**AHMET CAN SABUNCU**

Curriculum Vitae

**+1 757 609 5723 csabuncu@gmail.com**

**Address 429 Captain Eames Cir, Ashland, MA 01721**

**Nationality Turkey (Permanent Resident of USA)**

**EDUCATION**

**PhD** OLD DOMINION UNIVERSITY, *Virginia, USA*

December 2011 Batten College of Engineering and Technology

 Aerospace Engineering, GPA: 3.75/4.00

 Dissertation: “A Microfluidic Device for Impedance Spectroscopy”

 Advisor: Prof. Ali Beskok

**MSc** İSTANBUL TECHNICAL UNIVERSITY, *Istanbul, TURKEY*

June 2007College of Aeronautics and Astronautics

 Aerospace Engineering, GPA: 3.5/4.00

 Thesis: “Automobile Aeroacoustics”

 Advisor: Prof. A. Rustem Aslan

**BSc** YILDIZ TECHNICAL UNIVERSITY, *Istanbul, TURKEY*

June 2005 College of Mechanical Engineering

 Mechanical Engineering, GPA: 3.24/4.00

**CURRENT POSITIONS AND HONORS**

**Assistant Teaching Professor**

Worcester Polytechnic Institute, Worcester, USA, August 2017 – present

**Fellow**

Hunt Institute for Engineering and Humanity, Dallas, TX, USA, October 2017 – present

**KEEN Engineering Entrepreneurship Leader**

Worcester Polytechnic Institute, Worcester, USA, October 2018 – present

**ACADEMIC EXPERIENCE**

**Visiting Research Scientist**

Northeastern University, Boston, MA, USA, May 2018 – December 2019

**Clinical Assistant Professor**

Southern Methodist University, Mechanical Engineering Department, Dallas TX, USA, August 2015 – August 2017

**Adjunct Faculty Associate**

The University of Texas Southwestern Medical Center, Dallas TX, USA, October 2014 – October 2017

**Assistant Research Professor**

Southern Methodist University, Mechanical Engineering Department, Dallas TX, USA, August 2014 – August 2015

**Lecturer**

Istanbul Technical University, Mechanical Eng. Dept., Istanbul, TURKEY, September 2012 – September 2014

**Post-Doctoral Research Assistant**

Old Dominion University, Micro & Nanotechnology Institute, USA, December 2011 – August 2012

**PROFESSIONAL INTERESTS**

*Research Interest:* Cell and Tissue Diagnostics with Dielectric Spectroscopy, Biological Cell Separation with AC Electrokinetic Techniques, Microfluidics for Sample Concentration and Biomarker Sensing, Cell-Nanoparticle Interaction, Diatom Motility.

*Experimental and Numerical Techniques:* Microfabrication with Photolithography, Dielectric Spectroscopy of Cell Suspensions and Tissues, Micro Particle Image Velocimetry and Particle Tracking, Data Acquisition using MATLAB, Engineering Design using AUTOCAD and SOLIDWORKS, Cell Culture, Optical and Epifluorescence Microscopy.

I have established a biosafety level 1 laboratory with cell culture and microfabrication capabilities in Southern Methodist University Mechanical Engineering Department.

**POST-DOCTORAL AWARDS & SCHOLARSHIPS**

Recognition Award as a part of Kalenian Award Competition ($2,500) to develop the prototype for a new Train of Four technique to quantitatively assess activity of intramuscular blockers in anesthesia. (Awarded to Ahmet Can Sabuncu and Anastasia Karapangou)

Sam Taylor Fellowship, Awarded December 2016 for “Bioimpedeance measurements for early diagnosis of colorectal cancer” ($2,000)

**RESEARCH PROJECTS AND OTHER SCHOLARLY ACTIVITIES**

**“Detection of Bioelectrical Changes as a Function of Neoplastic Progression”, TRIADs: Interdisciplinary Seed Grant Pilot, awarded February 2020 with $60,000. Principal Investigator: Ahmet C Sabuncu, Collaborators: Izabela R Stroe, Cagdas D Onal, Maqsood Ali Mughal**

**“Hollow Fiber Nozzle Design”, GE Healthcare sponsored project, awarded August 2020 with $19,000. Principal Investigators: Ahmet C Sabuncu and George Pins.**

Small Group Grant ($1,500) from Kern Family Foundation to advance learning with entrepreneurial mindset on WPI campus. Formed a book club that drew faculty from multiple engineering departments. We all reflected on a book that discusses social and economic impact of major inventions and discussed how our understanding can enhance the courses we teach.

Lyle School of Engineering Research Seed Funding, Awarded February 2017 with $13,900 for “A Low-cost Biosensor for Cancer Biomarker Detection from Urine”, Ahmet Can Sabuncu (MPI), Andrew Quicksall (MPI)

**GRAUDATE STUDENTS**

Shahriar Shams, MSc student, Thesis topic: “Cancer Diagnosis by Bioimpedance Spectroscopy and Computer-Assisted Pattern Recognition”, Southern Methodist University, Mechanical Engineering Department, Graduated Summer 2017

**COURSES INSTRUCTED**

*Courses Instructed at Worcester Polytechnic Institute*

*2018/19:*

Kinematics of Mechanisms (ME 3310)

Engineering Experimentation (ME 3901)

Thermodynamics (ES 3001)

*2017/18:*

Kinematics of Mechanisms (ME 3310)

Engineering Experimentation (ME 3901)

Thermodynamic Application and Design (ME4429)

*Courses Instructed at Southern Methodist University*

2016/17:

Thermodynamics (ME 2331)

Elements of Mechanical Engineering Measurements (ME 2350),

Engineering Analysis with Numerical Methods (ME 5362).

Heat Transfer in Biomedical Sciences (ME 5332/7332),

2015/16:

Thermodynamics (ME 2331),

Introduction to Engineering Design (KNW 2300),

Special Topics: Microfluidics and Microfabrication (ME 7392).

*Courses Instructed at Istanbul Technical University*

2012/13:

Engineering Mechanics (MEK 205),

Statics (STA 201E)\*,

Engineering Biology (BIO 102E) \*,

Measurement Systems (MAK 312E) \*.

Machine Shop Practice (MAK 200E)\*,

2013/14:

Thermodynamics (MAK 212E) \*,

Differential Equations (MAT 201E) \*,

Engineering Biology (BIO 102E) \*.

\*Instructed in English

**PUBLICATIONS**

**Peer-reviewed Journal Articles (Corresponding authorship are shown by \*)**

1. **Sabuncu A.C.**, Kalluri B.S., Qian S., Stacey M.W., Beskok A., “Dispersion state and toxicity of mwCNTs in cell culture medium with different T80 concentrations” *Colloids and Surfaces B:Biointerfaces*, 78(1): pp 36-43, 2010.

2. **Sabuncu A.C.** a, Liu J.A. a, Beebe S.J., and Beskok A., “Dielectrophoretic separation of mouse melanoma clones” *Biomicrofluidics*, 4: pp 021101 1-7, 2010. (Also featured in the July 1, 2010 issue of Virtual Journal of Biological Physics Research)

a these authors contributed equally to this work

3. Koklu M. a, **Sabuncu A.C.** a, and Beskok A., “Acoustophoresis in shallow microchannels”, *Journal of Colloid and Interface Science*, 351(2): pp 407:414, 2010.

a these authors contributed equally to this work

4. **Sabuncu A.C.**, Grubbs J., Qian S., Abdel-Fattah T. M., Stacey M.W., Beskok, A., “Probing nanoparticle interactions in culture media” *Colloids and Surfaces B:Biointerfaces*, 95: pp 96-102, 2012

5. **Sabuncu A.C.**, Zhuang, J., Kolb, J.F., and Beskok, A., “Microfluidic Impedance Spectroscopy as a Tool for Quantitative Biology and Biotechnology” *Biomicrofluidics,* 6: pp034103 1- 15, 2012

6. Basu G., Kalluri B. S., **Sabuncu A. C.**, Osgood C. J., and Stacey M.W., “Enhanced Killing Effect of Nanosecond Pulse Electric Fields on PANC1 and Jurkat Cell Lines in the Presence of Tween 80” *Journal of Membrane Biology*, 245 : pp 611-616, 2012

7. **Sabuncu A.C.** and Beskok, A., “A Separability Parameter for Dielectrophoretic Cell Separation” *Electrophoresis,* 34 : pp 1051-1058, 2013

8. Stacey M.W., **Sabuncu A.C.,** and Beskok, A., “Dielectric Characterization of Human Costal Chondrocytes” *Biochimica et Biophysica Acta – General Subjects*, 1840 : pp 146-152, 2014

9. **Sabuncu A.C.,** Asmar A.J.,Stacey M.W., and Beskok, A., “Differential Dielectric Responses of Chondrocyte and Jurkat Cells in Electromanipulation Buffers” *Electrophoresis*, 36 : pp 1499-1506, 2015

10. Koklu, A., Tansel O., Oksuzoglu H., **Sabuncu, A.C. \***, “Electrothermal Flow on Electrode Arrays at Physiological Conductivities” *IET Nanobiotechnology, 10:* pp 54 -61*,* 2015*.*

11. Fernandez, R. E., Lebiga, E., Koklu, A., **Sabuncu, A. C.**, Beskok, “A Flexible Bioimpedance Sensor for Label-free detection of Cell Viability and Biomass” *IEEE Transactions on Nanobioscience,* 14: pp 700-706, 2015.

12. Koklu, A., **Sabuncu, A. C. \***, Beskok, A., “Rough Gold Electrodes for Decreasing Impedance at the Electrolyte/Electrode Interface” *Electrochimica Acta,* 205*:* pp 215-225*,* 2016.

13. Koklu, A., **Sabuncu, A. C.**, Beskok, A., “Enhancement of Dielectrophoresis Using Fractal Gold Nanostructured Electrodes” *Electrophoresis,* 38: pp 1458-1465, 2017.

14. Mansoorifar, A., Koklu, A., **Sabuncu, A. C.**, Beskok, A., “Dielectrophoresis Assisted Loading and Unloading of Micro-Wells for Impedance Spectroscopy” *Electrophoresis,* 38 : pp 1466-1474,2017*.*

15. Mansoorifar, A., Ghosh, A., **Sabuncu, A. C. \***, Beskok, A., “'Accuracy of the Maxwell-Wagner and the Bruggeman-Hanai Mixture Models for Single Cell Dielectric Spectroscopy” *IET Nanobiotechnology,* 11: pp 874-882, 2017*.*

16. **Sabuncu, A. C. \***, Zaklit, J., Craviso, G. L., Chatterjee, I., Leblanc, N., Vernier, T.V., Semenova, N., Stacey, M., “Dielectric Properties of Isolated Adrenal Chromaffin Cells Determined by Microfluidic Impedance Spectroscopy”, *Bioelectrochemistry*, 119: pp 84-91, 2017

17. Lee, S. L., Peng, B.,**Sabuncu, A.C.,** Nam, S., Ahn, C., Kim M.J., Kim, M., “Multiple Consecutive Recapture of Rigid Nanoparticles Using a Solid-State Nanopore Sensor”, *Electrophoresis,* 39: pp 833-843, 2017

18. **Sabuncu, A. C. \***, Shen, J., Zaki, H., Beskok, A. “Changes in the Dielectric Spectra of Murine Colon During Neoplastic Progression”, *Biomedical Physics and Engineering Express*, 4: pp 035003, 2017

19. Garcia, A., McCreary, M., Hoban, D., Barg, T., Song, H., **Sabuncu, A. C. \***, :Electrical System for Bioelectric Impedance Using AD5933”, *SMU Journal of Undergraduate Research,* 2017 *(under review)*

**Peer-reviewed Book Chapters**

1. **Sabuncu, A. C. \*,** Gordon, R., Richer, E., Manoylov, K., Beskok, A., “The Kinematics of Explosively Jerky Diatom Motion: A First Example of Active Nanofluidics”2017 *(proposal submitted)*

**Conference Proceedings**

1. **Sabuncu A.C.** and Aslan A. R., “Aeroacoustics of vehicle side mirrors”. *Inter-Noise, The 36th International Congress and Exhibition on Noise Control Engineering*, Lufti Kirdar Kongre ve Sergi Sarayi, August 28-31, Istanbul, TURKEY, 2007.

2. **Sabuncu A.C.,** Michael Stacey, and Beskok, A., “Dielectric Spectroscopy: A Quantitative Tool for Biologist”. *Fundamental & Applied Bioelectrics: An International Scientific Workshop*, Frank Reidy Research Center for Bioelectrics, July 23 – 27, Norfolk, Virginia, USA, 2012.

3. Koklu, A., Tansel O., Oksuzoglu H., **Sabuncu, A.C.**, “Electrothermally Driven Flow at Physiological Liquid Conductivity”, *8th International Conference on Computational Heat and Mass Transfer,* May 25-28, Istanbul, Turkey, 2015.

**Conference Presentations (Abstracts)**

1. **Sabuncu A.C.,** Kalluri B.S., Cao W., Stacey M.W., Qian S., Beskok A. and Abdel-Fattah T.M., “Electrokinetic Properties of Colloidal Carbon Nanotubes”, *The 13th International Conference on Surface & Colloid Science and the 83rd ACS Colloid & Surface Science Symposium*, June 14-19, New York, USA, 2009.

2. **Sabuncu, A.C.,** Liu, J.A., Beebe, S.J., and Beskok, A., “Dielectrophoretic separation of mouse melanoma clones”, *7th International Bioelectrics Symposium*, June 24-25, Norfolk, USA, 2010.

3. Kalluri, B.S., Basu, G., **Sabuncu, A.C.,** Osgood, C.J., Beskok, A., Qian, S., Stacey, M.W., “Enhancing the killing effect of nsPEFs using tween 80 surfactant”, *7th International Bioelectrics Symposium*, June 24-25, Norfolk, USA, 2010.

4. Zhuang, J., **Sabuncu A.C.,** Beskok, A., Schoenbach, K.H., Kolb, J.F., “Time domain dielectric spectroscopy of biological cells after pulsed electric field exposure”, *Workshop on Novel Sampling and Sensing for Improving Food Safety*, June 16-17, Atlanta, USA, 2011.

5. **Sabuncu A.C.,** Beskok, A., “Probing Gold Nanoparticle and Cell Interactions in Cell Culture Medium”, *7th Nanoscience and Nanotechnology Conference*, June 27- July 1, Istanbul, TURKEY, 2011.

6. **Sabuncu, A.C.,**Zhuang, J., Kolb, J.F., Stacey, M.W., Beskok, A., “Dielectric Spectroscopy of Jurkat Cells in Microchambers”,*3rd Annual Lab-on-a-Chip World Congress*, September 29-30, South San Fransisco, USA, 2011.

7. Zhuang, J., **Sabuncu, A.C.**, Steuer, A., Beskok, A., Joshi, R.P., Kolb, J.F., “Pulsed Electric Field Induced Dielectric Changes and Their Correlation with Biological Responses”, *9th International Bioelectrics Symposium*, September 5-8, Kumamoto, Japan, 2012.

8. Zhuang, J., **Sabuncu, A.C.**, Steuer, A., Beskok, A., Joshi, R.P., Kolb, J.F., “Pulsed Electric Field Induced Biological Responses and Their Assessment Through Dielectric Diagnostic”, *4th Euro-Asian Pulsed Power Conference*, September 30 - October 4, Karlsruhe, Germany, 2012.

9. Beskok, A, **Sabuncu, A.C.,** Zhuang, J., Kolb, J.F., “A Microfluidic Device for Dielectric Spectroscopy of Jurkat Cells”, *222nd Meeting of the Electrochemical Society*,October 7-12, Honolulu, USA, 2012.

10. **Sabuncu, A.C.,** Stacey, M.W., Beskok, A., “Microfluidic Dielectric Spectroscopy of Costal Cartilage Chondrocytes”, *Biophysical Society* 57*th Annual Meeting*, February 2-6, Philadelphia, USA, 2013.

11. Asmar, A.J., **Sabuncu, A.C.,** Levenstein M.A., Stacey, M.W., Beskok, A., “Biological Compatibility of Electromanipulation Media”, *Biophysical Society* 58*th Annual Meeting*, February 15-19, San Fransisco, USA, 2014.

12. Koklu, A., Tansel O., **Sabuncu, A.C.**, “An electrohydrodynamics based microorganism enrichment device for biosensor applications”, *Lab-on-a-Chip European Congress*, March 10-11, Berlin, Germany, 2014.

13. Koklu A., Mansoorifar A., **Sabuncu, A.C.**, “*Electrothermally Driven Flow at Physiological Conductivities”,* ASME International Electronic Packaging Technical Conference and Exhibition, July 6-9, San Francisco, USA, 2015.

14. Koklu A., Ma S., Fernandez R.E., **Sabuncu A.C.**, Wilis D.A., Raj G., Beskok A., “*Dielectrophoretic Capture of Circulating Tumor Cells From Physiological Buffers”,* ASME International Electronic Packaging Technical Conference and Exhibition, July 6-9, San Francisco, USA, 2015.

15. Koklu A., **Sabuncu A.C.**, Beskok A., “*Fractal Electrodes to Enhance Dielectrophoresis”,* Microfluidics Conference, July 11-12, Philadelphia, USA, 2016.

16. Mansoorifar A., Koklu A., **Sabuncu, A.C.**, Beskok, A., “*A Microfluidic Device for Real-Time Electrical Studies of a Small Number of Cells”,* ASME International Electronic Packaging Technical Conference and Exhibition, July 10-14, Washington, DC, USA, 2016.

17. Koklu A., Mansoorifar A., **Sabuncu, A.C.**, Beskok, A., “*Development of a Rare Cell Isolator using Size and Dielectrical Differences between Cells”,* ASME International Electronic Packaging Technical Conference and Exhibition, July 10-14, Washington, DC, USA, 2016.

18. McCreary, M., Garcia, A., Hoban, D., Song, H., Barg, T., **Sabuncu, A. C.**, “*Portable, Accessible Multi-Frequency Screen for the Prognosis of Neuromuscular Atrophy and Degeneration*”, 18th International Conference on Biomedical Applications of Electrical Impedance Tomography, June 21-24, Hanover, New Hampshire, USA, 2017.

**DEPARMENTAL SEMINARS**

**Sabuncu, A.C.,** “Biological Particle Electromechanics and Dielectric Spectroscopy”, School of Medicine, Acibadem University, TURKEY, invited by Prof. Tanil Kocagoz, December 6, 2013.

**Sabuncu, A.C.,** “Particle Electromechanics, Microfluidics, and Dielectric Spectroscopy: Biotechnology Applicatioins”, ARCELIK Research and Development Center, TURKEY, invited by Dr. Emre Oguz, June 19, 2014.

**Sabuncu, A.C.,** “*Lab on a chip* Devices and Applications in Biology and Food Safety”, Department of Mechanical Engineering, Baskent University, TURKEY, invited by Prof. B. Dengiz, August 3, 2011.

**Sabuncu, A.C.**, “Dielectric Spectroscopy: Neoplasia Detection, Modeling, and Microfluidics”, AA. Martinos Center, Massachusetts General Hospital, Harvard Medical School, USA, invited by Dr. G. Bonmassar, June 2, 2017.

**Sabuncu, A.C.**, “Dielectric Spectroscopy: Neoplasia Detection, Modeling, and Microfluidics”, Center for Engineering in Medicine, Massachusetts General Hospital, Harvard Medical School, USA, invited by Dr. O. B. Usta, February 23, 2018.

**INVENTION DISCLOSURES**

1. “Mutual Capacitance Sensors for Tissue Characterization and Diagnostics”, Inventors: **Sabuncu, A.C.**, Beskok, A., 8/28/2015

2. “A Tracheal Cuff Pressure Monitoring Device”, Inventors: **Sabuncu, A.C.**, Rosero, E., Beskok, A., Richer, E., Jensen, B., 6/11/2016

\*This project was awarded by Southern Methodist University Research Administration Office with $4,250.00 to produce a prototype.

3. “3-D Capacitive-coupling Imaging Device”, Inventors: Lee, C.S., **Sabuncu, A.C.**, Beskok, A., 9/2/2016.

**THESIS COMMITTEE WORK**

Anil Koklu, MSc student, Thesis topic: “Different Materials for Decreasing Impedance at the Electrolyte/Electrode Interface”, Mechanical Engineering Department, Southern Methodist University, Graduated: Fall 2015, Principal Advisor: Ali Beskok.

**UNDERGRADUATE SENIOR DESIGN PROJECTS MENTORED**

***Worcester Polytechnic Institute***

**“Active Thermal Varistor”, Hudson Gasvoda, Spring 2020 (current)**

***\*This project is awarded by $1,000 from WPI I & E Center Tinkerbox Program***

**“RBC Shear Spectroscopy”, Aislinn Harte, Samantha Kelly, Max Spiegelhoff, Darren Burley, Courtney Campagna, Spring 2020 (current)**

***\*This project is awarded by $2,000 from WPI I & E Center Tinkerbox Program***

**“A Train-of-Four Monitoring Device for General Anesthesia”, Christopher Beauregard, Nicholas Bergstrom, Edward Crofts, Kyler Dillon, Anastasia Karapangou, Kinsey McNamara, Spring 2019**

***\*This team filed a provisional patent application on 4/16/19.***

**“Greenhouse Redesigned for Elementary Educational Needs (GREEN)”, Dan Barra, Katie Nugent, Daniel Ottey, Adam Peternell, Jonathan Toomey, Sean Traynor, Spring 2019**

***\*This team built a 24’ x 24’ greenhouse in a local farm and raised money necessary for it.***

**“Development of an Off Grid Solar Powered Milk Refrigeration Solution”, Abad, Brandon, Curtis, Michael, Havey, Kyle, Nash, Peter, Stapleton, Joseph, Xu, Luke, Spring 2019**

**“Self-Sustaining Cooling System”, Michael Bahnan, Kristen Bender, James Mosteller, Joseph Tomellini, Spring 2018 (co-advisor for this project).**

*Southern Methodist University*

“Low Cost Bioelectric Impedance Analysis Device for Measuring Muscle Quality”, Allison Garcia, Mar Mccreary, Taylor Barg, Danya Hoban, Hyun Song, Spring 2017.

\*This project was awarded by SMU Engaged Learning with $6,000.00, won Dean’s Award in SMU Research Day 2017, appeared in SMU Magazine in April 2017, and featured at the SMU main web-page (please see <http://www.smu.edu/News/2017/lyle-senior-project-28april2017>).

“Albumin Concentration Detector using Bio-magnetic Sensors”, Mackenzie Daly, Brooke Jensen, Kelly Howey, David Bride, Shivan Patel, Morgan Reiner, Spring 2017.

\*The project was ranked first among all engineering school senior design projects in Senior Design Expo, May 2017.

“Portable Impedance Analyzer for RF Applications”, Joe Hansen, William Armstrong, Austin Brasher, Nick Keller, Spring 2017.

*Istanbul Technical University*

“Design of an electrohydrodynamics based microorganism enrichment device for biosensor applications”, Anil Koklu, Neslihan Zengin, and Ilker Sarul, Spring 2014.

“Design of an Electro-Osmotic Micro Pump”, Levent Karacar and Osman Subasi, Spring 2013.

**PREDOCTORAL FELLOWSHIPS & AWARDS**

Tuition waiver and graduate student assistanship, Old Dominion University, VA, 2007-2011.

Graduate student assistantship, Istanbul Technical University, Turkey, 2005-2007.

Track speed record and third place in solar car design challenge of Scientific and Technological Research Council of Turkey, 2005 and 2006, respectively.

**MISCELLANEOUS**

Track co-chair for the ASME 14th (2016) and 15th (2017) International Conference on Nanochannels, Microchannels, and Minichannels, Biomedical and Lab on a Chip Applications.

Ad-hoc reviewer for the following journals: Biomedical Physics & Engineering Express, Biomicrofluidics, Electrophoresis, Medical & Biological Engineering & Computing, Proceedings of the Institution of Mechanical Engineers, Part H, Journal of Engineering in Medicine.

**SOCIETY MEMBERSHIPS**

Member of Biophysical Society, Jan/2013 to Jan/2015

Member of International Society of Electrical Bioimpedance, May/2013 to present

**LANGUAGE PROFICIENCY**

Turkish (Native), English (Fluent), German (Intermediate)

**REFERENCES**

1. **Dr. Nadine Aubry**

Provost and Senior Vice President,

Tufts University

Ballou Hall, 2nd Floor

Medford, MA 02155

617.627.3310

nadine.aubry@tufts.edu

1. **Dr. Ali Beskok** – PhD Advisor

Professor

Department of Mechanical Engineering

Southern Methodist University

3101 Dyer Street

Dallas, TX 72205

214-768-3200

abeskok@lyle.smu.edu

1. **Dr. Michael Stacey** – PhD co-Advisor

Associate Research Professor

Center for Bioelectrics

Old Dominion University

4211 Monarch Way

Norfolk, VA 23508

757-683-2245

mstacey@odu.edu

1. **Dr. Curtis Abel**

Professor of Practice, Innovation & Entrepreneurship (I&E)
Undergraduate Studies

Worcester Polytechnic Institute

100 Institute Road

Worcester, MA 01609

508-831-5798

 caabel@wpi.edu

1. **Dr. Cagdas Onal**

Associate Professor

Mechanical Engineering

Worcester Polytechnic Institute

100 Institute Road

Worcester, MA 01609

508-831-4857

cdonal@wpi.edu