR&D A3962R: Weir (PI) 08/01/2013-07/31/2017
Agency: U.S. Dept. of Veterans Affairs VARR&D,
A Principle Component Paradigm for EMG Control of Advanced Prosthetic Hands
Total Award: $555,385
Role: **Senior Personnel** (PI: Weir, Biomechatronics Development Laboratory). I was the lead author of the proposal and lead researcher as a graduate student at CU Boulder.
Status: Complete

Books

1. **J. L. Segil**, *Handbook of Biomechatronics*, 605 pages, 1st ed. Elsevier, 2018. (lead editor)

Journal Publications

1. **J.L. Segil**, L.M. Roldan, E.L. Graczyk, "Measuring embodiment: A review of methods for prosthetic devices", Frontiers in Neurorobotics, Vol 16, (2022) doi: 902162
2. J. Beshai, T. DiSorbo, J. Hutfles, **J.L. Segil**, R. F. *ff.* Weir, J. Pellegrino, "Cellulose-acetate coating of carbon cloth diffusion layer for liquid-fed fuel cell applications", Journal of Power Sources, Vol 542, (2022) doi: 231739
3. Resnik, Linda J., Mathew L. Borgia, Melissa A. Clark, Emily Graczyk, **J.L. Segil**, and Pengsheng Ni. "Structural validity and reliability of the patient experience measure: A new approach to assessing psychosocial experience of upper limb prosthesis users." PloS one 16, no. 12 (2021): e0261865.
4. **J. L. Segil,** B. Pulver, S. Huddle, R. F. ff Weir, and L. Sliker, "The Point Digit II: Mechanical Design and Testing of a Ratcheting Prosthetic Finger," *Military Medicine*, vol. 186, no. Supplement_1, pp. 674–680, Jan. 2021
5. Y. Zachary, N. Kellaris, C. Chase-Markopoulou, D. Ricken, S. K. Mitchell, M. B. Emmett, R. F. *ff* Weir, **J. L. Segil**, and Christoph Keplinger. "Design of a High-Speed Prosthetic Finger Driven by Peano-HASEL Actuators." Frontiers in Robotics and AI 7 (2020). doi: 10.3389/frobt.2020.586216
6. **J. L. Segil**, I. Cuberovic, E. L. Graczyk, R. F. ff Weir, and D. Tyler, "Combination of Simultaneous Artificial Sensory Percepts to Identify Prosthetic Hand Postures: A Case Study," Scientific Reports, vol. 10, no. 1, pp. 1–15, Apr. 2020, doi: 10.1038/s41598-020-62970-4.
7. **J.L. Segil**, R. Kaliki, J. Uellendahl, and R. Weir, "A Myoelectric Postural Control Algorithm for Persons with Transradial Amputation: A Consideration of Clinical Readiness," *IEEE Robotics Automation Magazine*, pp. 0–0, 2019.
8. **J. L. Segil**, R. Patel, J. Klingner, R. F. ff Weir, and N. Correll, "Multi-modal prosthetic fingertip sensor with proximity, contact, and force localization capabilities," *Advances in Mechanical Engineering*, vol. 11, no. 4, Apr. 2019.
9. **J. L. Segil**, S. A. Huddle, and R. F. f Weir, "Functional Assessment of a Myoelectric Postural Controller and Multi-Functional Prosthetic Hand by Persons With Trans-Radial Limb Loss," *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, vol. 25, no. 6, pp. 618–627, Jun. 2017.
10. Radhen Patel, **J.L. Segil,** Nikolaus Correll, "Manipulation Using the "Utah" Prosthetic Hand: The Role of Stiffness in Manipulation", *Robotic Grasping and Manipulation Challenge* (book chapter), pp. 107-116, Oct. 2016.
11. **J. L. Segil** and R.F. Weir "A Novel Architecture for a Postural Controller of Multi-functional Myoelectric Prosthetic Hands." *Journal of Rehabilitation Research and Development*. 52.4 (2015).

12. **J. L. Segil**, M. Controzzi, R.F. Weir, and C. Cipriani "A Comparative Study of State of the Art Myoelectric Controllers for Multi-Grasp Prosthetic Hands." *Journal of Rehabilitation Research and Development* 51.9 (2014).
13. C. Cipriani, **J. L. Segil**, F. Clemente, R. F. Weir, and B. Edin. "Discrete Event Sensory Feedback During Teleoperation of a Prosthetic Hand." *Experimental Brain Research* Volume 232, Issue 11 (2014).
14. C. Cipriani, **J. L. Segil**, J. A. Birdwell, and R. F. Weir. "Dexterous Control of a Prosthetic Hand Using Fine-wire Intramuscular Electrodes in Targeted Extrinsic Muscles." *Neural Systems and Rehabilitation Engineering, IEEE Transactions On* 22.4 (2014).
15. **J. L. Segil** and R. F. Weir. "Design and Validation of a Morphing Myoelectric Hand Posture Controller Based on Principal Component Analysis of Human Grasping." *Neural Systems and Rehabilitation Engineering, IEEE Transactions On.* 22.2 (2014).
16. J. T. Belter, **J. L. Segil**, A. M. Dollar, and R. F. Weir. "Mechanical Design and Performance Specifications of Anthropomorphic Prosthetic Hands: A Review." *Journal of Rehabilitation Research and Development*. 50.5 (2013)

Peer Reviewed Full-Length Conference Proceedings

1. **J.L. Segil,** H. Truong, N. Correll, "Distributed Tactile Sensors for Palmar Surfaces of Prosthetic Hands", in 2023 11th Annual IEEE EMBS Conference on Neural Engineering, April, 2023
2. B. Pulver, S. A. Manzano, A. Selnick, S. Kishek, L. Sliker, N. Correll, **J.L. Segil**, "Toward semi-autonomous prosthetic hand control: applying embedded neural networks to improve sensor fusion in prosthetic fingertip sensors", in the MEC Symposium Conference, July 2022
3. C. Baschuk, R. Kaliki, R. F. *ff.* Weir, **J.L. Segil**, "Take-home trial of the Glide Hand and Wrist Myoelectric Control Algorithm: A case study", in the MEC Symposium Conference, July 2022
4. B. Pulver, M. Lang, R. Dodson, S. Huddle, R. F. *ff.* Weir, **J.L. Segil**, L. Sliker, "Case studies: fitting patients with heavy duty ractheting mechanical thumb prostheses for metocarpophalangeal level amputations", in the MEC Symposium Conference, July 2022
5. A. Fontaine, **J.L. Segil**, J. Caldwell, R. F. *ff.* Weir, "Demonstration of an optogenetic neuronal control interface", in the MEC Symposium Conference, July 2022
6. M. Trout, T. Hansen, C. Olsen, D. Warren, **J.L. Segil**, J. George, "Shared-Control Decreases the Physical and Cognitive Demands of Maintaining a Secure Grip", in the MEC Symposium Conference, July 2022
7. B. Pulver, K. Sherk, D. Hill, S. Kishek, S. Huddle, R. F. *ff.* Weir, **J.L. Segil**, L. Sliker, "Case Studies: fitting patients with heavy duty bi-directional ratcheting thumb rail prosthesis for carpometacarpal amputations", in the MEC Symposium Conference, July 2022
8. L. Resnik, M. Borgia, **J.L. Segil**, E. Graczyk, "Key characteristics of upper limb prosthesis users influence Patient Experience Measure scores", in the MEC Symposium Conference, July 2022

9. **J.L. Segil**, Platon Lukyanenko, Joris Lambrecht, and Dustin Tyler. "Comparison of Myoelectric Control Schemes for Simultaneous Hand and Wrist Movement using Chronically Implanted Electromyography: A Case Series." In 2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), pp. 6224-6230. IEEE, 2021.
10. Hansen, Taylor C., Marshall A. Trout, **J. L. Segil**, David J. Warren, and Jacob A. George. "A Bionic Hand for Semi-Autonomous Fragile Object Manipulation via Proximity and Pressure Sensors." In 2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), pp. 6465-6469. IEEE, 2021.
11. **J. L. Segil**, "A Ratcheting Prosthetic Digit for Children with Partial Hand Differences," *The Academy Today*, vol. Volume 16, no. No 4, Fall 2020
12. C. Baschuk, R. Kaliki, R. Weir, **J.L.Segil,** "Take Home Trial of the Glide Hand and Wrist Myoelectric Control Algorithm: A Case Study", in the MEC Symposium Conference, July 2020
13. B. Pulver, M. Lang, R. Dodson, S. Huddle, R. Weir **J.L.Segil,** L. Sliker "Case Studies: Fitting Patients with Heavy Duty Ratcheting Mechanical Thumb Prostheses for Metocarpophalangeal Level Amputations", in the MEC Symposium Conference, July 2020
14. R. Weir, A. Fontaine, **J.L.Segil,** J. Caldwell "Deomonstration of an Optogenetic Neuronal Control Interface", in the MEC Symposium Conference, July 2020
15. **J.L.Segil,** S. Huddle, R. Weir "Development of a Miniature Ratcheting Prosthetic Digit for Small Adults and Children with Partial Hand Amputation", in the MEC Symposium Conference, July 2020
16. A. K. Fontaine, **J. L. Segil**, J. H. Caldwell, and R. F. f Weir, "Real-Time Prosthetic Digit Actuation by Optical Read-out of Activity-Dependent Calcium Signals in an Ex Vivo Peripheral Nerve," in 2019 9th International IEEE/EMBS Conference on Neural Engineering (NER), 2019, pp. 143–146.
17. **J.L. Segil**, Jacquelyn Sullivan, Janet Y. Tsai, Derek T. Reamon, and Marissa H. Forbes, "Investigation of Spatial Visualization Skills Across World Regions", *IEEE Frontiers in Education Annual Conference*, 5 pages, Indianapolis, Indiana, October 2017
18. **J.L. Segil**, Stephen Huddle, Levin Sliker, Richard F. *ff*. Weir, "The Point Digit: Mechanical Design and Testing of a Ratcheting Prosthetic Finger", *American Society of Biomechanics Annual Conference*, 2 pages, Boulder, Colorado, August 2017
19. **J. L. Segil**. And Gill, Emily C. "Let's Learn about Spatial Visualization", 12 pages, Published November 21, 2016. Engineering Plus Degree Program, TeachEngineering Digital Library Collection, University of Colorado Boulder, Regents of the University of Colorado. https://www.teachengineering.org/lessons/view/cub_spatviz_lesson01
20. **J.L. Segil**, Jacquelyn Sullivan, Beth A. Myers, Derek T. Reamon, and Marissa H. Forbes, "Analysis of Multi-Modal Spatial Visualization Workshops Intervention across Gender, Nationality, and Other Engineering Student Demographics", *IEEE Frontiers in Education Annual Conference*, 5 pages, Erie, Pennsylvania, October 2016
21. **J.L. Segil,** Beth Myers, Derek Reamon, Jackie Sullivan, "Efficacy of Various Spatial Visualization Implementation Approaches in a First-Year Engineering Projects Course", *American Society of Engineering Education Annual Conference*, 7 pages, Seattle June 2015

22. **J.L. Segil,** Brian Huang, Lindsay Levkoff, "Development of a Semester Long High School Introduction to Engineering Design Course for a Prototypical Classroom", *American Society of Engineering Education Annual Conference*, 4 pages, Seattle June 2015

23. **J.L. Segil,** Brian Huang, Lindsay Levkoff, "Porting a University Introduction to Design Course to a Semester Long High School Course Based on Open-Source Hardware and Arduino", 4 pages, *American Society of Engineering Education Annual Conference*, Seattle June 2015

24. A. Clawson, **J. L. Segil**, B. Jones, P. Kyberd, Y. Losier, and R. F.Weir "Mechanical Design of a Multifunction Hand Prosthesis System - The UNB Hand", 4 pages, *International Society for Prosthetics and Orthotics (ISPO) World Congress 2010* (Congress Lecture 3287)

25. P. Kyberd, A. Clawson, B. Jones, Y. Losier, A. Wilson, K. Englehart, **J. L. Segil**, and R. F. Weir "The UNB Hand - Multifunction Hand Prosthesis System", 4 pages, *International Society for Prosthetics and Orthotics (ISPO) World Congress 2010*

Peer Reviewed Conference Abstracts

1. **J.L. Segil,** Levin Sliker, Stephen Huddle, Serena Kishek, Ben Pulver, Rob Dodson, Richard F. *ff.* Weir, "Development of a Miniature Ratcheting Prosthetic Digit for Women Service Members with Partial Hand Amputation", Military Health System Research Symposium (MHSRS), March 2021
2. Taylor C. Hansen, **J. L. Segil**, Radhen Patel, Richard F. *ff.* Weir, David J. Warren, Jacob A. George, A Self-Aware Bionic Hand that Autonomously Detects Nearby Objects and Dexterously Grasps Them with Minimal Force, Society for Neuroscience, November 2020
3. **J.L. Segil,** Rahul Kaliki, Phil Stevens, Kyle Sherk, Tina Lee, Kevin Liu, and Richard F. *ff.* Weir, (2020): Preliminary results of a take-home study of the myoelectric postural control algorithm. American Academy of Orthotists and Prosthetists, 46th Annual Symposium, March 2020
4. **J.L. Segil,** Levin Sliker, Stephen Huddle, Richard F. *ff.* Weir, "Development of a Miniature Ratcheting Prosthetic Digit for Women Service Members with Partial Hand Amputation", Military Health System Research Symposium (MHSRS), March 2020
5. **J. L. Segil**, Stephen Huddle, Levin Sliker, and Richard Weir, (2019): Design of a Cosmetic Prosthetic Finger with Positionable, Locking, and Uni-lateral Use Features. 17th World Congress of the International Society for Prosthetics and Orthotics (ISPO), Kobe, Japan, October 5 to 8, 2019.
6. **J. L. Segil**, Stephen Huddle, Levin Sliker, and Richard Weir, (2019): Mechanical Testing of a Partial Prosthetic Finger for Strength, Reliability, and Fatigue. 17th World Congress of the International Society for Prosthetics and Orthotics (ISPO), Kobe, Japan, October 5-8, 2019.
7. **J. L. Segil**, Stephen Huddle, Levin Sliker, Richard F. ff. Weir (2019): The Point Digit: Mechanical Design and Testing of a Ratcheting Prosthetic Finger. MHSRS Military Health System Research Symposium, Gaylord Palms Resort and Convention Center in Kissimmee, FL, August 19-22, 2019

8. Taylor Hansen, Jacob George, **J.L. Segil**, Radhen Patel, David Warren, "Self-Award Bionic Hand to Aid Amputees in Grasping Tasks", University of Utah Biomedical Engineering Conference 2019
9. **J.L. Segil**, Ivana Cuberovic, Emily Graczyk, Richard F. *ff.* Weir, and Dustin Tyler, "Integration of Simultaneous Artificial Sensory Percepts to Indentify Prosthetic Hand Posture", *Society for Neuroscience*, Chicago IL October 2019
10. Radhen Patel, **J.L. Segil**, and Nikolaus Correll, "Reactive Control of a robot hand equipped with visual-haptic sensor for pre-grasp shaping and gentle touch", *International Conference on Robotics and Automation*, June 2019
11. **J.L. Segil**, "Spatial Visualization Workshops for First-Year Engineering Students", *American Society of Engineering Education Zone IV Conference*, Boulder, CO, March 2018
12. **J.L. Segil**, Stephen Huddle, Levin Sliker, Richard F. *ff.* Weir, "The Point Digit: A passive, ratcheting prosthetic finger manufactured using metal laser sintering rapid prototyping technology", *Myoelectric Control Symposium*, Fredericton, New Brunswick, Canada, August 2017
13. **J.L. Segil**, Radhen Patel, Yanyu Xiong, Marie Schmitt, Richard F. *ff.* Weir, Nikolaus Correll, "Force Sensing Prosthetic Fingertip using Elastomer-Embedded Commodity Infrared Proximity Sensor", *Myoelectric Control Symposium*, Fredericton, New Brunswick, Canada, August 2017
14. **J.L. Segil**, Jacquelyn Sullivan, Beth Myers, Marissa Forbes, "Multi-Modal Spatial Visualization Workshop for First-Year Engineering Students: A deeper look", *WEPAN Change Leader Forum*, June 2016
15. **J.L. Segil**, Beverly Louie, Jacquelyn Sullivan, Beth Myers, "Hands-on, Minds-on Spatial Visualization Workshops for First-Year Engineering Students", *WEPAN Change Leader Forum*, June 2015
16. **J.L. Segil**, Stephen Huddle, Richard F. *ff.* Weir, "Functional Assessment of Transradial Amputees with a Myoelectric Postural Controller and Multi-functional Prosthetic Hand", *Myoelectric Control Symposium*, August 2014
17. **J.L. Segil,** R. F. Weir, and C. Cipriani, "Comparison of State of the Art Myoelectric Controllers for Advanced Prosthetic Hands using SHAP Test", *IEEE EMBS Conference on Neural Engineering*, November 2013.
18. **J. L. Segil** and R. F. Weir, "Derivation of Optimal Surface Electrode Control Sites using Untargeted Electrode Array for Myoelectric Control of Prosthetic Hands", *Rocky Mountain American Society of Biomechanics – Regional Conference*, March 2013
19. **J. L. Segil** and R. F. Weir, "Design of a Myoelectric Controller for a Multi-DOF Prosthetic Hand based on Principal Component Analysis" *ASME IMECE 2011 Congress - Poster Session Track 24-6*, November 2011
20. **J. L. Segil**, D. Reamon, and R. F. Weir, "Design of a Myoelectric Controller for a Multi-DOF Prosthetic Hand based on Principal Component Analysis", *Myoelectric Control Symposium 2011*, Fredericton, New Brunswick.

National Awards and Honors

Invited Panelist – The Art and Science of Creating Intuitive Devices – Shirley Ryan Ability Laboratory January 2023

IEEE Haptics Symposium – Cross Cutting Challenge – Chair of Organizing Committee, March 2022

Career Development Award - 2, Department of Veteran Affairs Rehabilitation Research and Development March 2020

Finalist, *Ripple Innovation in Research and Technology Competition,* Society for Neuroscience Annual Meeting October 2019

Career Development Award - 1, Department of Veteran Affairs Rehabilitation Research and Development January 2017

Robotics Grasping and Manipulation Competition - Second Place Finish, IEEE/RSJ International Conference on Intelligent Robots and Systems, Team University of Colorado at Boulder Awarded October 2016

Best Student Paper Award, Myoelectric Controls Symposium 2014, New Brunswick, Canada Awarded August 2014

Whitaker International Fellow, Whitaker Program Summer Grant, Institute of International Education (IIE) Awarded June 2013

Emerging Researchers in Biomedical Engineering - Honorable Mention, ASME IMECE 2011 Congress - Poster Session Track 24-6 Awarded November 2011

Honorable Mention, National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) Awarded March 2011

Honorable Mention, National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) Awarded March 2010

Local Awards and Honors

Managing Director, *Center for Translation Research* – Financial Futures Project Award, University of Colorado Boulder

January 2020 – Oct 2022

Nominee, Charles A. Hutchinson Teaching Award, College of Engineering and Sciences, University of Colorado Boulder October 2019

Science Advisory Board Member, St. Vrain Valley School District

January 2019 – Jan 2022

IRT Multi-Functional Materials Seed Grant – Power Hungry: Fuel cells harvesting biofluids for renewable power of wearable medical devices, College of Engineering, University of Colorado at Boulder
($58,345) Awarded January 2019

IRT Multi-Functional Materials Seed Grant – Development of Artificial Muscles for Prosthetic Devices using Hydraulically Amplified Self-healing Electrostatic (HASEL) Actuators, College of Engineering, University of Colorado at Boulder
($5,000) Awarded Summer 2018

IRT Multi-Functional Materials Seed Grant – Multifunctional electronic skins for applications in prosthetics and spacesuits, College of Engineering, University of Colorado at Boulder ($10,000) Awarded Spring 2018

IRT Multi-Functional Materials Seed Grant – Proximity, Contact, and Force Sensing Prosthetic Finger Tip Material for DARPA HAPTIX Program, College of Engineering, University of Colorado at Boulder ($5,000) Awarded Winter 2018

Faculty Incentive Award – Spatial Visualization Teach Engineering Curriculum, College of Engineering, University of Colorado at Boulder ($250) Awarded Fall 2016

Engineering Excellence Fund Award – Spatial Visualization Workshop Improvements, College of Engineering, University of Colorado at Boulder ($3,730) Awarded Fall 2016

Engineering Excellence Fund Award – Data Analysis Equipment, College of Engineering, University of Colorado at Boulder ($4,852) Awarded Spring 2016

Patents

1. **J.L. Segil,** C.R. Sampson, D.J. Tyler, S.A. Marquina, N.D. Phillips (2024), *Wearable electronic device for inducing transient sensory events as user feedback*, U18/208,109 CIP Allowed US Patent **(assigned to Afference, Inc.)**
2. B. Pulver, L. Sliker, S. Huddle, R. Weir, **J.L. Segil**, B. Murali, A. Taylor, T. Noe (2024) *Clutch system for a powered prosthetic device*, US18/375953 (**assigned to Point Designs LLC)**
3. B. Pulver, L. Sliker, S. Huddle, R. Weir, **J.L. Segil**, B. Murali, A. Taylor, T. Noe (2024) *Gear system for a powered prosthetic device*, US18/375951 (**assigned to Point Designs LLC)**
4. B. Pulver, L. Sliker, S. Huddle, R. Weir, **J.L. Segil**, B. Murali, A. Taylor, T. Noe (2024) *Linkage system for a powered prosthetic device*, US18/375949 (**assigned to Point Designs LLC)**
5. **J.L. Segil**, O.Y. Mei-Dan (2024) *Orthopedic Nail System* US 18/390,593 Non-Provisional Patent Application CIP

6. B. Pulver, S. Kishek, L. Sliker, S. Huddle, R. Weir, **J.L. Segil** (2024) *Prosthetic Thumb Device* US 12011376B2 Granted Patent **(assigned to Point Designs LLC)**
7. **J.L. Segil**, O.Y. Mei-Dan (2024) *Arthroscopic Bone Wax Tool* US 18/415466 Provisional Patent Application
8. **J.L. Segil**, O.Y. Mei-Dan (2023) *Orthopedic Surgical Alignment and Stabilization Tool* US 63/440063 Non-Provisional Patent Application
9. **J.L. Segil**, O.Y. Mei-Dan (2023) *Orthopedic Nail System* US 18/116519 Continuation In Part, Non-Provisional Patent Application
10. **J.L. Segil**, O.Y. Mei-Dan (2023) *Arthroscopic Bone Wax Tool* US 63/439820 Non-Provisional Patent Application
11. **J.L. Segil**, R. F. *ff.* Weir, (2022), *Systems and Methods for Postural Control of a Multi-functional Prosthesis,* US16/859122 Non-provisional patent application (**licensed to Infinite Biomedical Technologies**)
12. B. Pulver, L. Sliker, S. Huddle, R. F. *ff.* Weir, **J.L. Segil**, (2022), *Powered Prosthetic Device*, US63/412828 Provisional Patent Application (**assigned to Point Designs LLC**)
13. **J.L. Segil** (2022), *Wearable electronic device for inducing transient sensory events as user feedback,* US11809629 Granted US Patent **(assigned to Afference, Inc.)**
14. D.J. Carroll, J.R. Montgomery, L.J. Sliker, **J.L. Segil**, (2022), *Devices, system, and methods for treating and preventing venous insufficiency, thrombosis, orthostatic intolerance, and impaired lymphatic drainage* US 17/571230 Non-provisional Patent Application
15. **J.L. Segil**, O.Y. Mei-Dan (2022) *Orthopedic Plate System* US 63/333866 Non-Provisional Patent Application
16. **J.L. Segil**, O.Y. Mei-Dan (2022) *Orthopedic Nail System* US 63/316109 Non-Provisional Patent Application
17. **J.L. Segil**, O.Y. Mei-Dan (2021) *Arthroscopic Suture Management Device* US 63/208737 Non-Provisional Patent Application (**option agreement with MDS-LLC)**
18. **J.L. Segil**, O.Y. Mei-Dan (2020) *Tools and Methods for Arthroscopic Surgery* US 63/110,083 Provisional Patent Application **(assigned to HeapSi, LLC)**
19. S. Huddle, **J.L. Segil,** L. Sliker, R. Weir (2019) *Point Partial: A prosthetic partial finger for heavy-duty use*. Granted Patent US11229533 **(licensed to Point Designs LLC)**
20. R. Patel, **J.L. Segil**, J. Klinger, R. Weir, N. Correll, (2018) *Multi-Modal Fingertip Sensor with Proximity, Contact, and Force Localization Capabilities*. United States Patent Application WO2020010328A1 **(licensed to Point Designs LLC)**
21. O.Y. Mei-Dan and **J.L. Segil**, (2017) *Slotted Cannula for Arthroscopic Surgery*. WO2019109100A1 **(purchased by Smith and Nephew Corp.)**
22. R. Shandas, O.Y. Mei-Dan, **J.L. Segil**, (2016) *Surgical Table and Accessories to Facilitate Hip Arthroscopy*. Granted Patent US11382816 **(purchased by Stryker Inc.)**
23. **J. L. Segil**, R. F. Weir, (2013): *Systems and Methods for Postural Control Of A Multi-Function Prosthesis.* Granted Patent US11478367 **(licensed to Infinite Biomedical Technologies LLC)**

Invited Talks/Presentations

1. **J.L. Segil** (2022), Stories about Invention, Upper Elementary Class, Jarrow Montessori School, November 2022
2. **J.L. Segil** (2022), Financing and Stories from the Startup Trenches, Advanced Product Design, MCEN 5055, October 2022
3. **J.L. Segil** (2022) Artificial Limb Laboratory Background, Introduction to Biomedical Engineering, BMEN2000, November 2022
4. **J.L. Segil** (2022), Financing and Stories from the Startup Trenches, Advanced Product Design, MCEN 5055, March 2022
5. **J.L. Segil** (2022), Just Keep Going: Tales from the Startup Trenches, Invention and Innovation, GEEN 3400, March 2022
6. **J.L. Segil** (2021), Just Keep Going: Tales from the Startup Trenches, Advanced Product Design, MCEN 5055, November 2021
7. **J.L. Segil** (2021), Artificial Limb Laboratory, St Vrain Valley Innovation Center, October 2021
8. **J.L. Segil** (2021), Just Keep Going: Tales from the Startup Trenches, North American Membrane Society Annual Conference, Estes Park, CO August 2021
9. **J.L. Segil** (2021), The Study of Embodiment of Prosthetic Hands, Dustin Tyler Laboratory, Case Western Reserve University, June 2021
10. **J.L. Segil** (2021), The Study of Embodiment of Prosthetic Hands, Alaa Ahmed Laboratory, University of Colorado Boulder, June 2021
11. **J.L. Segil** (2021), The Study of Embodiment of Prosthetic Hands, Nitish Thakor Laboratory, Johns Hopkins University, May 2021
12. **J.L. Segil** (2021), Artificial Limb Laboratory – The Study of Embodiment of Prosthetic Hands, Introduction to Neuroscience NRS 2100, April 2021
13. **J.L. Segil** (2021), The Study of Embodiment of Prosthetic Hands, Introduction to Biomedical Engineering BME 1000, March 2021
14. **J.L. Segil** (2021), Entrepreneurship and Funding Models, Invention and Innovation - GEEN 3400, March 2021
15. **J.L. Segil** (2020), Recent Advances in Somatosensory Neuroprostheses – Part II, Mini-Symposia, IEEE Engineering in Medicine and Biology Society Annual Conference June 2020
16. **J.L. Segil** (2020) Just Keep Going – Tales from the Startup Trenches, BSBT/ENTP 6801, April 2020
17. **J.L. Segil** (2019), Towards Simultaneous Control of Prosthetic Hands and Wrists with Intramuscular Electromyography, VA Research Days, Rocky Mountain Regional VA Medical Center, Denver, CO September 2019
18. **J.L. Segil** (2018), Learning Simultaneous Sensory Restoration Patterns to Identify Multi-Functional Prosthetic Hand Postures, VA Research Days, Rocky Mountain Regional VA Medical Center, Denver, CO September 2018
19. **J.L. Segil,** (2018) Modern Prosthetic Limbs, Blow Things Up Laboratory, Boulder CO September 2018
20. **J. L. Segil**, (2018) Just Keep Going, CU Commercialization Academy, Boulder CO 2018

21. **J. L. Segil**, (2018) Biomechatronics Development Laboratory Current Research, SparkFun Lunch and Learn, Boulder CO 2018
22. **J. L. Segil**, (2018) Neural Interfaces and the Biomechatronics Development Laboratory, IEEE Dine and Learn, Denver CO 2018
23. **J.L. Segil**, (2018) Neural Interfaces and Prosthetic Limbs, Colorado School of Mines, Golden, CO April 2018
24. **J.L. Segil**, (2019) Modern Prosthetic Limbs, MCEN 4133, Boulder, CO April 2018
25. **J.L. Segil**, (2019) State of the Art of Prosthetic Limb Design, Denver School of Science and Technology, Boulder, CO April 2018
26. **J. L. Segil**, (2017) How Do Prosthetic Hands Work?, Rogers Park Montessori, Chicago, IL, December 2017
27. **J. L. Segil**, (2017) Brains, Muscles, Nerves, and Prosthetic Limbs, Boulder Country Day School, Boulder, CO, November 2017
28. **J. L. Segil**, (2017) A Review of Upper Limb Prosthetics, ATLAS Seminar on Human-Computer Interface, CU Boulder, November 2017
29. **J. L. Segil**, (2017) CDA1 Research Project: Integration of a Sensory Feedback Implant with Myoelectric Prosthetic Hands, VA Directors Meeting, Denver, CO July 2017
30. **J. L. Segil**, (2017) Integration of a Sensory Feedback Implant with Myoelectric Prosthetic Hands, VA Research Days, Denver, CO May 2017
31. **J. L. Segil**, (2017) Modern Prosthetic Design, Blow Things Up Lab, ATLAS Institute, CU Boulder, April 2017
32. **J. L. Segil**, (2017) IEEE Dine and Learn: Modern Prosthetic Devices, IEEE Denver Community Series, Westminster, CO, January 2017
33. **J. L. Segil**, (2016) Maker Education in a (Nearly) Empty Classroom, Colorado Learning and Teaching with Technology Conference, Boulder, Colorado, August 2016
34. **J. L. Segil**, (2016) IoT: What do Students Need to Learn to be Successful in this Field? Panel: Division Experimentation and Lab-Oriented Studies, American Society of Engineering Education Annual Conference, New Orleans, Louisiana, June 2016
35. **J. L. Segil** (2016) Engi-Near-Me, Broadening Opportunity through Leadership and Diversity (BOLD) program, Boulder, CO, June 2016
36. **J. L. Segil** (2015) Engi-Near-Me, Broadening Opportunity through Leadership and Diversity (BOLD) program, Boulder, CO, June 2015
37. **J. L. Segil,** (2014) Myoelectric Control Systems, BIOE 5073 – Neural Interfaces and Bionic Limbs, Department of Bioengineering, University of Colorado at Denver (2/12/2014)
38. **J. L. Segil,** (2014) Development and Validation of a Postural Controller for Advanced Myoelectric Prosthetic Hands, CEAS Spring Seminar, Department of Mechanical Engineering, University of Colorado at Denver (2/11/2014)
39. **J. L. Segil,** (2013) Pizza, Prostheses, and Pedagogy – A Graduate School Experience, MCEN 5027 – Graduate Seminar, Department of Mechanical Engineering, University of Colorado at Boulder (9/26/2013)
40. **J. L. Segil,** (2013) Skeletal and Muscular Systems and Prosthetic Hands, 8th grade class, Rogers Park Montessori (3/8/2013)
41. **J. L. Segil,** (2012) Skeletal and Muscular Systems and Prosthetic Hands, 7th grade class, Evergreen Middle School, Jefferson County Public School (12/20/2012)

42. **J. L. Segil,** (2012) Introduction to Brain Machine Interface and Myoelectric Control of Prosthetic Hands, MCEN 5117 – Anatomy and Physiology for Engineers, Department of Mechanical Engineering, University of Colorado at Boulder (10/8/2012)

Popular Press

1. "Electricity from Glucose? Researchers Seek Efficient Powering of Implanted Devices", CU Anschutz Medical Campus Blog, September 2022
2. "Hand Mobility – Colorado startup creates durable prosthetic fingers", OAP Almanac, February 2022
3. "Partial Hand Prosthetics Company Scales Manufacturing with Help from 3D Systems", 3D Systems Blog, March 2022
4. "VA did that: Next generation prosthetics for Veterans of all eras", Vantage Point Blog, October 2021
5. "At Your Fingertips", Medical Device Developments, April 2021
6. "CU Boulder Conference on World Affairs – Technology and Medicine", April 7th, 2021
7. "CU Boulder and Anschutz experimenting with blood sugar to power prostheses", CEAS Announcement, February 2021
8. "Guiding inventions from lab to market", Physics Today, February 2021
9. "Alternative Fuels", VA Currents, November 2020
10. "Re-creating the Hand", Coloradan Alumni Magazine, November 2020
11. "YOUR Health: Artificial Limbs let you "feel"", ABC WQAD 8, October 2020
12. "Healthy Living: Next Generation Prosthetics", 9 & 10 News, September 2020
13. "Prosthetics: The Artificial Hand that Feels", Ivanhoe Boradcast News, September 2020
14. "Next Generation of Prosthetics: The artificial hand that feels", Wink News, September 2020
15. "A new kind of prosthetics", Flint ABC 12 News, September, 2020
16. "CU Boulder Engineering Designing Artificial Limbs that Restore Sense of Touch for Amputees," AUVSI News, May 2020
17. "CU instructor developing fingerprint sensors", Denver ABC7 News, May 2020
18. "CU Boulder instructor researching way for amputees to feel again using prosthetic hands", Denver Fox31 News (KDVR), May 2020
19. Now Closer to Reality: Prosthetics that can Feel, CU Boulder Today, May 2020
20. "3 Teacher Who Inspire Us", SolidProfessor Blog, May 2019
21. "Exciting advances in prosthetic technology are restoring amputees' sense of touch", GetBoulder.com, Summer 2019
22. "Researchers Work to Bring Sense of Touch to Prosthetic Devices", Denver 4 CBS News, February 2019
23. "What are prosthetic hands missing? Robot fingertips that actually feel", ConnectingVets.com, January 2018
24. "Veterans to benefit from new fingertip sensors for prosthetic limbs", University of Colorado Boulder, CEAS Blog, November 2018

25. "The Mind's Eye", American Society of Engineering Education – Prism Magazine, October 2018
26. "Biomedical startup acquired by global medical technology firm", EurekAlert, May 2018
27. "A Helping Hand", CU Engineering Magazine, April 2016
28. "Spatial Visualization: A Promising Intervention for Promoting Student Equity", WEPAN Webinar, April 2016
29. "Q&A with Jacob Segil", SparkFun Blog, November 2015

Student Mentoring

1. Nicholas Woosley – Undergraduate Research Assistant, Department of Mechanical Engineering, Summer 2024 – present
2. Emerson Domke – Undergraduate Research Assistant, Department of Mechanical Engineering, Winter 2024 – Summer 2024
3. Thomas Disorbo – PhD Degree Committee, Department of Bioengineering, UC Denver | Anschutz Medical Campus, Fall 2020 – Present
4. Yu Kang Kong – Undergraduate Research Assistant, Department of Mechanical Engineering, Winter 2023 – Summer 2023
5. Graham Miller – Undergraduate Research Assistant, Department of Mechanical Engineering, Summer 2022 – Winter 2023
6. Jared Beshai – Master's Degree Committee, Department of Mechanical Engineering, CU Boulder, Fall 2020 – Spring 2022
7. Ben Carnicelli – Undergraduate Research Assistant, "Arthroscopic Tooling for Hip Arthroscopy", Summer 2021 – Summer 2022
8. Hoang Truong – PhD Degree Committee, Computer Science Department, CU Boulder, Fall 2021 – Summer 2022
9. Sarah Aguasvivas Manzano – PhD Degree Committee, Computer Science Department, CU Boulder, Fall 2021 – Spring 2022
10. Joshua Choice – Master's Degree Committee, Department of Bioengineering, UC Denver | Anschutz Medical Campus, Fall 2018 - Fall 2020
11. Chloe Rastatter – Undergraduate Research Opportunity, "High Fidelity Simulator for Trauma Training with Civilians in Conflict Zones", Summer 2020
12. Syd Levy – MCEN 4848 Independent Study, "Testing of Compliant Fingertip Pad", Spring 2020
13. Devon Ricken – Independent Study, "Comparison of HASEL Actuators to DC Motor in Prosthetic Hands", Spring 2020
14. Yimeng Liu – Master's Degree Dissertation Committee, Mechanical Engineering, Fall 2019
15. Zayna Pieper – GEEN 4848 Independent Study, "FRENZ – Customer discovery and design for manufacturability venture development", Fall 2019
16. Hana Kieger – Independent Study, "FRENZ – Customer discovery and design for manufacturability venture development", Fall 2019

17. Christina Chase-Markopolous – Undergraduate Research Opportunity Program (UROP), "Development of prosthetic fingers for use with HASEL actuators", Summer 2019
18. Tyler Scripps – Independent Study, "Mechanical testing of a multi-modal fingertip sensor", Summer 2019
19. Radhen Patel – Doctoral Dissertation Committee, Computer Science, Fall 2016 – Summer 2019
20. Racheal Ruppretch – GEEN 4848 – Independent Study, "Compliant Fingetip Pad Design for Point Digit", Fall 2018
21. Alex Mulvaney – GEEN 4848 – Independent Study, "ShineOn - Customer discovery and design for manufacturability venture development", Fall 2018
22. Kathy Vega – GEEN 4848 – Independent Study, "ShineOn - Customer discovery and design for manufacturability venture development", Fall 2018
23. Jeff Lamon – GEEN 4848 – Independent Study, "Invention and Innovation", Summer 2018
24. Humsini Acharya – GEEN 4848 – Independent Study, "Influence of Color on Bebionic Hand Prosthetic Fingertip Sensor", Spring 2018
25. Morgan Hoos – MCEN 4848 – Independent Study, "Point Thumb: A prosthetic thumb for heavy-duty use", Fall 2017
26. Yoni Shapiro – Independent Study, "The HASEL Finger: A proof of concept demonstration", Summer 2017
27. Marie Schmitt – MCEN 4848 – Independent Study, "Electromechanical Integration of a Prosthetic Hand with Finger Tip Sensors", Spring 2017
28. Michael Amoun – MCEN 4848 – Undergraduate Independent Study, "Design of an Abduction Drive for a Prosthetic Hand", Fall 2016
29. Kaiyang Zheng – MCEN 4848 - Undergraduate Independent Study, "Tactile Sensor Integration in a Prosthetic Hand", Summer 2016
30. Khalia Hogg – MCEN 4848 - Undergraduate Independent Study, "Big Bike Mechanical Design Project", Fall 2015

Review Panels

1. Department of Veterans Affairs – Rehabilitation Research and Development, Small Projects Innovative Research (SPiRE) Program – Fall 2021
2. National Science Foundation – Medical Device SBIR Phase I Panel – Aug 2021
3. Department of Veterans Affairs – Rehabilitation Research and Development, Small Projects Innovative Research (SPiRE) Program – Spring 2021
4. National Science Foundation – Medical Device SBIR Phase II Panel – April 2021
5. Department of Veterans Affairs – Rehabilitation Research and Development, Small Projects Innovative Research (SPiRE) Program – Spring 2020
6. Myoelectric Control Symposium (Editor) – Prosthetic Design Track – Spring 2020
7. National Institute of Health – Emerging Technologies and Training in the Neurosciences (ETTN) SBIR/STTR Panel – Summer 2020
8. Department of Veterans Affairs – Rehabilitation Research and Development, Small Projects Innovative Research (SPiRE) Program – Fall 2020

Technical Skills

• Software expertise: MATLAB, Solidworks, LabView, Arduino, C/C++, Working Model, Pro/Engineer, MotionAnalysis, Simulink, Microsoft Word, Microsoft Excel, Microsoft Powerpoint

• Hardware expertise: EOS M360 metal laser sintering 3D printer, Objet dual-material plastic 3D printer, Noraxon EMG acquisition system, OptoTrak motion capture system, Vicon motion capture system, Bertec split-belt treadmill, CNC mill, CNC lathe