

RESUME - Tyler George Harvey

PERSONAL DATA

Current Rank: Lecturer
Address: Department of Bioengineering
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EDUCATION

Ph.D., Clemson University, 2018, Bioengineering
Certificate, Clemson University, 2018, Engineering & Science Ed
M.S., Clemson University, 2016, Bioengineering
B.S., Clemson University, 2014, Bioengineering

PROFESSIONAL EXPERIENCE

Clemson University, 2019-present , Lecturer of Bioengineering
Clemson University, 2019, Post-doctoral Fellow of Bioengineering

CONSULTING EXPERIENCE

SC Governor's School for Science and Mathematics, Hartsville, SC
(2017-2019, 2022-2024), developed and delivered curriculum for
engineering and technology outreach camps

PROFESSIONAL MEMBERSHIPS

Member, Biomedical Engineering Society, BMES (2010-)
Member, American Society for Engineering Education, ASEE (2016-)
Member, Biomedical Engineering Education Community, BEEC (2021-)
Member, Amer. Assoc. for the Advancement of Science, AAAS (2017-)
Member, Association for the Tutoring Profession, ATP (2016-2018)

PUBLICATIONS

Refereed Journal Publications and Conference Proceedings

T.G. Harvey. Factors Influencing Career Choice and Success in Undergraduate BME Students (Work in Progress). *ASEE Annual Conference 2024*.

T.E. Parr, J.D. DesJardins, A.R. Hippensteal, **T.G. Harvey**, G. Lv. Transfemoral Prosthesis with Ambulatory Length-Actuation: Design and Preliminary Evaluation. *IEEE Trans on Medical Robotics and Bionics*. Under Review (2024).

A.R. Smothers, J.R. Henderson, J.J. O'Connell, J.M. Stenbeck, D. Dean, **T.G. Harvey**, B.W. Booth. Efficacy and Selectivity of Tumor-Treating Field Therapy

for Triple-Negative Breast Cancer Cells via In-House Delivery Device. *Discover Oncology*. 2023 Mar 29;14(1):34.

J. Rodriguez-Devora, **T. Harvey**, W.D. Ferriell, K. Frady, M. Hinson, B. Putnam. Outreach Program Evaluation through the Lens of Engineering Identity Development (Evaluation). *ASEE Annual Conference 2022*.

A.N. Chowdhury, H. T. Vo, S. Olang, E. Mappus, B. Peterson, N. Hlavac, **T. Harvey**, D. Dean. A Customizable Chamber for Measuring Cell Migration. *J. Vis. Exp.* 121. e55264, doi:10.3791/55264 (2017).

Other Scholarly Publications

Harvey, TG. “Computational approaches to understanding structure-function relationships at the intersection of cellular organization, mechanics, and electrophysiology.” Ph.D. Dissertation, Clemson University (2018).

Harvey, TG (2017). CellSpark Electrophysiology Simulator [Computer Software]. Clemson, SC: Clemson University.

Harvey, TG & Dean, D. (2017). AFM Indentation Analysis [Computer Software]. Clemson, SC: Clemson University.

Patents

R. Rapert, R.A. Latour, G. Chumanov, **T.G. Harvey**, & G. Korneva. (2021). A Simple, Low-Cost Method of Measuring Ammonia Concentration in Exhaled Breath for Routine Monitoring of Chronic Kidney Disease. (US Patent Application No. 17,517,919). *Application Under Review*.

PRESENTATIONS

Panels Organized

“Preparing for Graduate School” **T Harvey**, M LaBerge, B Ely. SCINBRE Academic Leadership and Career Development Workshop: Columbia, SC. June 2018.

Oral Presentations

WD Ferriell, M Hinson, **T Harvey**, J Rodriguez-Devora, B Putman, “Engineering Identity Development from an Outreach Program Intervention: A Pilot Study” BMES Annual Meeting: Orlando, FL. October 2021.

T Harvey, D Dean., “CellSpark: A Simulation Tool to Spark Discovery Learning of Electrophysiology” BMES Annual Meeting: Atlanta, GA. October 2018.

T Harvey, D Dean, BC Dean., “Constructing a realistic brain phantom for the validation of the Independent Component Analysis of epileptic EEG data.” South Carolina Junior Academy of Science Annual Meeting. Orangeburg, SC: April 2011.

Poster Presentations

D. Ranwala, M. LaBerge, **T. Harvey**, D. Dean. *Education and Workforce Development Strategies in Biomaterials Sciences and Research to Enhance Global Biomedical Innovation*. World Biomaterials Congress, May 2024. Daegu, Republic of Korea.

Fleming, A., Mann, E., Ni, S., Rush, L., Zavala, V., Alexander, A., Damas, S., Dean, D., Gilmore, J., **Harvey, T.**, McCoy, M. *Pandemic Prevention, Response, Intervention, Mitigation, and Elimination: Accessible PPE For All*. Clemson University 19th Annual Focus on Creative Inquiry Forum, April 2024. Clemson, SC.

T. Parr, A. Hippensteal, G. Lv, **T. Harvey**, S. Thomas, T. Driscoll, B. Lawhorn, J. DesJardins, *Development of a Novel Length-Actuated Transfemoral Prosthesis for Functional Symmetry*, American Academy of Orthotists and Prosthetists, March 2-5, 2022. Atlanta, GA.

T. Parr, A. Hippensteal, G. Lv, **T. Harvey**, B. Lawhorn, S. Thomas, T. Driscoll, J. DesJardins, *Development of a Length-Actuated Transfemoral Prosthesis Based on Dynamic Leg Length Modeling*, Prisma Health Research Showcase, October 22, 2021. Greenville, SC.

Latour R.A., Chumanov G., DeLuca J.M., Garimella S., **Harvey T.**, Korneva G., Rapert R., “Simple, Low-Cost At-Home Monitoring for Rare Metabolic Diseases: Phenylketonuria and Urea Cycle Disorders”, SERGG Annual Conference (Virtual), July 2021.

A Abdulrahman, **T Harvey**, D Dean., “Effect of Glucose and Glycated Albumin on Vascular Smooth Muscle Cells”, BMES Annual Meeting: Virtual. October 2020.

E Fast, **T Harvey**, D Dean., “Understanding the Role of the Glycocalyx in Whole Cell Mechanics Measurements” BMES Annual Meeting: Atlanta, GA. October 2018.

O Newkirk, **T Harvey**, D Dean., “Device for Arm Motion Analysis to Investigate Soft Tissue Tearing in Sports Injuries” BMES Annual Meeting: Atlanta, GA. October 2018.

A Desai, T Harvey, B Dean, D. Dean, “Characterizing Cardiovascular Cell Mechanical Structure Function Relationships”, 8th World Congress on Biomechanics: Dublin, Ireland, July 2018.

T. Harvey, B. Dean, D. Dean, “Computational Approaches to Understanding Single Cell Structure-Function Relationships”, BMES, Phoenix, AZ, October 2017.

T. Harvey, B. Dean, D. Dean, “Estimating Myofibril Distribution in Adult Cardiomyocytes: A Subcellular Min-Cost Flow Problem”, BMES, Minneapolis, MN, October 2016.

T. Harvey, D. Dean, B.C. Dean., “Estimating Myofibril Distribution in Adult Cardiomyocytes: A Subcellular Min-Cost Flow Problem” 7th International Workshop on Cardiac Mechano-Electric Coupling and Arrhythmias. Freiburg, Germany: September 2016.

A. Desai, **T. Harvey**, J. Rodriguez, D. Dean., “Effects of Cell and Matrix Interactions on Mechanical Properties of Cardiac Cells.” Society for Biomaterials Annual Meeting. Charlotte, NC: April 2015.

A. Nguyen, E. Mappus, **T. Harvey**, B. Peterson, M. O'Kelly, E. Hammes, and D. Dean, “Fibroblasts Solving Mazes in Response to Growth Factor Concentration”, BMES, Atlanta GA, October 2012.

E. D. Mappus, A.K. Nguyen, **T.G. Harvey**, B.D. Peterson, E.A. Hammes, D. Dean “3T3 Fibroblasts Solving Mazes in Response to Growth Factor Concentration”, South East Biomedical Engineering Career Conference (SEBECC) meeting in Herndon, VA, 2011.

T. Harvey, D. Dean, B.C. Dean, “The Effect of nonhomogeneous and anisotropic conductivity properties on the performance of ICA”, BMES, Hartford CT, October 2011.

T. Harvey, B.C. Dean, D. Dean, "Constructing a realistic brain phantom to validate the Independent Component Analysis of EEG Data", BMES, Austin, TX, October 2010.

GRANTS AND PROPOSALS

Roberts H. Brooks Sports Science Institute Seed Fund, “From Virtual Pitch to On-Field Performance: Developing More Effective and Inclusive VR Soccer Training Experiences.” (Co-PI). *Pending*. Total amount: \$27,310, Allocated Amount: \$5,462. (2024).

Spencer Foundation Research-Practice Partnerships, “Global Health Design: Cultivating Competence and Innovation in Bioengineering Education.” (Co-I). *Pending*. Total amount: \$400,000, Allocated amount: \$80,000. (2023).

National Institutes of Health (NIH), “Call Me Doctor ESTEEMED Scholars Program at Clemson University.” (Co-I). Funded. Total amount: \$983,938, Allocated Amount: \$196,788. (2023-2028).

CURF/Prisma Health Technology Seed Fund, “At-Home Monitoring Device for Patients with Chronic Kidney Disease.” (KP). Funded. Total amount: \$21,452, Allocated Amount: N/A. (2020).

HONORS AND AWARDS

Alan Shaffer Faculty Senate Service Award (2024)
Faculty Senate Delegate of the Year (2023, 2024)
Clemson Bioengineering Outstanding GTA (2018)
Tau Beta Pi – The Engineering Honor Society (2014)
Alpha Eta Mu Beta – National Biomedical Engineering Honor Society (2014)

GRADUATE AND HONORS STUDENT ADVISING

Past Graduate Advising

Parr, T., (PhD), “Development of a Length-Actuated Transfemoral Prosthesis Based on Dynamic Leg Length Modeling”, May 2023, (Committee member).

Smothers, A., (PhD), “Tumor-Treating Fields as an Alternative Radiotherapy for Triple-Negative Breast Cancer”, May 2023, (Committee member).

Rapert, R., (MS), “At-Home Monitoring Device for Patients with Chronic Kidney Disease (CKD)”, May 2020, (Committee member).

Past Honors Advising

T.H. Jimenez, J. Hanna, & J.M. Lautenschlager. (Honors Theses), “3D Printed Customizable Finger Splints.” May 2023, (Advisor).

STUDENT HONORS AND AWARDS

K. Vaishnavi, E. Dods, K. De Guzman, A. Chen. 2024 PDMA Carolinas: Student Innovation Competition - First Place (\$1,000).

C. Chernyatinskiy, A. Spearman, N. Stiebler, O. Aguilar, A. Bowie. 2024 PDMA Carolinas: Student Innovation Competition - T-3rd Place (\$500)

A. Beall, M. Chavez Solano, S. Saenz, K. Traver. 2024 PDMA Carolinas: Student Innovation Competition - T-3rd Place (\$500)

K. Vaishnavi, E. Dods, K. De Guzman, A. Chen. 2024 Johns Hopkins Healthcare Design Challenge, Advanced Health Category - First Place (\$5,000).

K. Vaishnavi, E. Dods, K. De Guzman, A. Chen. 2024 Brook T. Smith Launchpad Liftoff Pitch Competition - First Place (\$5,000).

C. Chernyatinskiy, A. Spearman, N. Stiebler, O. Aguilar, A. Bowie. 2024 Brook T. Smith Launchpad Liftoff Pitch Competition - Third Place (\$2,000).

C. Chernyatinskiy, A. Spearman, N. Stiebler, O. Aguilar, A. Bowie. 2024 CECAS Spark Challenge - First Place (\$2,500).

A. Beall, M. Chavez Solano, S. Saenz, K. Traver. 2024 CECAS Spark Challenge - Second Place (\$1,000).

K. Vaishnavi, E. Dods, K. De Guzman, A. Chen. 2024 CECAS Spark Challenge - Third Place (\$500).

Z. Dinkel, J. Davenport, Z. Dolan, K. Farmer, B. Henline. 2024 CECAS Spark Challenge - Audience Favorite (\$500).

A. Beiter, R. Hamm, M. Thomas, A. Wichmann. 2023 NIH DEBUT Challenge - Technologies to Empower Nurses in Community Settings Prize (\$15,000).

A. Reichart, J.S. Cole, S.A. Stevens, K.F. Ripple, K. Fallon. 2023 University of Arkansas Heartland Challenge - Fourth Place (\$5,000).

M.E. Turk, P. Suresh, E. Hatcher, H. Swank. 2023 Spiro Pitch SmackDown - First Place (\$5,000).

J.J. Baek, A. Jacob, C.L. Peak, S. Thammana, C.M. Streeter. 2023 PDMA Carolinas: Student Innovation Competition - First Place (\$1,000).

M.E. Turk, P. Suresh, E. Hatcher, H. Swank. 2023 CECAS Spark Challenge - First Place (\$2,500).

K. Chitwood, S. Bukhari, T. Horvath, J.M. Lautenschlager, T.H. Jimenez. 2023 CECAS Spark Challenge - Audience Favorite (\$500).

J. Wells, E.F. Miller, A.J. Keup, S.M. Desimone, S. St Cyr. 2022 SCInnovates Competition - First Place (\$5,000).

J. Wells, E.F. Miller, A.J. Keup, S.M. Desimone, S. St Cyr. 2022 SCInnovates Competition - Audience Favorite (\$500).

A. Reichart, J.S. Cole, S.A. Stevens, K.F. Ripple, K. Fallon. 2022 Collegiate Inventors Competition - First Place (\$10,000).

A. Reichart, J.S. Cole, S.A. Stevens, K.F. Ripple, K. Fallon. 2022 Collegiate Inventors Competition - Arrow People's Choice (\$2,000).

Z. Lesesne, A. Csiszer, C. Winchester, J. Abadeer, S. Wilde. 2022 BMES Medtronic Undergraduate Design Competition - Finalist.

A. Reichart, J.S. Cole, S.A. Stevens, K.F. Ripple, K. Fallon. 2022 PDMA International: Student Project Competition - Fourth Place.

A. Reichart, J.S. Cole, S.A. Stevens, K.F. Ripple, K. Fallon. 2022 PDMA Carolinas: Student Innovation Competition - First Place (\$1,000).

A. Reichart, J.S. Cole, S.A. Stevens, K.F. Ripple, K. Fallon. 2022 Spiro Pitch SmackDown - First Place (\$10,000).

A. Reichart, J.S. Cole, S.A. Stevens, K.F. Ripple, K. Fallon. 2022 ACC Inventure Prize - Second Place (\$5,000).

A. Reichart, J.S. Cole, S.A. Stevens, K.F. Ripple, K. Fallon. 2022 CECAS Spark Challenge - First Place (\$2,500).

G.R. Grow. 2021 CECAS Undergraduate Research Grant (\$500).

S. Reed, V. Sama, J. Capuano, P. Konczal, M. Stiglich. 2020 NIH DEBUT Challenge - Honorable Mention.

H. Abbott, A. Alerre, B. Dorsey, M. Hartsell, A. Schrader. 2020 Johns Hopkins Healthcare Design Challenge - Finalist.

X. Peralta, M. Blankenship, A. Chernick, Z. Richardson. 2019 NIH DEBUT Challenge - Honorable Mention.

S. Ward, Z. Ballard, D. Mcleod, O. Duggan, D. Nigoa. 2019 Johns Hopkins Healthcare Design Challenge - Finalist.

E. Fast. 2019 SC Junior Academy of Science - First Place Paper, Engineering (\$100).

E. Fast. 2019 SC Junior Academy of Science - First Place Presentation, Engineering (\$100).

TEACHING

Courses Taught

BIOE 1010, Biology for Bioengineers, S19*, F19-S24
BIOE 2000, Bioengineering Professional Development, S20, S21
BIOE 2010, Introduction to Biomedical Engineering, Su20, Su21
BIOE 3000, Bioengineering Ethics and Entrepreneurship, S19*, F19, F20-S22
BIOE 3700, Bioinstrumentation and Imaging, Su22, Su23
BIOE 4030, Applied Biomedical Design, S19*, S20*, S21*, S22*, S23*, S24*
BIOE 4010, Bioengineering Design Theory, F19*, F20*, F21*, F22*, F23*
BIOE 4510, K12 STEM Outreach through Sports Science, S20*-S22*
BIOE 4200/6200, Sports Engineering Su21, S22, S23-S24
BIOE 4500/8500, Sports Equipment Design and Analysis, Su22

New Course Development

BIOE 4510, K12 STEM Outreach through Sports Science, S20*
BIOE 4910, 3D Printed Jointed Customizable Splints, F21
BIOE 4200/6200, Sports Engineering, Su21
BIOE 4500/8500, Sports Equipment Design and Analysis, Su22
*Co-instructor

UNIVERSITY AND PUBLIC SERVICE

Committees

Department: Co-Chair, Undergraduate Program Committee (2023 – present)
Co-Chair, Curriculum Committee (2023 – present)
Member, Bylaws Committee (2023 – present)
Member, Department Chair Search Committee (2022-2023)
Member, Undergraduate Program Committee (2021 – 2023)
Chair, Undergraduate Curriculum Revision Task Force (2021 - present)
Member, Diversity, Equity, and Inclusion Committee (2019 - 2023)

College: Member, Multidisciplinary Capstone Design Task Force (2023-present)
Member, Virtual Instruction Community of Practice (2020)
Member, Instructional Lab Community of Practice (2020)

University: Senator, Faculty Senate (2024 - present)
Chair, Faculty Senate Policy Committee (2024 - present)
Delegate, Faculty Senate (2022 - 2024)
Member, Faculty Senate Policy Committee (2022 - 2024)

Other Service

Abstract and Manuscript Reviewer, American Society for Engineering Education (2023-present)

Manuscript Reviewer, Biomedical Engineering Education (2021-present)

Abstract Reviewer, Biomedical Engineering Society (2021)

Biomedical Sciences Advisory Committee, Anderson Institute of Technology (2021)

Alumni/Higher Ed Representative, SCGSSM Online Diploma Working Group (2021)

Awards Co-Chair, South Carolina Governor's School for Science and Mathematics (SCGSSM) Alumni Association Board of Directors (2020 - 2022)

Manuscript Reviewer, Progress in Biophysics (2020)

Faculty Advisor, Clemson Bionics Club (2019 - present).

Last updated April 15, 2024