Loris Fichera, Ph.D.

Assistant Professor of Robotics, Mechanical Engineering, Biomedical Engineering, and Computer Science
Worcester Polytechnic Institute
100 Institute Road, Worcester MA 01609
+1 (508) 831-5021
lfichera [at] wpi.edu
http://comet-lab.github.io

CV Highlights

Education: PhD, 2015, Robotics, Cognition, and Interaction Technologies, University of Genova, Italy

Awards: NSF CAREER Award (2023), ISCAS Koh Young Investigator Scholarship (2016)
8 Nominations for Best Paper/Poster/Presentation, 3 Awards

Publications: 19 refereed journal articles published on in press
25 refereed conference papers in print or in press
8 undergraduate co-authorships on peer-reviewed publications (4 as first author)

Funding: $1,054,602 in external research funding as Principal Investigator
$1,501,015 in external research funding for all projects in which I have been involved

Advising: 1 PhD Dissertation
Currently advising 2 PhD students (one of them is an NSF GRFP) + 2 more to join in Fall 2024
6 MS Theses
23 senior capstone projects (10 as primary advisor – 5 received or were nominated for awards)

Teaching: 16 courses offered since joining WPI
Median course rating: 4.8 (out of a maximum of 5)
Median instructor rating: 4.9 (out of a maximum of 5)
Rho Beta Epsilon (Robotics Honors Society) Award for Excellence in Robotics Education, 2019
Created new graduate course: RBE 522 – Continuum Robotics

Ext. Service: Associate Editor, IEEE Robotics and Automation Letters since 2020
Associate Editor, IEEE ICRA and BIOROB conferences
Workshop Organizer at IROS 2022, ISMR 2023, ISMR 2024, Hamlyn Symposium 2024
Grant proposal reviewer for the NSF, NIH, and DoD
Reviewer for several journals and conferences, including T-RO, T-MRB, IJRR, RA-L, JMRR, ASME JMR, IEEE ICRA, IROS, MFI, EMBC, BIOROB, RSS

Int. Service: Committee on Graduate Studies and Research (CGSR), 2020-2023*
(*Including one stint as secretary in the 2022-2023 AY)
Office of Undergraduate Research Advisory Board, 2019-2020
On-Campus Research Continuation Appeal (ORCA) Committee, 2020
Robotics Colloquium Committee, Chair, 2019-present

Tech. Transfer: 1 Patent Awarded
2 Patents Pending

BACKGROUND

1. Education

Ph.D.   Robotics, Cognition, and Interaction Technologies, University of Genova, Italy   2015
         Dissertation Title: Cognitive Supervision for Robot-Assisted Minimally Invasive Laser Surgery
         Advised by Darwin G. Caldwell, Leonardo S. Mattos, Diego Pardo

M.S.   Computer Engineering, University of Catania, Italy   2011
         Thesis Title: Design and Implementation of a Monitoring System for Photovoltaic Power Stations
         Advised by Corrado Santoro
         Evaluation: 110/110, cum laude[*]

B.S.   Computer Engineering, University of Catania, Italy   2008
         Thesis Title: Design and Implementation of a Localization System for Autonomous Mobile Robots
         Advised by Corrado Santoro
         Evaluation: 110/110, cum laude[*]

2. Work Experience other than Teaching

Postdoctoral Researcher, Dept. of Mechanical Engineering, Vanderbilt University, USA   2015-2017
Graduate Research Assistant, Dept. of Advanced Robotics, Italian Institute of Technology, Italy   2012-2015
Junior Storage Administrator, Autostrade per l'Italia SpA, Italy   2011
Software Engineer, Jurma Srl, Italy   2011
Visiting Research Fellow, School of Engineering, University of Hertfordshire, UK   Spring 2010

TEACHING

3. Teaching Experience

Assistant Professor, Worcester Polytechnic Institute, USA   2018-present
Visiting Assistant Professor, Worcester Polytechnic Institute, USA   Fall 2017

4. Teaching Innovations at WPI

- **New Graduate Course – RBE 522**: I designed a new graduate course entitled "RBE 522: Continuum Robotics," which was offered for the first time in A Term 2022. Continuum robotics focuses on the study of *continuously flexible* robotic arms. This emerging branch of robotics takes inspiration from flexible animal appendages (e.g., tentacles) to create arms capable of performing complex bending motions. Real-world applications of continuum robots include minimally invasive surgery, inspection and repair of complex parts (e.g., jet engines), and more generally any scenario that requires accessing hard-to-reach cavities and/or navigating through tortuous paths. RBE 522 introduces students to fundamental topics in continuum robot design, modeling, and control. The course culminates in the development of a continuum robot, which students use as platform to apply the concepts learned in the classroom.

- **New Grading Strategies to Help Students Focus on Learning rather than Grades**: Since the Spring 2022 semester, all my courses implement a *Reassessment Without Penalty* strategy, where students are allowed to re-take specific assignments (typically homework) after receiving instructor feedback on their initial submission. The first course to implement this strategy was the Spring 2022 offering of RBE 501 – Robot Dynamics. Data from the Student Course Report (shown at the top of the next page) indicates that students felt overall less stressed about grades, and furthermore felt incentivized to engage with my feedback and learn from it.

---

[*] This is the highest possible academic distinction in Italy.
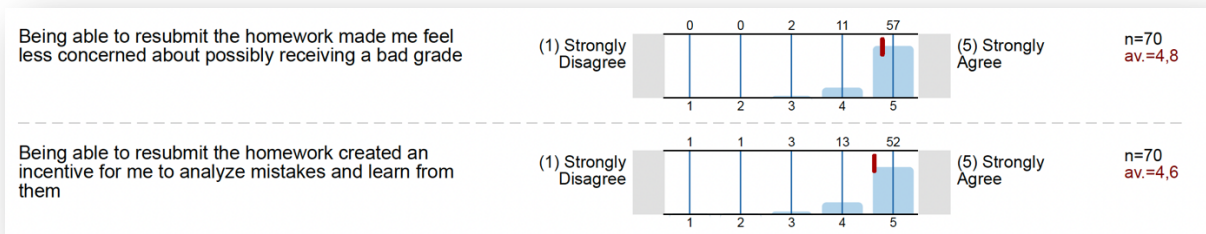
- **Graduate Course Redesign – RBE 501**: In 2021, I re-designed "RBE 501: Robot Dynamics" and introduced the following topics that were previously not part of the syllabus of RBE 501: Lie Groups, Exponential Coordinates, Product of Exponentials, Numerical Inverse Kinematics Algorithms, the Recursive Newton-Euler Algorithm. I developed new MATLAB-based assessments for this course. All the homework assignments are now administered through MATLAB Grader, an online platform through which students can submit their code and get immediate feedback without having to wait for the instructor/TAs to grade their assignment.

- **New Module for Undergraduate Course – RBE 3001**: In 2018, I created a new module for "RBE 3001: Unified Robotics – Manipulation" that focuses on vision-based tracking. This new module filled a gap in the undergraduate "Unified Robotics" sequence by covering for the first time the fundamentals of vision-based robot tracking. The module includes 2 entirely new lectures and 1 new laboratory assignment.

5. Courses Taught at WPI

The following table lists all the courses I have taught at WPI to date. For each course, the table reports the class size and the average student ratings (rounded to the nearest decimal value) for:

- Question 1 – Overall Course Rating
- Question 2 – Instructor Rating
- Question 7 – The amount learned in the course
- Question 9 – The instructor personal interest in helping students
- Question 12 – The instructor preparedness to teach class

Ratings use a 5-point scale, with 1 being the lowest score and 5 being the highest.

Year	Term	Course	Course Title	Class Size	Q1	Q2	Q7	Q9	Q12
2018	C	RBE 3001	Unified Robotics III - Manipulation	45	4.7	4.9	4.8	4.8	4.9
2018	Fall	RBE 595	Advanced Topics in Surgical Robotics	3	5	5	5	5	5
2019	C	RBE 3001	Unified Robotics III - Manipulation	57	4.9	4.9	4.7	4.8	4.9
2019	B	RBE 595	Advanced Topics in Surgical Robotics	10	4.7	4.8	4.6	4.9	4.5
2020	C	RBE 3001	Unified Robotics III - Manipulation	43	4.8	4.9	4.6	4.6	5
2020	Fall	RBE 594	Capstone Project Exp. In Robotics Eng.	6	5	4.8	3.8	5	5
2020	B	RBE 595	Advanced Topics in Surgical Robotics	14	4.8	4.9	4.3	4.8	4.9
2021	Spring	RBE 501	Robot Dynamics	32	4.8	4.6	4.4	4.7	4.9
2021	Fall	RBE 501	Robot Dynamics	42	4.6	4.8	4.3	4.9	5
2021	B	RBE 595	Advanced Topics in Surgical Robotics	7	5	5	4.6	4.9	5
2022	Spring	RBE 501	Robot Dynamics	86	4.6	4.7	4.2	4.9	4.9
2022	A	RBE 522	Continuum Robotics	14	4.9	5	4.6	4.9	5
2022	Fall	RBE 594	Capstone Project Exp. In Robotics Eng.	11	4.6	5	4.4	4.9	4.8
2023	Spring	RBE 501	Robot Dynamics	53	4.8	4.9	4.3	4.9	5
2024	C	RBE 3001	Unified Robotics III – Manipulation	51	4.6	4.6	4.6	4.3	4.8
2024	Spring	RBE 501	Robot Dynamics	66	4.7	4.7	4.2	4.7	4.9

6. Undergraduate Projects Advised and Co-advised at WPI

Major Qualifying Projects[†]

As main adviser:

MQP1. Mark Gagliardi, Chase Beausoleil, Samay Govani, Cole Parks, *Flexible Articulating Surgical Transoral Robot*. 2024.

MQP2. Julia Farnum, Jacquelyn Lopez, Ananya Gopalan, Christopher DeMaio, *Super-elastic Continuum Robot for Endoscopic Articulation and Manipulation* 5.0. 2023. Awarded the Best MQP in the Medical Robotics Track.

MQP3. Emily Minch, Rositsa Mihaleva, Hoang Do, Ryan Tougas, *Super-elastic Continuum Robot for Endoscopic Articulation and Manipulation* 4.0. 2022.

MQP4. Brandon Sanders, Kyle Lang, *Optically-driven Robots*. 2021. Awarded an Honorable Mention for the Provost's MQP Award.

MQP5. Sabrina Liu, Phillip Abell, Samuel Johnson, Zhongchuan Xu, *Super-elastic Continuum Robot for Endoscopic Articulation and Manipulation* 3.0. 2021. Awarded the RBE Director's MQP Award.

MQP6. Irene Wong, Yixue Wang, Kayla Swiston, Floris Van Rossum, *Tissue-type Recognition for Laser-Based Surgery*. 2020.

MQP7. Nicholas Pacheco, Jesse d'Almeida, Joseph Bartone, Andrew Gulotta, *Super-elastic Continuum Robot for Endoscopic Articulation and Manipulation* 2.0. 2020. Awarded an Honorable Mention for the Provost's MQP Award.

MQP8. Chenggu Wang, Ryan St. Hilaire, Matt Collins, James Kradjian, Wentao Yuan, *Thermal Endoscope for Robotic Surgery*. 2019.

MQP9. Zach Boyer, Ben Mart, Cory Brolliar, Kevin O'Brien, *Super-elastic Continuum Robot for Endoscopic Articulation and Manipulation*. 2019. Awarded the RBE Director's MQP Award.

MQP10. Andre Imperiali, *Design, and Implementation of a Manufacturing Process to create Nitinol Flexure Wrists for use in Medical Applications*. 2018.

As co-adviser:

MQP11. Megan DeSanty, Rebecca Young, Omri Green, Elizabeth Minor, Isabelle Lachaux, Robotics Intracardiac Catheter Steering System. 2024. (primary adviser: Haichong Zhang)

MQP12. Ethan Weisse, Hannah Zink, Luis Aldarondo, Antonios Sevastos. *Assistive Soft Robots for Helping Daily Tasks*. 2024. (primary adviser: Berk Calli)

MQP13. Mason Mitchell, *Real-Time Magnetic Sensing for Soft 3-DoF Continuum Robots*. 2023 (primary adviser: Cagdas Onal). Awarded the Best Robotics MQP Poster Award

MQP14. Natalie McClain. *ScreamaeraX: Modeling Laryngeal Surgical Robots Using Differential Dynamic Logic*. 2023. (primary adviser: Rose Bohrer)

MQP15. Arthur Ames, Charlotte Clark, Evelyn Dube, Declan Murphy, *Creating the Pwnable Claw Machine*. 2023. (primary adviser: Robert Walls). Awarded the Provost MQP Award.

MQP16. Michael Beskid, Ryan Brunelle, Calista Carrignan, Robert Devlin, Toshak Patel, Kofi Sarfo, *Design and Testing of an Amphibious UAV*. 2023. (primary adviser: Michael Demetriou).

MQP17. Rui Hou, Yongxian Jin, Te Lu, *A Robotic Medical Device for Spinal Surgery*. 2022. (primary adviser: Yihao Zheng).

MQP18. Hannah Brooks, Zhuofan Lu, Karina Mirochkin, Olivia Petropulos, *Optical Coupling System Optimization for Medical Laser Surgical Applications*. 2022. (primary adviser: Shawn Liu).

MQP19. Nicholas Weddington, Tej Sheth, Ryan Eastwood, Timothy Fromme, *N-Link Modular Smart Robotic Arm*. 2020. (primary adviser: Cagdas Onal)

MQP20. Keion Bisland, Xavier Little, Alex Tacescu, *Smallkat MQP*. 2019. (primary adviser: Nick Bertozzi)

MQP21. Daniel Wivagg, Ariel Goldner, Steven Franca, Matthew Schueler, Stephanie Marcucci, *Preventative Care Knee Exoskeleton*. 2019. (primary adviser: Greg Fischer)

[†] At WPI, senior capstone projects are called Major Qualifying Projects.

    MQP22.   Bohn Bunnag, Colin Buckley, Rebecca Miles, Apiwat Ditthapron, *Object Manipulation and Control with Robotic Hand*. 2019. (primary adviser: Jane Li)

    MQP23.   Kirsten Herchenroder, Spenser Martin, Connor Mastropoli, Maria Perez Luna, Silvio Torres, *Dynamic Correction of Postural Kyphosis*. 2018. (primary adviser: Greg Fischer)

Interactive Qualifying Projects

IQP1.   Julia Milks, *A Review of Technological Predictions for Office-Based Laryngeal Surgery*, 2020.

Undergraduate Research Projects

RE1.   Kang Zhang, Christopher Pacheco. *Numerical Simulation of Laser-Tissue Interactions* (funded by an REU supplement on my NSF CAREER **[G2]**), Summer 2024.

RE2.   Ashley Espeland, *Tissue Temperature Control in Laser Surgery*, Early Research Experience in E-Term (EREE), 2024.

RE3.   Kyla Fu, Kang Zhang. *Development of a Handle for a Surgical Laser Fiber*, Summer 2023.

RE4.   Emily Minch, Rositsa Mihaleva, Hoang Do, Ryan Tougas, *Preliminary work for **[MQP3]*** (funded by a combination of start-up and NIH funds **[G3]**), 2021.

RE5.   Isabelle Chan, Jesse d'Almeida, Reachability Analysis for Optical Fibers in the Larynx (funded through NIH funds **[G3]**), 2020.

RE6.   Jialin Song, *Making Surgical Lasers to Cut Better*, Summer Training in Arts & Sciences (STAR), 2020.

RE7.   Razan Andigani, *In-vitro models of the Larynx*, Early Research Experience in E-Term (EREE), 2019.

RE8.   Floris Van Rossum, *N3RDS: Notched Endoscope Research Design Software*, Summer Research Project (funded with start-up funds), 2019.

RE9.   Samantha Moriarty, *Fabrication of Agarose Gels for Laser-Tissue Interactions Studies*, Summer Research Project (funded with start-up funds), 2018.

7. Graduate Theses and Dissertations Advised at WPI

Doctoral Dissertations

PhD1.   Alex Chiluisa, *New Miniaturized Wristed Instruments for In-Office Endoscopic Laser Surgery*. 2024.

PhD2.   Nicholas Pacheco. 2025 (expected). Awarded the NSF GRFP in April 2022.

PhD3.   Wenpeng Wang. 2027 (expected).

PhD4.   Callahan Henry. To join in the Fall of 2024.

PhD5.   Lucas Burstein. To join in the Fall of 2024.

Master's Theses

MS1.   Christopher DeMaio, An Experimental Study of the Mechanical Response of Nylon 12 Tubing: Practical Implications for Use in Concentric Tube Robots. 2024.

MS2.   Kalina Bonofiglio, *Making Concentric Tube Robots More Accessible: An Open-Source Platform with Easy-to-Source Components and Guided Learning Materials*. 2023.

MS3.   Jesse d'Almeida, *Making Concentric Tube Robots More Accessible: A New Open-Source Design Made of 3D-Printed and Other Easy-to-Source Materials*. 2021. Awarded the Glenn Yee Robotics Graduate Student Project Award.

MS4.   Nicholas Pacheco, *A New Mechanics Model for Continuum Notched-Tube Wrists that Accounts for Tendon Friction and Material Nonlinearities*. 2021.

MS5.   Karim Tarabein, *Towards the Automatic Control of Laser Cutting for Laser Surgery*. 2019.

MS6.   Shravan Murlidaran, *A mixed reality framework for surgical navigation: approach and preliminary results*. 2019.

Membership on Graduate Capstone/Thesis/Dissertation Committees

Robotics Practicum:

    SC1.   Prathamesh Mehta, RBE MS 2024 (expected).

    SC2.   Yash Garjie, RBE MS 2023.

SC3. Akash Ashok Thorat, RBE MS 2023.
SC4. Abhishek Shivdeo, RBE MS 2023.
SC5. Ankit Vedak, RBE MS 2022.
SC6. Jash Mehta, RBE MS 2022.
SC7. Sushmita Belede, RBE MS 2022.
SC8. Soumya Balijepally, RBE MS 2021.

Master's Degrees:
SC9. Enxhi Jaupi, BME MS 2022.
SC10. Shang Gao, RBE MS 2020.
SC11. Vignesh Varier, RBE MS 2020.
SC12. Keion Bisland, RBE MS 2020.
SC13. Anna Novoseltseva, BME MS 2018.
SC14. Ankur Agrawal, RBE MS 2018.
SC15. Katie Gandomi, RBE MS 2018.
SC16. Radian Gondokaryono, RBE MS 2018.
SC17. Meagan Hiatt, RBE MS 2017.

Ph.D. Degrees:
SC18. Ryo Murakami, RBE PhD 2025 (expected).
SC19. Yichuan Tang, RBE PhD 2025 (expected).
SC20. Tess Meier, RBE PhD 2024 (expected).
SC21. Zhanyue (Jimmy) Zhao, RBE PhD 2022.
SC22. Katie Gandomi, RBE PhD 2021.
SC23. Junius Santoso, RBE PhD 2019.
SC24. Paulo Carvalho, RBE PhD 2019.
SC25. Adnan Munawar, RBE PhD 2019.
SC26. Marek Wartenberg, RBE PhD 2018.
SC27. Christopher J. Nycz, RBE PhD 2018.
SC28. Payam Razavi, ME PhD 2018.

8. Independent Studies Conducted at WPI

IS1. Adri Ramarajan. Kinematic Verification of Continuum Robots via Optical Tracking. Directed Research (9 credits), Spring-Fall 2023.

IS2. Ethan Wilke & Jasman Narang. *Open-Source Concentric Tube Robots*. Directed Research (6 credits), Fall 2022-Spring 2023.

IS3. Kalani Picho & Brandon Persons. *Multi-Jet Fusion of Nylon-12: A Viable Method to 3D print Concentric Tube Robots?* Directed Research (6 credits), Fall 2021-Spring 2022. Awarded the Glenn Yee Robotics Graduate Student Project Award.

IS4. Neet Mehta, *Learning the Kinematics of Notched-Tube Continuum Wrists*. Directed Research (3 credits), Fall 2021.

IS5. Ajay Balasubramanian, *Elastic Stability of Concentric Tube Robots*, Directed Research (1 credit), Spring 2021.

IS6. Maria Rao, Optical Spectroscopy for Tissue Identification in the Urinary System, Biomedical Engineering Professional Project, (6 credits), Summer-Fall Semesters 2020.

IS7. Mostafa Atalla, *Kinetostatic Modeling of Continuum Notched-tube Wrists*. Directed Research (9 credits), Fall 2019-Summer 2020[‡].

[‡] This project was initially supposed to be an MS thesis, but the student had to revert to Directed Research due to the inability to complete his experimental campaign following the outbreak of the COVID-19 pandemic.

IS8.   Samantha Grillo, *Laser-based Tonsillectomy: Review of the State of the Art and Future Outlook*,
       Independent Study Project, D Term 2020.
IS9.   Taylor Bergeron, *Behavior Trees for Robot Control*, Independent Study Project, B Term 2019.
IS10. Brendon Sanders & Natasha Levey, *Micro Electronic Medical Records*, Independent Study Project, A-B
       Terms 2018.
IS11. Nicholas Fajardo, *Robotic Control of a Surgical Laser Waveguide*. Directed Research (6 credits), Spring-
       Summer 2019.
IS12. Wentao Yuan, *Tracking a cannula robot*. Independent Study Project, E1 Term 2018.
IS13. Mike Sokolosvky, *Modeling of Temperature Increase in Laser-Irradiated Biological Tissue*. Directed
       Research (3 credits), Spring 2018.
IS14. Zhitao Li, *Design Optimization of a Miniature Steerable Robotic Endoscope*. Directed Research (3 credits),
       Spring 2018. Awarded third place in the Data Science Category at GRIE 2018.

9. Academic Advising at WPI

2023-2024: 51 advisees (RBE students)
2022-2023: 58 advisees (CS and RBE students)
2021-2022: 29 advisees (CS and RBE students)
2020-2021: 39 advisees (CS and RBE students)
2019-2020: 47 advisees (CS and RBE students)
2018-2019: 20 advisees (CS and RBE students)

10. Honors, Awards, and other Recognitions Related to Teaching

HT1.   Nominated for the Trustees' Award for Outstanding Academic Advising, 2023.
HT2.   Nominated for the Moruzzi Young Faculty Award for Innovation in Undergraduate Education, 2020.
HT3.   Rho Beta Epsilon Award for Excellence in Robotics Education, 2019.

11. Professional Development Related to Teaching

PD1. Project Advising Workshop, WPI, 2018.
PD2. Online Pedagogy Workshop, WPI, 2020.

SCHOLARSHIP

12. Publications

My research interests are primarily in computer/robot assisted surgery and, more generally, in the use of robotics and computer science to enhance medical diagnosis and treatment. Besides fundamental scientific research, I am also fully invested in the clinical translation of the technology developed in my laboratory. This is reflected in the fact that I disseminate my research in both engineering and medical conferences/journals.

In Robotics, the top conferences in the field only accept rigorously peer-reviewed papers. A list of the most impactful publications in robotics is available on Google Scholar[§]. As of this writing, manuscripts authored or co-authored by me have appeared on four out of the top five venues listed on the Google Scholar ranking.

Within medicine, I am active in the field of Otolaryngology, where the publishing model involves first submitting an abstract to one of the main professional society meetings. Abstracts are reviewed by a program committee, and authors of accepted abstracts are then invited to submit a full manuscript for consideration in one of the peer-reviewed journals. To date, I have co-authored manuscripts that have appeared in several high-impact journals, including Otolaryngology-Head and Neck Surgery, the Laryngoscope, and Otology & Neurotology, which are currently ranked 1st, 2nd, and 9th, on Google Scholar[**].

[§] https://scholar.google.com/citations?view_op=top_venues&hl=en&vq=eng_robotics
[**] https://scholar.google.com/citations?view_op=top_venues&hl=en&vq=med_otolaryngology

> In the following list, WPI graduate student authors are underlined in blue, while undergraduate students* names are in red followed by an asterisk.

Peer-Reviewed Journal Articles:

J1. Gao S, Wang Y, Ma Y, Zhou H, Jiang Y, Yang K, Lu L, Wang S, Nephew BC, **Fichera L**, Fischer GS, Zhang HK. *Intraoperative Laparoscopic Photoacoustic Image Guidance System in the da Vinci Surgical Robot*. Biomedical Optics Express. 2023 Sep 1;14(9):4914–28 Biomedical Optics Express.
Journal Impact Factor (IF):3.4. **CiteScore**: 6.7.

J2. Gao S, Jiang Y, Li M, Wang Y, Shen Y, Flegal MC, Nephew BC, Fischer GS, Liu Y, **Fichera L**, Zhang HK. *Laparoscopic Photoacoustic Imaging System Based on Side Illumination Diffusing Fibers*. IEEE Transactions on Biomedical Engineering. 2023 Nov 1;70(11):3187–96.
IF: 4.75. **CiteScore**: 9.5.

J3. DeVore EK, Chiluisa AJ, Minch EV*, Mihaleva R*, Do HS*, Tougas RM*, **Fichera L**, Carroll TL. Benefits of Side-Firing Optical Fibers in Endoscopic Laser Treatment of the Larynx. The Laryngoscope. 2023 May;133(5):1205-10. **Featured on the cover page of the journal**.
Note: TL Carroll and I are co-senior authors of this manuscript.
IF: 2.6. **CiteScore**: 5.7.

J4. Lee B, Pacheco NE, **Fichera L**, Russo S. When the End Effector is a Laser: A Review of Robotics in Laser Surgery. Advanced Intelligent Systems. 2022 Sep 13;4(10):2200130.
Note: S Russo and I are co-senior authors of this manuscript.
IF: 7.4. **CiteScore**: N/A.

J5. Arnold A, **Fichera L**. Identification of tissue optical properties during thermal laser-tissue interactions: An ensemble Kalman filter-based approach. International Journal for Numerical Methods in Biomedical Engineering. 2022 Apr;38(4):e3574.
IF: 2.1. **CiteScore**: 4.8.

J6. Freeman MH, Gafford JB, **Fichera L**, Noble J, Webster III RJ, Labadie RF. Transeustachian Middle Ear Endoscopy Using a Steerable Distal-Camera Tipped Endoscope. Otology & Neurotology. 2022 Feb 1;43(2):206-11.
IF: 2.1. **CiteScore**: 3.5.

J7. Pacheco NE, Gafford JB, Atalla MA, Webster III RJ, **Fichera L**. Beyond Constant Curvature: A New Mechanics Model for Unidirectional Notched-Tube Continuum Wrists. Journal of Medical Robotics Research. 2021 Mar 2;6(01n02):2140004.
IF: N/A. **CiteScore**: 2.8.

J8. Mattos LS, Acemoglu A, Geraldes A, Laborai A, Schoob A, Tamadazte B, Davies B, Wacogne B, Pieralli C, Barbalata C, Caldwell DG, **Fichera L** et al. μRALP and beyond: Micro-technologies and systems for robot-assisted endoscopic laser microsurgery. Frontiers in Robotics and AI. 2021:240.
IF: 4.9. **CiteScore**: 4.9.

J9. **Fichera L**. Bringing the light inside the body to perform better surgery. Science Robotics. 2021 Jan 13;6(50):eabf1523.
IF: 25. **CiteScore**: 33.5.

J10. Gafford J, Freeman M, **Fichera L**, Noble J, Labadie R, Webster RJ. Eyes in ears: a miniature steerable digital endoscope for trans-nasal diagnosis of middle ear disease. Annals of biomedical engineering. 2021 Jan;49(1):219-32.
IF: 3.8. **CiteScore**: 2.8.

J11. Kesler K, Dillon NP, **Fichera L**, Labadie RF. Human kinematics of cochlear implant surgery: an investigation of insertion micro-motions and speed limitations. Otolaryngology–Head and Neck Surgery. 2017

Sep;157(3):493-8.
IF: 3.4. **CiteScore**: 7.2.

J12. Siebold MA, Dillon NP, **Fichera L**, Labadie RF, Webster III RJ, Fitzpatrick JM. Safety margins in robotic bone milling: from registration uncertainty to statistically safe surgeries. The International Journal of Medical Robotics and Computer Assisted Surgery. 2017 Sep;13(3):e1773.
IF: 2.5. **CiteScore**: 4.5.

J13. Dillon NP, **Fichera L**, Kesler K, Zuniga MG, Mitchell JE, Webster RJ, Labadie RF. Pre-operative screening and manual drilling strategies to reduce the risk of thermal injury during minimally invasive cochlear implantation surgery. Annals of biomedical engineering. 2017 Sep;45(9):2184-95.
IF: 4.9. **CiteScore**: 2.8.

J14. Illiano P, Bass CE, **Fichera L**, Mus L, Budygin EA, Sotnikova TD, Leo D, Espinoza S, Gainetdinov RR. Recombinant adeno-associated virus-mediated rescue of function in a mouse model of dopamine transporter deficiency syndrome. Scientific reports. 2017 Apr 18;7(1):1-5.
IF: 4.6. **CiteScore**: 7.5.

J15. **Fichera L**, Messina F, Pappalardo G, Santoro C. A Python framework for programming autonomous robots using a declarative approach. Science of Computer Programming. 2017 Jun 1;139:36-55.
IF: 1.3. **CiteScore**: 3.5.

J16. Acemoglu A, **Fichera L**, Kepiro IE, Caldwell DG, Mattos LS. Laser incision depth control in robot-assisted soft tissue microsurgery. Journal of Medical Robotics Research. 2017 Sep 28;2(03):1740006.
IF: N/A. **CiteScore**: 2.8.

J17. **Fichera L**, Dillon NP, Zhang D, Godage IS, Siebold MA, Hartley BI, Noble JH, Russell PT, Labadie RF, Webster RJ. Through the eustachian tube and beyond: A new miniature robotic endoscope to see into the middle ear. IEEE Robotics and Automation Letters. 2017 Feb 14;2(3):1488-94.
IF: 5.2. **CiteScore**: 7.6.

J18. **Fichera L**, Pardo D, Illiano P, Ortiz J, Caldwell DG, Mattos LS. Online estimation of laser incision depth for transoral microsurgery: approach and preliminary evaluation. The International Journal of Medical Robotics and Computer Assisted Surgery. 2016 Mar;12(1):53-61.
IF: 2.5. **CiteScore**: 4.5.

J19. Pardo D, **Fichera L**, Caldwell D, Mattos LS. Learning Temperature Dynamics on Agar-Based Phantom Tissue Surface During Single Point CO_2 Laser Exposure. Neural Processing Letters. 2015 Aug;42(1):55-70.
IF: 3.1. **CiteScore**: 5.4.

Peer-Reviewed Conference Proceedings:
C1. Kendre SV, Wang L, Wilke E, Pacheco NE, **Fichera L**, Nemitz M. FDM Printing: a Fabrication Method for Fluidic Soft Circuits? Proceedings of the IEEE International Conference on Soft Robotics (Robosoft) 2024. [in press] **Winner of the best paper award in the "Excellence in Manufacturing Reproducibility" category.**

C2. Pacheco N, Gao S, Cleary K, Shah RK, Zhang H, **Fichera L**. Photoacoustic Image Guidance for Laser Tonsil Ablation: Approach and Initial Results. Proceedings of SPIE Medical Imaging 2024. [in press]

C3. Pacheco N, Garje YA, Rohra A, **Fichera L**. Losing Focus: Can it be Useful in Robotic Laser Surgery? Proceedings of the Hamlyn Symposium 2023.

C4. Gao S, Wang Y, Zhou H, Yang K, Jiang Y, Lu L, Wang S, Ma X, Nephew B, **Fichera L**, Fischer GS, Zhang HK. Laparoscopic Photoacoustic Imaging System Integrated with the da Vinci Surgical System. In Medical Imaging 2023: Image-Guided Procedures, Robotic Interventions, and Modeling 2023 (Vol. 12466, p. 1246609). International Society for Optics and Photonics. **Winner of the best student paper award.**

C5. Chiluisa AJ, Pacheco NE, Do HS*, Tougas RM*, Minch EV*, Mihaleva R*, Shen Y, Liu Y, Carroll TL, **Fichera L**. Light in the Larynx: A Miniaturized Robotic Optical Fiber for In-Office Laser Surgery of the Vocal Folds. In 2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS). IEEE, 2022. p. 427-434.

C6. Picho K, Persons B*, d'Almeida JF, Pacheco NE, Reynolds C*, **Fichera L**. Multi Jet Fusion of Nylon-12: A Viable Method to 3D-print Concentric Tube Robots? Hamlyn Symposium 2022.

C7. Zhu M*, Shen Y, Chiluisa AJ, Song J*, **Fichera L**, Liu Y. Optical Fiber Coupling System for Steerable Endoscopic Instruments. In 2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC) 2021 Nov 1 (pp. 4871-4874). IEEE.

C8. Chan IA*, d'Almeida JF*, Chiluisa AJ, Carroll TL, Liu Y, **Fichera L**. On the merits of using angled fiber tips in office-based laser surgery of the vocal folds. In Medical Imaging 2021: Image-Guided Procedures, Robotic Interventions, and Modeling 2021 Feb 15 (Vol. 11598, p. 115981Z). International Society for Optics and Photonics. **Winner of the best student paper award.**

C9. Gao S, Ma Z, Tsumura R, Kaminski J, **Fichera L**, Zhang HK. Augmented immersive telemedicine through camera view manipulation controlled by head motions. In Medical Imaging 2021: Image-Guided Procedures, Robotic Interventions, and Modeling 2021 Feb 15 (Vol. 11598, p. 1159815). International Society for Optics and Photonics.

C10. Munawar A, Srishankar N, **Fichera L**, Fischer GS. A Parametric Grasping Methodology for Multi-Manual Interactions in Real-Time Dynamic Simulations. In 2020 IEEE International Conference on Robotics and Automation (ICRA) 2020 May 31 (pp. 8712-8718). IEEE.

C11. Chiluisa AJ, Van Rossum FJ*, Gafford JB, Labadie RF, Webster RJ, **Fichera L**. Computational optimization of notch spacing for a transnasal ear endoscopy continuum robot. In 2020 International Symposium on Medical Robotics (ISMR) 2020 Nov 18 (pp. 188-194). IEEE.

C12. O'Brien K*, Boyer ZR*, Mart BG*, Brolliar CT*, Carroll TL, **Fichera L**. Towards flexible steerable instruments for office-based laryngeal surgery. In Frontiers in Biomedical Devices 2019 Apr 15 (Vol. 41037, p. V001T06A017). American Society of Mechanical Engineers. **Nominated as one of the 10 top papers that describe new medical devices (out of 150+ paper submissions). Finalist for the three-in-five pitch competition.**

C13. Vu M, Banalagay RA, Zhang D, Rivas A, **Fichera L**, Webster R, Labadie RF, Noble JH. Analysis of middle ear morphology for design of a transnasal endoscope. In Medical Imaging 2019: Image-Guided Procedures, Robotic Interventions, and Modeling 2019 Mar 8 (Vol. 10951, pp. 723-728). SPIE.

C14. Lin S, **Fichera L**, Fulton MJ, Webster III RJ. Don't get burned: thermal monitoring of vessel sealing using a miniature infrared camera. In Medical Imaging 2017: Image-Guided Procedures, Robotic Interventions, and Modeling 2017 Mar 3 (Vol. 10135, pp. 263-269). SPIE.

C15. Dillon NP, **Fichera L**, Wellborn PS, Labadie RF, Webster RJ. Making robots mill bone more like human surgeons: Using bone density and anatomic information to mill safely and efficiently. In 2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2016 Oct 9 (pp. 1837-1843). IEEE.

C16. **Fichera L**, Dillon NP, Kesler K, Zuniga Manrique M., Mitchell JE, Labadie RF, Thermal monitoring of the facial recess during drilling for minimally invasive cochlear implantation: comparison of manual and automated approaches, in Proceedings of the 30th International Congress and Exhibition on Computer Assisted Radiology and Surgery (CARS), Heidelberg, Germany, 2016. **Recipient of the ISCAS Young Investigator Scholarship.**

C17. **Fichera L**, Pacchierotti C, Olivieri E, Prattichizzo D, Mattos LS. Kinesthetic and vibrotactile haptic feedback improves the performance of laser microsurgery. In 2016 IEEE haptics symposium (HAPTICS) 2016 Apr 8 (pp. 59-64). IEEE.

C18. **Fichera L**, Kepiro IE, Caldwell DG, Mattos LS, Towards Automatic Laser Incision of Soft Tissue for Transoral Microsurgery. In 5th Joint Workshop on New Technologies for Computer/Robot Assisted Surgery (CRAS), Brussels, Belgium, 2015.

C19. **Fichera L**, Pardo D, Illiano P, Caldwell DG, Mattos LS. Feed forward incision control for laser microsurgery of soft tissue. In 2015 IEEE International Conference on Robotics and Automation (ICRA) 2015 May 26 (pp. 1235-1240). IEEE. **Best Paper Finalist. Best Student Paper Finalist. Best Medical Robotics Paper Finalist.**

C20. **Fichera L**, Pardo D, Illiano P, Caldwell DG, Mattos LS, New Assistive Technologies for Laser Microsurgery. In 4th Joint Workshop on New Technologies for Computer/Robot Assisted Surgery (CRAS), Genova, Italy, 2014.

C21. Pardo D, **Fichera L**, Caldwell DG, Mattos LS. Thermal supervision during robotic laser microsurgery. In 5th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics 2014 Aug 12 (pp. 363-368). IEEE.

C22. **Fichera L**, Pardo D, Mattos LS. Artificial Cognitive Supervision during Robot-Assisted Laser Surgery. In 3rd Joint Workshop on New Technologies for Computer/Robot Assisted Surgery (CRAS), Verona, Italy, 2013.

C23. **Fichera L**, Pardo D, Mattos LS, Supervisory System for Laser-Assisted Phonomicrosurgery. In Engineering in Medicine and Biology Society (EMBC), 2013 Annual International Conference of the IEEE, Osaka, Japan, 2013.

C24. **Fichera L**, Pardo D, Mattos LS. Modeling tissue temperature dynamics during laser exposure. In International Work-Conference on Artificial Neural Networks 2013 Jun 12 (pp. 96-106). Springer, Berlin, Heidelberg.

C25. **Fichera L**, Marletta D, Nicosia V, Santoro C. Flexible robot strategy design using belief-desire-intention model. In International Conference on Research and Education in Robotics 2010 May 27 (pp. 57-71). Springer, Berlin, Heidelberg.

Non-refereed Abstract/Workshop Papers and Presentations:

W1. Chiluisa AJ, Pacheco NE, Do HS*, Tougas RM*, Minch EV*, Mihaleva R*, Shen Y, Liu Y, Carroll TL, **Fichera L**. Light in the Larynx: A Miniaturized Robotic Optical Fiber for In-Office Laser Surgery of the Vocal Folds, in Workshop on Frontiers of Endoluminal Interventions, 39th IEEE International Conference on Robotics and Automation, Philadelphia, PA, USA, 2022.

W2. DeVore EK, Chiluisa AJ, Minch EV*, Mihaleva R*, Do HS*, Tougas RM*, **Fichera L**, Carroll TL, Benefits of Side-firing Optical Fibers in Endoscopic Laser Treatment of the Larynx, Combined Otolaryngology Spring Meetings 2022, Dallas, TX, April 2022.

W3. Arnold A, **Fichera L**, Identification of Tissue Optical Properties During Thermal Laser-Tissue Interactions, Joint Mathematical Meetings 2022, Seattle, WA, January 2022.

W4. Chiluisa AJ, Shen Y, Liu ST*, Abell P*, Johnson SQ*, Zhu M*, Liu Y, **Fichera L**, Carroll TL, Amplifying a Physician's Reach into the Larynx: Initial Prototype and Testing of a Novel Steerable Laser Fiber for In-Office Laryngology Procedures, in Fall Voice Conference, 2021.

W5. Chan IA*, d'Almeida JF*, Zhu M*, Chiluisa AJ, Shen Y, Liu Y, Carroll TL, **Fichera L**, Introducing Steerable Laser Fibers in Office-Based Laryngology Procedures, in Fall Voice Conference, 2020.

W6. Freeman MH, Gafford JB, **Fichera L**, Labadie RF, Webster RJ, A Steerable Trans-Eustachian Endoscope for Middle Ear Examination, in Combined Otolaryngology Spring Meetings, Atlanta, GA, 2020.

W7. Zuniga MG, Kesler K, Dillon NP, **Fichera L**, Mitchell JE, Labadie RF, Heat generated during temporal bone drilling: is the facial nerve at risk? in Combined Otolaryngology Spring Meetings, San Diego, CA, 2017.

W8. Kesler K. Dillon NP, **Fichera L**, Labadie RF, Human Kinematics of Cochlear Implant Insertion at Various Speeds, in American Academy of Otolaryngology–Head and Neck Surgery, Annual Meeting & OTO EXPOSM, San Diego, CA, 2016.

W9. **Fichera L**, Pardo D, Mattos LS, Thermal Supervision during Robotic Laser Microsurgery, in Workshop on Robotic Microsurgery and Image-Guided Surgical Interventions, 5th IEEE RAS & EMBS International Conference on Biomedical Robotics and Biomechatronics, Sao Paulo, Brazil, 2014.

W10. **Fichera L**, Pardo D, Deshpande N, Mattos LS, On-line Estimation of Ablation Depth During CO_2 Laser Exposure, in Workshop on Cognitive Surgical Robotics, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2013). Tokyo, Japan, 2013.

W11. **Fichera L**, Pardo D, Mattos LS, Virtual Supervision for a Virtual Scalpel, in uRALP Workshop, 1st Russian-German Conference on Biomedical Engineering (RCG), Hanover, Germany, 2013.

W12. **Fichera L**, Mattos LS, Towards Cognitive Supervision in Robot-Assisted Surgery, in Workshop on Robot-Assisted Laryngeal Microsurgery, 4th IEEE International Conference on Biomedical Robotics and Biomechatronics (Biorob), Rome, Italy, 2012.

W13. **Fichera L**, Marletta D, Santoro C, Nicosia V, A Methodology to Extend Imperative Languages with AgentSpeak Declarative Constructs, in 11th National Workshop "From Objects to Agents" (WOA), Rimini, Italy, 2010.

Books
B1. **L. Fichera**, Cognitive Supervision for Robot-Assisted Minimally Invasive Laser Surgery. Springer, Apr. 2016, PhD Thesis, ISBN: 978-3-319-30329-1.

Book Chapters
BC1. Nguyen Y, Gerber N, Caversaccio M, Weber S, Kahrs LA, Majdani O, Dillon NP, **Fichera L**, Labadie RF, Robot-based otological surgery, in *Robotics and Digital Guidance in ENT-H&N Surgery*, B. Lombard and P. Ceruse, Eds. Elsevier, 2017.

BC2. Mattos LS, Pardo D, Olivieri E. Barresi G, Ortiz J, **Fichera L**, Deshpande N, Penza V, Microsurgery Systems, in *The E-Medicine, E-Health, M-Health, Telemedicine, and Telehealth Handbook*, H. Eren and J. Webster, Eds. CRC Press, 2015.

13. Fellowships and Grants
G1. **Principal Investigator:** WPI Seed Grant "Laser Tonsil Ablation: A New Incision-less Procedure for Tonsil Removal," L. Fichera, A. Arnold, H. Zhang. For $70,000 over 1.5 years (2/1/2024 – 5/30/2025)

G2. **Principal Investigator:** NSF "CAREER: Next-Generation Surgical Robots for Energy-based Surgery," L. Fichera (PI). For $615,663 over five years (7/1/2023 – 6/30/2028)

G3. **Principal Investigator:** NIH R15 "Flexible Steerable Laser Probe for Office-based Laryngeal Interventions," L. Fichera (PI), Y. Liu, T.L. Carroll. For $438,939 over four years (5/1/2020 – 4/30/2024)

G4. **Co-Investigator:** WPI TRIAD Seed Grant "Spectroscopic Photoacoustic Imaging for Robot-Assisted Laparoscopic Nerve-Sparing Pelvic Surgery," H. Zhang (PI), L. Fichera, G.S. Fischer, B. Nephew (co-Is). For $60,000 over two years (1/1/2020 – 12/31/2021).

G5. **Co-Investigator:** "Transnasal Diagnosis of Middle Ear Disease," R.J. Webster III (PI), Jack H. Noble, Paul T. Russell III, R.F. Labadie, L. Fichera. For $446,413 over two years (9/1/2017 – 8/31/2019). Note: I led the development of this proposal during my postdoc at Vanderbilt and wrote many sections of it personally. WPI subaward: $43,266.

G6. **Principal Investigator:** WPI Engineering Seed Grant "Make the laser feel more like a scalpel: combining haptics and digital holography to enhance the perception of laser cutting depth during surgery," L. Fichera (PI), Cosme Furlong. $10,000

G7. **Principal Investigator:** WPI Engineering Seed Grant "Intraoperative detection of cancerous tissue for laser-based microsurgery using tissue-specific dynamic thermal response signature," L. Fichera (PI), Andrea Arnold. $10,000

G8. **PhD Fellowship:** For €49,500 over three years (01/2012 – 12/2014). I was the recipient of an Italian Institute of Technology (IIT) fellowship providing financial support during my doctoral studies. My application ranked 1st out of 30+ (the call was advertised through the "Robotics Worldwide" mailing list and was open to international students).

G9. **Erasmus Placement Mobility Grant:** For €2,600 over four months (04/2010 – 07/2010) This European Commission Grant supported my research internship at the University of Hertfordshire (UK).

14. Professional Presentations

PP1. Brigham and Women's Hospital, *Next-Generation Surgical Robots for Energy-based Surgery*. June 2024.

PP2. International Symposium on Medical Robotics, *From Blood and Guts to Bits and Bytes: Automating Laser Surgery.* Invited workshop talk. June 2024.

PP3. Boston University, *Robots, lasers, and the quest for incisionless surgery*. Invited talk. March 2024.

PP4. SPIE Photonics West, *Robots, lasers, and the quest for incisionless surgery*. Invited talk. January 2024.

PP5. Boston Medical Center, *Next-Generation Surgical Robots for Energy-based Surgery.* September 2023.

PP6. University of Rhode Island, *When the End Effector is a Laser: Next-Generation Surgical Robots for Energy-Based Surgery*. September 2023.

PP7. International Symposium on Medical Robotics, *Beyond the Operating Room: Surgical Robots in Clinic.* Invited workshop talk. April 2023.

PP8. International Symposium on Medical Robotics, *Lasers + Surgical Robots: Is the Whole Greater than the Sum of Its Parts?* Invited workshop talk. April 2022.

PP9. Combining robotics and AI to enable advanced treatment modalities in the head and neck - Invited talk at VistaMar High School (via Zoom). October 2021.

PP10. IROS Workshop, *On the role of autonomy in robot-assisted laser surgery*. October 2020.

PP11. University of Tulsa, *Combining robotics and AI to enable advanced treatment modalities in the head and neck*. October 2020.

PP12. WPI Department of Mechanical Engineering, *Combining robotics and AI to enable advanced treatment modalities in the head and neck*. October 2020.

PP13. Boston Medical Center, *Combining robotics and AI to enable advanced treatment modalities in the head and neck*. February 2020.

PP14. Olympus Corporation, *Combining robotics and AI to enable advanced treatment modalities in the head and neck*. January 2020.

PP15. IEEE Robotics and Automation Society Boston Chapter, *Combining robotics and machine intelligence to enable advanced treatment modalities in the head and neck*. December 2019.

PP16. World Congress on Endoscopic Ear Surgery 3.0*, Towards a new ultra-thin steerable scope to look into the ear by way of the nose*. June 2019. (https://www.youtube.com/watch?v=ABc1U5z-MBQ)

PP17. World Congress on Endoscopic Ear Surgery 3.0*, New instrumentation for ear surgery:Smaller and smarter*. June 2019. (https://www.youtube.com/watch?v=VV4Lf3nXrcc)

PP18. Massachusetts Ear and Eye Infirmary, *Combining robotics and AI to enable advanced treatment modalities in the head and neck*. May 2019.

PP19. Mathematics Institute for Secondary Teaching, WPI, *Robotic manipulators in interventional medicine and surgery.* July 2018.

PP20. University of Catania, Italy, *Rise of the machines in the Operating Room: Using AI to build smarter, more dexterous surgical robots*. April 2018.

PP21. University of New Hampshire, *Rise of the machines in the Operating Room: Using AI to build smarter, more dexterous surgical robots*. March 2018.

15. Patents

PA1. **Fichera L**, O'Brien K*, Boyer ZR*, Brolliar CT*, Mart BG*, Fischer GS, Stafford K, Carroll TL. *Flexible Articulating Surgical Probe,* USPTO patent no. 16/817,280, issued 2023. **This patent is the product of an MQP project advised by me in 2019.**

PA2. Arnold A, **Fichera L**, *Estimating Optical Properties of Surgical Tissue*, USPTO patent application no. 17/711,100. Submitted 2022.

PA3. Wilke E, Pacheco NE, **Fichera L**. *Hollow Extrusion Nozzle*, USPTO patent application no. 18/380,500. Submitted 2023.

16. Professional Society Memberships and Offices

PS1.   International Society for Optical Engineering (SPIE)
PS2.   International Institute of Electrical and Electronics Engineering (IEEE)

17. Editorial and Referee Activities

2020-present: Associate Editor, IEEE Robotics and Automation Letters
2024:   Associate Editor, IEEE International Conference on Biomedical Robotics and Biomechatronics
2022:   Associate Editor, IEEE International Conference on Biomedical Robotics and Biomechatronics
2021:   Early Career Reviewer for the BTSS Study Section of the NIH
2020:   Proposal Review Panelist for the National Science Foundation (NSF)
2019:   Associate Editor, IEEE International Conference on Robotics and Automation
2018:   Proposal Review Panelist for the Department of Defense (DoD) – CDMRP and the NSF
                Associate Editor for Workshops, IEEE International Conference on Biomedical Robotics and Biomechatronics
2017:   Proposal Review Panelist for the National Science Foundation (NSF)

Technical Reviews

I have reviewed many papers for the following Journals and Conferences:
    IEEE Transactions on Robotics (T-RO)
    IEEE Transactions on Medical Robotics and Bionics (T-MRB)
    International Journal of Robotics Research (IJRR)
    IEEE Robotics and Automation Letters (RA-L)
    Journal of Medical Robotics Research (JMRR)
    ASME Journal of Mechanisms and Robotics (ASME JMR)
    Applied Physics Part B: Lasers and Optics
    IEEE International Conference on Robotics and Automation (ICRA)
    IEEE International Conference on Multisensor Fusion and Information Integration (MFI)
    IEEE Engineering in Medicine and Biology (EMBC)
    IEEE International Conference on Biomedical Robotics and Biomechatronics (BIOROB)
    Robotics: Science and Systems (RSS)

18. Honors, Awards, and Other Scholarship Recognition

HT1. Best Paper Award in the "Excellence in Manufacturing Reproducibility" category, IEEE International Conference on Soft Robotics 2024

HT2. Best All-Conference Student Paper Award at SPIE Medical Imaging 2023
(awarded to WPI graduate student S. Gao, I'm a co-author on this paper)

HT3. Best Student Paper Award in the Robotics Track at SPIE Medical Imaging 2021
(awarded to WPI undergraduate students IA Chan and J d'Almeida, advised by me)

HT4. Top ten papers that describe new medical devices, Design of Medical Devices Conference 2019

HT5. Best Engineering Poster Award, Vanderbilt Postdoctoral Symposium 2017

HT6. Koh Young Investigator Scholarship, International Society for Computer Assisted Surgery

HT7. Best Paper Finalist, Best Student Paper Finalist, Best Medical Robotics Paper Finalist, ICRA 2015

HT8. Outstanding PhD Thesis, University of Genoa, Italy
(My dissertation *Cognitive Supervision for Robot-Assisted Minimally Invasive Laser Surgery* was nominated as an outstanding PhD thesis by the faculty of Italian Institute of Technology / University of Genoa, and published in the Springer PhD Theses series)

SERVICE

19. Service to the Profession

Note: For editorial service, see section 17 on the previous page.

SC1. Workshop Organizer: Atalla M, Sakes A, Wu D, **Fichera L**. *Bio-Inspired Medical Robotics: From Evolution to Revolution in Healthcare*. Workshop at the Hamlyn Symposium on Medical Robotics 2024.

SC2. Workshop Organizer: Atashzar F, Alambeigi F, Wu JY, **Fichera L**. *The Holistic Forum of Medical Robotics Junior Professors*. Workshop at the International Symposium on Medical Robotics 2024.

SC3. Workshop Organizer: Kazanzides P, Munawar P, Chua Z, Wu JY, Fichera L. Machine Learning with the da Vinci Research Kit. Workshop at the International Symposium on Medical Robotics 2024.

SC4. Workshop Organizer: Atashzar F, Alambeigi F, Wu JY, Webster RJ, **Fichera L**. *The Holistic Forum of Medical Robotics Junior Professors*. Workshop at the International Symposium on Medical Robotics 2023.

SC5. Workshop Organizer: Guo J, Wu D, **Fichera L**, Zeng C, Li Z, Alambeigi F. *A Panacea or an Alchemy? Benefits and Risks of Robot Learning in Medical Applications*. Workshop at IEEE IROS 2022.

SC6. Session Chair, International Symposium on Medical Robotics 2022.

SC7. Session Chair, SPIE Medical Imaging 2017.

20. Service to the University and Department

Note: For membership on theses and dissertation committees, see page 5.

Membership on Faculty Governance Committees at WPI:
2020-2023: Committee on Graduate Studies and Research (CGSR)
2020:   On-Campus Research Continuation Appeal (ORCA) Committee
2019-2020: Office of Undergraduate Research Advisory Board

Membership on RBE Department Committees:
2019-present: RBE Colloquium Committee (Chair)
2022-2023: Recruiting Committee
2021-2022: Graduate Program Committee
2020-2021: Graduate Admissions Committee
2019-2020: Recruiting Committee
2019-2020: Curriculum Committee

2018-2019: Undergraduate Program Committee

21. Service to Students at WPI

I mentored the following students in their job/graduate school applications:

Note: The first position upon graduation is listed within parentheses.

1. M. Mitchell (PhD student at the University of Pennsylvania, NSF GRFP Fellow)
2. Y. Garje (PhD student at Purdue University)
3. E. Wilke (PhD student at Vanderbilt University, NSF GRFP Fellow)
4. R.M. Tougas (MS student at Georgia Tech)
5. K. Picho (Research engineer at Intuitive Surgical)
6. N. Pacheco (PhD student in my laboratory, NSF GRFP Fellow)
7. J. d'Almeida (PhD student at Vanderbilt University, GRFP Fellow)
8. M. Atalla (PhD student at TU Delft)
9. N. Fajardo (PhD student at the University of Arkansas)
10. S. Murlidaran (PhD student at USC)
11. N. Dennler (PhD student at USC)

I wrote letters of recommendation for the following two students to support their applications to Tau Beta Pi:

1. S.T. Liu
2. I.A. Chan

In the summer of 2023, I organized Robotics Research in Progress (RRIP), a series of seminars running from May to August where PhD students from the Robotics department presented their research. I served as the moderator for most of the seminars and successfully sought funding for refreshments.

22. Community Service

Music Ministry, St. Ignatius Catholic Church, Chestnut Hill, MA
Voice Actor, GBH (Public Radio), Brighton, MA