

RAFAEL V. DAVALOS, PH.D.

L. PRESTON WADE PROFESSOR
BIOMEDICAL ENGINEERING AND MECHANICS
VIRGINIA TECH – WAKE FOREST UNIVERSITY
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EDUCATION

Ph.D. University of California - Berkeley, CA

Department of Mechanical Engineering - 2002
Major: Bioengineering Minors: Dynamics and BioMEMS Advisor: Boris Rubinsky
Dissertation Title: Real-time imaging for molecular medicine through electrical impedance tomography of electroporation

M.S. University of California - Berkeley, CA

Department of Mechanical Engineering
Major: Design

B.S. Cornell University - Ithaca, NY

Mechanical and Aerospace Engineering

RESEARCH AND TEACHING INTERESTS

Biotransport, design, cellular engineering microsystems, bioheat transfer, dielectrophoresis, medical device design for cancer detection and treatment, electroporation, bio-inspired microfluidics, scaffolds for tissue engineering, brain-on-a-chip.

PROFESSIONAL APPOINTMENTS

Virginia Tech – Wake Forest University - Blacksburg, VA

Professor: School of Biomedical Engineering and Sciences, 15 – present
Professor: Biomedical Engineering and Mechanics, 15 - present
Associate Professor: School of Biomedical Engineering and Sciences, 11 - 15
Adjunct Appointment: Mechanical Engineering, 13 - present
Adjunct Appointment: Wake Forest Institute of Regenerative Medicine, 08 - present
Affiliate Appointment: Engineering Science and Mechanics at Virginia Tech, 08 - present
Assistant Professor: School of Biomedical Engineering and Sciences, 06 - 11

Sandia National Laboratories - Livermore, CA

Principal Member of Technical Staff: Microsystems and Advanced Concepts Engineering, 06 - 07
Senior Member of Technical Staff: Microsystems Design and Integration, 05 - 06
Senior Member of Technical Staff: National Security Engineering, 03 - 05

LICENSING OF INVENTIONS

Protea Biosciences (Morganstown, WV): Acquired rights to license microfluidics technology
Angiodynamics (Queensbury, NY): FDA approved system, which has treated over 6000 cancer patients
BC Genesis (Blacksburg, VA): Start-up company based on licensed bio-fabrication technology
CytoRecovery (Blacksburg, VA): Start-up company licensed rare cell sorting technology
VoltMed (Blacksburg, VA): Start-up company licensed platform to treat brain cancer

COURSES TAUGHT

Biomedical Microdevices: Created and teach graduate course
Quantitative Physiology: Co-instruction of core graduate course in biomedical engineering

Transport Processes in Biological Systems: Undergraduate course in biological transport
Senior Design: Mentor students in design of platform for organ scaffolds
Engineering Mathematics: Created cross-disciplinary course for first year graduate students
Fundamentals of Cancer: Course in Translational, Biology, Health and Medicine program

SELECTED HONORS AND AWARDS

AIMBE Fellow: American Institute for Medical and Biological Engineering, 19
Dean's Award: Excellence in Research, 16
Endowed Professorship: L. Preston Wade Professorship, 16 - present
Innovator Award: Roanoke-Blacksburg Technology Council (RBTC) TechNite, 15
ASME Fellow: The American Society of Mechanical Engineers, 15
Innovator Award: Institute of Critical Technologies and Applied Sciences, 14
Richard Skalak Award: ASME Journal of Biomechanical Engineering for Best Paper, 14
XCaliber Certificate of Teaching Excellence: Technology-Enriched Learning, Center of Innovation, VT, 13
Outstanding Dissertation Advisor of the Year: Virginia Tech, 12
Wallace H. Coulter Fellow, Wallace H. Coulter Foundation, 12
College of Engineering Faculty Fellow: College of Engineering, Virginia Tech, 11-14
NSF CAREER Award Recipient: National Science Foundation, 11
Outstanding New Assistant Professor Award: College of Engineering, Virginia Tech, 09
NanoKnife: One of 20 institutions awarded \$395K unit, 08 - present
Early Career Award: Wallace H. Coulter Foundation, 08 - 12
Top 7 Inventions of '07: Irreversible Electroporation. NASA Tech Briefs, The Year in Technology, 07
Special Issue on Irreversible Electroporation: Technology in Cancer Research and Treatment, 07
Featured on NPR's Pulse of the Planet: Irreversible Electroporation Therapy, 07, 12, 13, and 18
National Award Recipient: HENAAC – Nation's Most Promising Engineer or Scientist, 06
Appointed Chair: Sandia National Laboratories Diversity Division Council, 05 - 06
Doctoral Studies Fellowship: Sandia National Laboratories, 00 – 02

SELECTED INVITED TALKS

Distinguished Speaker: Virginia Tech 2019 LatinX Symposium, 19
Invited Speaker: 2019 IEEE EMBC, A Physician, an Engineer and a Patient Walk into a Room, Berlin, 19
Keynote Speaker: 1st Latin American Workshop on Electroporation, Buenos Aires, Argentina, 18
Invited Speaker: Design of Medical Devices (DMD) Conference, Minneapolis, MN, 18
Plenary Speaker: International Symposium on Bioelectrochemistry and Bioenergetics, Lyon, France, 17
Keynote Address: Research Day, Southern Adventist University, Collegedale, TN, 17
Invited Speaker: 2017 IEEE International Microwave Symposium, Honolulu, HI, 17
Invited Speaker: BioEM 2016, Ghent, Belgium, 16
Invited Speaker: Int'l Symposium on Electro & Liquid Phase-Separation Techniques, Minneapolis, MN 16
Invited Speaker: FACCs SciX 2016, Minneapolis, MN 16
Plenary Speaker: 1st World Congress on Electroporation, Portoroz, Slovenia, 15
Invited Speaker: SNO-SCIDOT Joint Conference on Therapeutic Delivery to the CNS, San Antonio, TX, 15
Invited Speaker: IEEE EMBS, Cellular BioMEMS Mini Symposium, Chicago, IL 14
Invited Speaker: 11th International Bioelectrics Symposium, Columbia, MO, 14
Invited Speaker: Microscale BioSeparations, Charlottesville, VA, 13
Invited Speaker: 1st Int'l Symp on Bacterial Nanocellulose, 245th ACS Ann Meeting, New Orleans, LA, 13
Invited Speaker: Gordon Conference, Bioelectrochemistry. Nr. Lucca, Italy, 12
Invited Speaker: 34th Annual IEEE EMBS Conference, San Diego, CA, 12
Invited Speaker: Electroporation-based Technologies and Treatments Workshop, Ljubljana, Slovenia, 12

Invited Speaker: Int'l Scientific Workshop on Fundamentals and Applied Bioelectrics, Norfolk, VA, 12
Keynote Speaker: Int'l Symposium on Electro & Liquid Phase-Separation Techniques, Baltimore, MD, 12
Invited Speaker: SHPE, Thermofluids and Biomedical Optics Symposium. Anaheim, CA, 11
Invited Speaker: 38th FACSS Conference. Reno, NV, 11
Invited Speaker: Fourth Annual Breast Cancer Symposium. Peoria IL, 11
Invited Speaker: IEEE EMBS Electric Fields Effects in Tumors Workshop. Argentina, 10
Invited Speaker: 7th International Bioelectrics Symposium. Norfolk, VA, 10
Invited Speaker: Engineering Platforms for Exploring Cellular and Molecular Processes. U Louisville, 10
Invited Speaker: Thermal Biology and Therapy Workshop. U Minnesota, 10
Invited Speaker: Society for CNS Interstitial Delivery of Therapeutics. Cleveland Clinic, 09
Invited Speaker: 36th FACSS Conference. Louisville, KY, 09
Plenary Speaker: 45th Annual Meeting of the Society for Cryobiology. Charlotte NC, 08
Invited Speaker: Commercialization of Drug Discovery, Delivery and Diagnostics. Cambridge, MA, 05

APPOINTMENTS AND ACTIVITIES

Member: The American Electrophoresis Society, 09 - present
Member: Brain Tumor Center of Excellence at Wake Forest University, 09 - present
Member: Wake Forest University Comprehensive Cancer Center, 08 - present
Member: Biomedical Engineering Society, 08 - present
Member: Bioelectrochemistry Society (BES), 03 - present
Member: ASME Biotransport Division, 02 - present
Visiting Research Associate: CNRS, Institut Gustave Roussy, France, 01 - 02

OUTREACH AND PROFESSIONAL SERVICE

NIH Study Section Chair: Universal Medium/Blood Mimetic for Use in Integrated Organs-on-Chip, 19
NIH Study Section Chair: Non-PDMS Biocompatible Alternatives for Organs-on-Chip, 19
Technical Committee Co-Chair: SB3C Biotransport Division, 19
Vice Chair: ASME Biotransport Division, 18-20
Guest Editor: Technology in Cancer Research and Treatment - Special Issue, 17-18
Editorial Board: Bioelectricity, 18 - present
Program Committee: Southern Bioengineering Conference, Charlotte, NC, 18
Elected Officer: International Society for Electroporation-Based Technologies & Treatments, ISEBTT, 17
Virginia Tech Lead: Inaugural VT-UVA Symposium on Nanomedicine, Charlottesville, VA, 17
Organizing Committee: US-Australia Emerging Cancer Biomedical Technologies Workshop, VT-NCR, 17
International Organizing Committee: 2nd World Congress on Electroporation, Norfolk, Virginia, 17
NIH Study Section Chair: IMST-15 SBIR/STTR Cell and Molecular Biology, 17 - 19
Student Awards Committee: ASME NEMB, Houston, TX, 16
Associate Editor: IEEE Transactions on Biomedical Engineering, 15 - present
Guest Editor: Biomedical Engineering Online - Special Issue, 15
Scientific Program Committee: 1st World Congress on Electroporation, Portoroz, Slovenia, 15
Special Session Co-Chair: MBEC 2014: Advanced tech for treating deep-seated tumors using ECT and IRE
Associate Editor: ASME Journal of Medical Devices, 13 - present
Program Chair: American Electrophoresis Society Annual Meeting, 13
Information Chair: ASME Summer Bioengineering Conference, 13
Editorial Board: Journal of Electrophoresis, 11 - present
Session Chair:
3rd World Congress on Electroporation, Toulouse, France, 19
SciX/AES, Microscale Electrokinetics and Electroporation, Atlanta, GA, 18

NEMB, Micro/nanotechnology for diagnosis, prognosis, and drug delivery, Los Angeles, CA, 18
8th World Congress on Biomechanics, Cryotherapy and cryopreservation, Dublin, Ireland, 18
BioEM 16, Micro-chambers for single cell electromagnetic exposure and analysis, Ghent, Belgium, 16
1st World Congress on Electroporation, Portoroz, Slovenia, 15
BMES, Nano to Micro technologies: BioMEMS II, 14
BMES, Implantable Devices and Implantable Electronics, 14
BMES, Nano to Micro technologies: Microtechnologies for Cancer, 14
Bioelectrochemistry Gordon Research Conf, Cells and Models Under Electric Fields, 14
Bioelectrochemistry Gordon Research Seminar, Cells and Models Under Electric Fields, 14
BMES, Translation Biomedical Engr: Therapeutic and Diagnostic Biomedical Devices, 13
ITP 2012, Dielectrophoresis, 12

AIChE, Electroporation, Electrophysiology and Cell Electrokinetics, 11-13
IEEE Engineering in Medicine and Biology Conference, Magnetic Sensors and Systems, 12
ASME Summer Bioengineering Conference, Imaging in Biotransport, 12
ASME Summer Bioengineering Conference, Biotransport in Device and Design, 10
ASME Summer Bioengineering Conference, Improvements in Thermal Therapy, 09
ASME Summer Bioengineering Conference, Characterization of Thermal Medical Applications, 08
ASME Summer Bioengineering Conference, Biothermal Therapy, 07
ASME Heat Transfer Conf, Experimental and Computational Methods in Medicine and Biology, 05
ASME IMECE, Bioengineering Division, Thermal Aspects of Molecular Surgery, 04

Session Co-Chair: ASME Summer Bioengineering Conference, Targeted Delivery and Electroporation, 11

AIChE, Electrokinetic Behavior of Microparticles and Nanoparticles, 10
AIChE, Advances in Electrokinetics and Electrophoresis - Particles and Biomolecules, 09

Track Chair: IEEE EMBC (Co-Chair: M Khine), Bioinstrumentation: Microfluidics, 11-12

IEEE EMBC (Co-chair: RC Lee), Electric Fields at the Cell and Protein Scale, 10

IEEE EMBC (Co-chair: RC Lee), Electric Fields at the Cell and Protein Scale, 09

Judge: 8th World Congress on Biomechanics, Dublin, Ireland, 18

ASME Summer Bioengineering Conference, Student Poster Competition, 10

ASME Summer Bioengineering Conference, Student Podium Competition, 08 - 09

Peer reviewer: Nature - Scientific Reports, Applied Physics Letters, JBC Online, Journal of Tissue Engineering, IEEE Transactions on Biomedical Engineering, ASME Journal of Biomechanical Engineering, Biomedical Microdevices, Lab on a Chip, Bioelectrochemistry, Annals of Biomedical Engineering, IEEE EMBC, ASME SBC, Journal of Thermal Biology, Technology in Cancer Research and Treatment, IEEE Transactions on Plasma Science, Chemical Reviews, Analytical Chemistry, Journal of Membrane Biology, IEEE Transactions on Dielectrics and Electrical Insulation, IEEE Transactions on Instrumentation and Measurement, Biomicrofluidics, Analytical and Bioanalytical Chemistry, PLoS ONE, Electrophoresis, ASME Journal of Nanotechnology in Engineering and Medicine, Biomedical Engineering Online, Nanomedicine, Cancer Research, Analyst, Biomaterials

Review panel: National Science Foundation, 07 - present

Science and Engineering Research Council Agency for Science, Technology & Research, Singapore, 19

DoD's Congressionally Directed Medical Research Program (CDMRP), 18 - present

Slovenian Research Agency, 15 - present

Cariplo Foundation Scientific Committee, Italy, 11-present

National Institute of Health, 12 - present

Air Force Office of Scientific Research, 12

Engineering and Physical Sciences Research Council of the United Kingdom, 12

INTERNAL SERVICE AND DIVERSITY INITIATIVES

Chair: Biomedical Engineering and Mechanics Promotion and Tenure Committee, 20 - present
Graduate Track Director: Medical Device Design & Entrepreneurship, 19 - present
Speaker: Pathway for Future Engineers Program for First Generation Students, 19
Speaker: Hispanic College Institute (HCI) STEM Day, 19
Member: Academic Program Review Committee for Biomedical Sciences and Pathobiology, 19
Member: Search Committee for School of Neuroscience, 19-20
Member: Search Committee for Center for Human Neuroscience Research, 19
Member: Search Committee for Cardiovascular Faculty, 19-20
Leadership Team: Health Sciences and Technology - Translation and Commercialization, 18 - present
Member: Search Committee for Dean of the Virginia – Maryland Veterinary School, 19 - 20
Chair: Search Committee for Department Head, 18 - 19
Member: Search Committee for Mechanical Engineering, 18 – 19
Member: Biomedical Engineering and Mechanics Promotion and Tenure Committee, 17 - 19
Member: Search Committee for Mechanical Engineering, 17 – 18
Member: Search Committee for VTCRI in Computational Neuroscience, 17-18
Co-chair: Health Sciences and Technology Building Design Committee, 17
Director: ICTAS Center for Engineered Health, 16 - present
Member: Stakeholder Committee on Innovation and Entrepreneurship, 16
Chair: Search Committee for Assistant/Associate Professor, 16-17
Member: Advance VT/Inclusive VT Diversity Committee, 16 - present
Member: VTCRI 5-year Review Committee, 16
Member: Search Committee for College of Engineering Dean, 16 - 17
Member: Search Committee for VMCVM Associate Dean of Research and Graduate Studies, 16
Member: Intellectual Property Committee, 15 - 17
Member: Beyond Boundaries Committee, 15 - 17
Member: Search Committee for Executive Vice President and Provost, 15
Member: Search Committee for WF Assistant Professor, 15
Chair: Search Committee for VT Assistant Professor Position at Virginia Tech, 12
Steering Committee: Center for Drug Discovery, Development, and Delivery (CD4), 12 - present
Member: Search Committee for VT Assistant Professor Position at Virginia Tech, 11
Member: Search Committee for WF Assistant Professor Position at Virginia Tech, 11
Instructor: Interdisciplinary Training at ACC Interdisciplinary Forum for Discovery in Life Sciences, 10
Keynote Speaker: Kids' Tech University: *Why can't humans walk on water and climb walls with their fingertips like spiders*, April, 10
Speaker: Workshops for C-TECH² and NASA High-School Summer Programs, 10
Panel Member: Virginia Tech GEM GRAD Lab, 10
Member: Search Committee for SBES Department Head at Virginia Tech, 09
Director: College of Engineering Diversity Summer Program, 07 - 14
Director: NSF/NIBIB Bioengineering and Bioinformatics Summer Institute, 07 - 12
Chair: ICTAS Theme Area on Cellular Engineering Microsystems (CEMS), 07 – 16
Co-Director: ICTAS Multi-scale Bio-Engineered Devices & Systems (M-BEDS), 07 - 16
Recruiter: Represent Virginia Tech at SHPE Career Fairs, 07 - 16
Coordinator: SBES graduate student weekend and other recruitment efforts, 07 - present
Member: Virginia Tech College of Engineering Diversity Committee, 07 - present

EXTERNAL GRANTS (>\$32.1M Total, \$21.7M VT, >\$8.3M PI Share)

Microsystem for label-free separation of tumor-associated cells from biopsies for precision medicine

PI: EM Schmelz (Co-PI: Davalos, Swami) Source: Virginia Biosciences Health Research Corporation (VBHRC) (2020-2021, \$600K)

Development and Application of non-thermal, high frequency IRE to treat hepatic tumors

PI: RV Davalos (Co-I: Dervisis) Source: NIH (2020-2025, \$2.5M) (Expected: Score 8%) 1R01 CA240476

SBIR: Development of an MRI-compatible, High-Frequency Irreversible Electroporation (H-FIRE) for Non-thermal Ablation of Inoperable Tumors

PI: CB Arena (Co-PI: Davalos, Rossmeisl) Source: NIH (2018-2019, \$245K, VT \$83K) 1R43CA233158

Microfluidic Platform for Cell Phenotyping

PI: RV Davalos Source: CytoRecovery Inc. (2018-2020, \$76,768)

Brain Cancer Treatment with High Frequency Electroporation

PI: RV Davalos (Co-PI: Rossmeisl, Arena, Miller) Source: VRIF (2018-2020, \$1.1M)

Commercialization of INSPIRE for Brain Cancer Treatment

PI: RV Davalos (Co-PI: Rossmeisl, Arena, Miller) Source: Virginia Biosciences Health Research Corporation (VBHRC) (2017-2019, \$800K)

PO1: Maximizing Local Access to Therapeutic Deliveries in Glioblastoma

PI: W Debinski (Co-PI: Davalos, Mintz, Rylander, Rossmeisl) Source: NIH (2018-2022, \$9.2M)
1P01CA207206-01

Unrestricted Research Grant

PI: RV Davalos, Source: CytoRecovery (2018, \$32K)

Planning IUCRC VT: Center for Cyber-Physical Systems for the Hospital Operating Room (CyBHOR)

PI: RV Davalos (Co-PI: Behkam, Whittington, Priya, Dietrich) Source: NSF (2018-2019, \$15K)

US-Australia Emerging Cancer Biomedical Technologies Workshop

PI: RV Davalos (Co-PI: S Priya) Source: NSF (2017-2018, \$30K)

Development of INSPIRE for Brain Cancer Treatment

PI: RV Davalos, Source: Virginia Biosciences Health Research Corporation (VBHRC) (2016-2017, \$380K)

Role of Extracellular Space as a Modulator of the Cardiac Gap Junction-Conduction Velocity Relationship

PI: S Poelzing (Co-I: RV Davalos, R Gourdie, J Smyth) Source: NIH (2016-2020, \$2.1M) R01HL102298

High-Frequency Irreversible Electroporation for combinatorial GBM treatment

PI: RV Davalos, S Verbridge (Co-I: J Robertson, J Rossmeisl) Source: NIH (2017-22, \$1.76M) R01CA213423

Repurpose the Irreversible Electroporation System for Optimal Immune Modulation Efficacy

PI: RV Davalos (Co-PI: RC Martin), Source: Cures Within Reach (2017-2018, \$50K)

Development of next generation IRE treat pancreatic cancer

PI: D Iannitti (Co-PI: RV Davalos), Source: PanCAN (2016-2019, \$300K) 16-65-IANN

STTR Phase I: An Endoscopic-Based INSPIRE Platform for Treating and Monitoring Unresectable Pancreatic Cancer

VoltMed PI: MB Sano, VT PI Davalos, Source: NSF (2014, \$225K, VT \$68K) IIP-1346343

Minimally Invasive Surgical Platform for H-FIRE and Chemotherapy Treatment

VoltMed PI: PA Garcia (VT PI: Davalos) Source: CIT CRCF (2015-16, \$50K, VT \$20K) STTR 15-002-LS

STTR Match: INSPIRE Therapy: Real-time treatment and monitoring of Pancreatic Cancer
VoltMed PI: RV Davalos, Source: CIT CRCF (2014, \$50K) STTR 14S-003-LS

High Frequency Irreversible Electroporation for Pancreatic Cancer
PI: C Clark (Co-PI: RV Davalos), Source: Golfers Against Cancer (2015-16, \$40K)

PhenoCHIP: Phenotype-based Cell Hierarchy and Isolation Platform
PI: RV Davalos, Source: Virginia Biosciences Health Research Corporation (VBHRC) (2014-2015, \$270K)

R21: Targeted Electric Field Therapy for Malignant Infiltrative Glioma
MPI: RV Davalos, S Verbridge, Source NIH (2014-2017, \$386K) 1R21 CA192041-01

SBIR Phase I: Innovative Biofabrication of 3D Nano-Biocomposites for Repair of Osteochondral Defects
BC Genesis PI: P Gatenholm, VT PI: RV Davalos, Source: NIH (2013, \$150K, \$25K VT) R43 AG044153-01A1

R21: Isolation of Tumor Initiating Cells (TICs) using Contactless Dielectrophoresis
PI: RV Davalos (Co-PI: S Cramer), Source: NIH (2013-2015, \$368K) 5R21 CA173092-01

Use of bioceramic nanoscaffolds to enhance irreversible electroporation for in situ tissue destruction
PI: I McKillop (Co-PI: RV Davalos), Source: Carolina Medical Center (2014-2015, \$47K, \$7.6K VT)

High Frequency Irreversible Electroporation for Lung Cancer and other Endoscopic Ablation Applications
PI: RV Davalos, Source: CIT CRCF (2013-2014, \$100K) MF13-034-LS

Use of Electric Fields for the Isolation of Tumor Initiating Cells and other Rare Cells
PI: RV Davalos, Source: CIT CRCF (2013-2014, \$100K) MF13-037-LS

NSF RET: Biomechanics from Molecular to Organismal Scales
PI: D Dudek (Co-PI: J Socha, SP: RV Davalos), Source: NSF (2014-2016, \$500K) RET-1301037

I-Corps: Translation of High Frequency Irreversible Electroporation for Human Clinical Applications,
PI: RV Davalos, Source: NSF (2012-2013, \$50K) IIP 1265105

EFRI-RET: Complex Microsystem Networks Inspired by Internal Insect Physiology
PI: J Socha (Co-PI: RV Davalos, I Puri), Source: NSF (2013-2014, \$114K) RET-0938047

EFRI-RET: Complex Microsystem Networks Inspired by Internal Insect Physiology
PI: J Socha (Co-PI: RV Davalos, I Puri), Source: NSF (2012-2013, \$100K) RET-0938047

CAREER: An experimental and numerical investigation of the biophysical processes of pulsed electric field induced irreversible electroporation for Glioblastoma Multiforme
PI: RV Davalos Source: NSF (2011-17, \$452K) CBET-1055913

IGERT: MultiScale Transport in Environmental and Physiological Systems (MultiSTEPS)
PI: MA Stremier (Co-PI: RV Davalos, J Kuhn, S Ross, P Vlachos) Source: NSF (2010-14, \$3M) DGE-0966125

EFRI-BSBA Complex Microsystem Networks Inspired by Internal Insect Physiology
PI: J Socha (Co-PI: RV Davalos, R DeVita, J Harrison, A Staples), Source: NSF (2010-13, \$2M) EEC-0938047

Quantification of Blood-Brain-Barrier Disruption Achieved by Intracranial N-TIRE for an Optimized Combinatorial Therapy Against GBM
PI: TL Ellis (Co-PI: RV Davalos), Source: Golfers Against Cancer (2010-11, \$28K)

Task Order 1: Calibration Curves for Cassini Oval Lesion Estimator
PI: RV Davalos, Source: Angiodynamics (2010, \$20K)

Task Order 2: Regression Analysis to Fit Numerical Models to Experimental Data
PI: RV Davalos, Source: Angiodynamics (2010, \$30K)

Task Order 3: Three-Dimensional Irreversible Electroporation Modeling and Field Characterization
PI: RV Davalos, Source: Angiodynamics (2010, \$30K)

Task Order 4: FEA Modeling of Ablation Variables
PI: RV Davalos, Source: Angiodynamics (2012, \$104K)

Task Order 5: Hydrogel Modeling of IRE
PI: RV Davalos, Source: Angiodynamics (2013, \$40K)

Task Order 6: Brain Paper
PI: RV Davalos, Source: Angiodynamics (2013, \$38K)

Task Order 9: Bipolar probe modeling
PI: RV Davalos, Source: Angiodynamics (2013-2014, \$32K)

Task Order 10: Characterization of Lesion Volumes using ex vivo samples
PI: RV Davalos, Source: Angiodynamics (2015, \$12K)

Task Order 11: Modeling of Field Distributions in Tissue
PI: RV Davalos, Source: Angiodynamics (2015, \$10K)

Task Order 12: Experimental evaluation using perfused organ models
PI: RV Davalos, Source: Angiodynamics (2015-2016, \$65K)

Task Order 13: Advanced Experimental Ablation Protocols
PI: RV Davalos, Source: Angiodynamics (2016-2017, \$65K)

Task Order 14: Advanced Experimental Ablation Evaluation using Perfused Organ Models
PI: RV Davalos, Co-PI: JL Robertson, Source: Angiodynamics (2018-2018, \$65K)

Task Order 15: Hydrogel Models of Pancreatic Cancer
PI: RV Davalos, Co-PI: SS Verbridge, Source: Angiodynamics (2018-2019, \$147K)

Task Order 16: Characterization of Irreversible Electroporation in Pancreas
PI: IC Allen, Co-PI: RV Davalos, Source: Angiodynamics (2018-2019, \$578K)

Task Order 17: Defining the electrical properties and biological impact of tumor ablation modalities for use in prostate to maximize therapeutic effect
PI: IC Allen, Co-PI: RV Davalos, SS Verbridge Source: Angiodynamics (2019-2022, \$425K)

SBIR: Customizable Meniscus Implant Prepared by Dielectrophoretic Biofabrication - Phase I and Phase II
BC Genesis PI: P Gatenholm, VT PI: RV Davalos, Source: NSF (2009-12, \$1,141K, \$180K VT) IIP-1026421

Combinatorial Brain Cancer Therapy through Irreversible Electroporation and Carbon Nanotubes
PI: RV Davalos (Co-PI: MN Rylander), Source: NSF CBET (2009-11, \$300K) CBET-0933335

Unrestricted Research Grant
PI: RV Davalos, Source: PhenoCHIP (2017, \$30K)

Unrestricted Research Grant
PI: RV Davalos, Source: PhenoCHIP (2016, \$15K)

Unrestricted Research Grant
PI: RV Davalos, Source: Protea Biosciences (2014, \$25K)

Unrestricted Research Grant
PI: RV Davalos, Source: Protea Biosciences (2011, \$10K)

Unrestricted Research Grant: Modeling of Irreversible Electroporation

PI: RV Davalos, Source: Angiodynamics (2009, \$15K)

Irreversible Electroporation Devices to Treat Cancer - Phase I and Phase II

PI: RV Davalos (Co-PI: TL Ellis), Source: Coulter Foundation - Early Career Award (2008-12, \$500K)

Isolation and Enrichment of Tumor Stem Cells using Insulator-Based Dielectrophoresis

PI: S Cramer (Co-PI: RV Davalos), Source: Golfers Against Cancer (2008-10, \$35K)

Quantitative Evaluation of Micro-Electroporation

PI: RV Davalos, Source: Jeffress Memorial Trust (2008, \$20K)

NSF-NIBIB BBSI: Summer Institute for Quantitative and Integrative Bioengineering

PI: RV Davalos (Initial PI: E Scott, Co-PI: RC Laubenbacher), Source: NSF (2006-10, \$649K) EEC-0609225

INTERNAL SUPPORT

Microfluidic Model of Cancer

PI: RV Davalos (Co-PI: C Finkelstein), Source: Fralin Biotechnology Center (2010, \$10K)

Dielectrophoretic Microweaving

PI: RV Davalos (Co-PI: P Gatenholm), Source: ICTAS (2009-11, \$99K)

Cancer Therapy through Irreversible Electroporation Enhanced with Carbon Nanotubes

PI: RV Davalos, Source: Comprehensive Cancer Center - Wake Forest University (2008-09, \$25K)

Implantable Micro-Oncologists

PI: RV Davalos (Co-PI: M Agah, I Puri, G Wang, P Gatenholm), Source: ICTAS (2007-09, \$104K)

PEER-REVIEWED JOURNAL ARTICLES (cited >9500 times with h-index 50)

1. PM Graybill, A Jana, R Kapania, A Nain, **RV Davalos**. Contractile forces reveal orientation-dependent cellular responses on nanofibers to fields. In preparation.
2. N Beitel-White, R Martin, Y Li, R Brock, I Allen, **RV Davalos**. Real-time prediction of patient immune cell modulation during irreversible electroporation therapy. *Scientific Reports*, accepted. **(IF 4.011)**
3. CI Trainito, DC Sweeney, J Cemazar, EM Schmelz, O Francais, B Le Pioufle, **RV Davalos**. Characterization of sequentially-staged cancer cells using electrorotation, *PLoS ONE*, 14(9): e0222289, 2019. **(IF 2.776)**
4. TA Douglas, N Alinezhadbalalami, N Balani, EM Schmelz, **RV Davalos**. Separation of macrophages and fibroblasts using contactless dielectrophoresis and a novel ImageJ macro. *Bioelectricity*, vol 1(1), pp 49-55, 2019. **(Invited: Inaugural Issue)**
5. EM Wasson, N Alinezhadbalalami, RM Brock, IC Allen, SS Verbridge, **RV Davalos**. Understanding the role of calcium-mediated cell death in high-frequency irreversible electroporation. *Bioelectrochemistry*, p.107369, 2019. **(IF 4.474)**
6. N Alinezhadbalalami, TA Douglas, N Balani, SS Verbridge, **RV Davalos**. The feasibility of using dielectrophoresis for isolation of Glioblastoma subpopulations with increased stemness. *Electrophoresis*, vol 40, pp 2592-2560, 2019. **(IF 2.754) – (inside front cover)**

7. TJ O'Brien, MF Lorenzo, Y Zhao, RE Neal II, JL Robertson, NS Goldberg, **RV Davalos**. Cycled pulsing to mitigate thermal damage for multi-electrode irreversible electroporation therapy, *International Journal of Hyperthermia*, vol 36(1), pp 953-963, 2019. **(IF 3.440)**
8. V Farmehini, W Varhue, A Salahi, A Hyler, J Cemazar, **RV Davalos**, N Swami. On-chip impedance for quantifying parasitic voltages during AC Electrokinetic trapping. *IEEE Transactions on Biomedical Engineering*, in print. **(IF 4.228)**
9. JW Ivey, EM Wasson, N Alinezhadbalalami, A Kanitkar, W Debinski, Z Sheng, **RV Davalos**, SS Verbridge. Characterization of ablation thresholds for 3D-cultured patient-derived glioma stem cells in response to high-frequency irreversible electroporation. *AAAS Research*, vol 2019, pp 8081315:1-14, 2019. **(IF N/A)**
10. B Partridge, TJ O'Brien, MF Lorenzo, S Coutermarsh-Ott, S Barry, N Muro, IC Allen, **RV Davalos**, NG Dervisis. High frequency irreversible electroporation for treatment of primary liver cancer – a proof of principal study in canine hepatocellular carcinoma, *Journal of Vascular and Interventional Radiology*, in print **(IF 2.882)**
11. MJ Scheltema, TJ O'Brien, P Agnass, W van den Bos, DM de Bruin, **RV Davalos**, C van den Geld, M van Gemert, MP Laguna, RE Neal II, TM de Reijke, CB Arena, J de la Rosette. Numerical simulation modeling of the irreversible electroporation treatment zone for focal therapy of prostate cancer, Correlation with whole-mount pathology, *Therapeutic Advances in Urology*, vol 11, pp 1-10, 2019. **(IF 3.029)**
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ABSTRACTS

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26. PA Garcia (**plenary**), EL Latouche, JH Rossmeisl, **RV Davalos**. Irreversible electroporation – advanced techniques for treating deep-seated tumors. BioEM2017, Hangzhou, China, Jun 5-9, 2017.
27. B Kos, P Garcia, JH Rossmeisl, D Miklavcic, **RV Davalos**. Glioma specific cell death model for planning of irreversible electroporation treatments. BioEM2017, Hangzhou, China, Jun 5-9, 2017.
28. M Bonakdar, TJ O'Brien, E Latouche, **RV Davalos**. The development of an intelligent surgical probe for real-time monitoring of electroporation-based treatments. IEEE EMBS Micro and Nano (MNMN 2016), Waikola, HI, Dec 12-16, 2016.
29. **RV Davalos (invited)**, TA Douglas, J Cemazar, EM Schmelz. Contactless dielectrophoresis for the separation of cancer cells at different stages of progression. SciX 2016, Minneapolis, MN, Sep 18-23, 2016.
30. **RV Davalos (invited)**, TA Douglas, J Cemazar. Contactless dielectrophoretic enrichment of tumor initiating cells with enhanced viability via cell-scale microstructures. SciX 2016, Minneapolis, MN, Sep 18-23, 2016.
31. M Bonakdar, E Latouche, **R Davalos**. Monitoring lesion development during irreversible electroporation treatment using electrical impedance spectroscopy, Biophysical Society Annual Meeting, Los Angeles, CA, Feb 27 - Mar 2, 2016.
32. S Verbridge (invited), J Ivey, E Latouche, A Kanitkar, M Sano, Z Sheng, J Rossmeisl, **R Davalos**. Toward targeting the physical hallmarks of tumors with pulsed electric field ablation therapy. BMES Annual Meeting, Minneapolis, MN, Oct 5-8, 2016.

33. S Bhonsle, A Rolong, A Safaai-Jazi, C Clark, **R Davalos**. Characterization of the electrical properties of surgically resected human healthy and malignant pancreatic tissue in response to irreversible electroporation for treatment of pancreatic cancer. BMES Annual Meeting, Minneapolis, MN, Oct 5-8, 2016.
34. D Sweeney, T Douglas, **R Davalos**. Unifying cellular bioelectromagnetic phenomena: Dielectrophoresis and electroporation. BMES Annual Meeting, Minneapolis, MN, Oct 5-8, 2016.
35. T Douglas, J Cemazar, E Schmelz, **R Davalos**. Contactless dielectrophoresis for tumor subpopulation separation and enrichment. Dielectrophoresis Conference 2016, MIT, Cambridge, MA, July 13-15, 2016. **Herbert A Pohl Student Presentation Award**
36. M Bonakdar, E Wasson, **RV Davalos (invited)**. Using a microfluidic platform as a miniaturized model of the blood-brain barrier to study molecular uptake due to pulsed electric fields. BioEM2016, Ghent, Belgium, Jun 5-10, 2016.
37. EL Latouche (podium award), M Bonakdar, **RV Davalos**. Smart surgical probe for real-time monitoring of electroporation-based treatments. BMES/FDA Frontiers in Medical Devices Conference scheduled for College Park, MD, May 23-25, 2016.
38. A Baah-Dwomoh, A Rolong, P Gatenholm, **RV Davalos**. Using electric fields to induce pores in bacterial cellulose scaffolds. Society for Biomaterials Annual Meeting, Charlotte, NC, Apr 15-18, 2015.
39. M Bonakdar, E Wasson, **RV Davalos**. Using a microfluidic platform as a miniaturized model of the blood-brain barrier to study molecular uptake due to pulsed electric fields. The ASME 2015 4th Global Congress on NanoEngineering for Medicine and Biology, Minneapolis, MN, Apr 19-22, 2015.
40. E Wasson, M Bonakdar, **RV Davalos**. A microfluidic device to study tight junction disruption in the blood-brain barrier using pulsed electric fields. The ASME 2015 4th Global Congress on NanoEngineering for Medicine and Biology, Minneapolis, MN, Apr 19-22, 2015.
41. D Sweeney, E Latouche, P Robberts, E Schmelz, **R Davalos**. Interdigitated electrode to treat micro-metastases by high-frequency irreversible electroporation. BMES Annual Meeting, San Antonio, TX, Oct 22-25, 2014.
42. JW Ivey, EL Latouche, MB Sano, I Nakano, **RV Davalos**, SS Verbridge. 3D glioma platform for therapy-resistant cell targeting using high frequency electric fields. BMES Annual Meeting, San Antonio, TX, Oct 22-25, 2014.
43. A Rolong, KJ Prokop, PA Garcia, CB Arena, **RV Davalos**. Irreversible electroporation: Prostate and pancreatic cancer cell death threshold characterization. BMES Annual Meeting, San Antonio, TX, Oct 22-25, 2014.
44. J Cemazar, LM Anders, SD Cramer, **RV Davalos**. High throughput microfluidic separation of tumor initiating cells (TICs) using contactless dielectrophoresis. AIChE Annual Meeting, Atlanta, GA, Nov 16-21, 2014.

45. CB Arena, SP Bhonsle, MB Sano, **RV Davalos (invited speaker)**. Clinical Implications of Nanosecond-to-Microsecond Pulse Bursts for Irreversible Electroporation. 11th International Bioelectrics Symposium, Columbia, MO, October 13-16, 2014.
46. A Salmanzadeh, E Savage, PC Roberts, EM Schmelz, **R Davalos**. Studying the effects of Sphingolipid Metabolites on cells' dielectrophoretic properties using contactless dielectrophoresis. AIChE Annual Meeting, San Francisco, CA Nov 3-8, 2013.
47. MB Sano, RV Davalos, Electroporation of cells on chip using high frequency electric fields without electrode-sample contact. AIChE Annual Meeting, San Francisco, CA Nov 3-8, 2013.
48. M Bonakdar, P Garcia, **R Davalos**. Characterization of the permeability of the brain endothelium due to electroporation using a dynamic microengineered model. AIChE Annual Meeting, San Francisco, CA Nov 3-8, 2013.
49. PA Garcia, CB Arena, JH Rossmiesl Jr, **RV Davalos**. Biophysical Effects of Pulsed Electric Fields in the Brain. BMES Annual Meeting, Seattle, WA, Sep 25-28, 2013.
50. A Salmanzadeh, ES Elvington, M Bonakdar, PC Roberts, EM Schmelz, **RV Davalos**. Sphingolipid metabolites affect dielectrophoretic signature of syngeneic murine ovarian cancer cells. BMES Annual Meeting, Seattle, WA, Sep 25-28, 2013.
51. M Bonakdar, PA Garcia, **RV Davalos**. Blood-Brain Barrier on chip, Drug delivery enhancement by electroporation. BMES Annual Meeting, Seattle, WA, Sep 25-28, 2013.
52. LM Reese, P Garcia, **R Davalos**, P Shen, G Mishra, C Williams, L Bickford. Additive manufacture of minimally-invasive medical devices for pancreatic cancer treatment. BMES Annual Meeting, Seattle, WA, Sep 25-28, 2013.
53. MB Sano, CB Arena, PA Garcia, JM Cissell, JL Robertson, **RV Davalos**. Clinical investigation of high frequency irreversible electroporation for skin cancers. BMES Annual Meeting, Seattle, WA, Sep 25-28, 2013.
54. P Kyle, L Anders, J Cemazar, C Roberts, E Schmelz, **R Davalos**. The use of electrokinetic phenomena to characterize malignant cells. BMES Annual Meeting, Seattle, WA, Sep 25-28, 2013.
55. A Salmanzadeh, L Romero, SD Cramer, **RV Davalos (invited speaker)**. Enrichment of cancer stem cell populations based on their dielectrophoretic characteristics. MSB 2013, 29th International Symposium on MicroScale Bioseparations, Charlottesville, VA, Mar 10-14, 2013.
56. A Rolong, P Gatenholm, K Rodriguez, **RV Davalos (Invited speaker)**. Electrical manipulation of bacteria to control nanocellulose architecture for biomedical applications, CELL: Division of Cellulose and Renewable Materials - 1st International Symposium on Bacterial Nanocellulose, 245th ACS Annual Meeting, New Orleans, LA, Apr 7-11, 2013.
57. PA Garcia, RV Davalos (**invited**). Clinical progress in the use of irreversible electroporation for cancer therapy. BioEM 2013, Jun 10-14, Thessaloniki, Greece, 2013.

58. A Salmanzadeh, E Savage (speaker), PC Roberts, EM Schmelz, **RV Davalos (invited)**. Effects of non-toxic sphingolipid metabolites on ovarian cancer cells' dielectrophoretic characteristics using a microfluidic platform. Advances in Microfluidics and Nanofluidics 2013 conference (Special Session on Dielectrophoresis), University of Notre Dame, IN, May 24 - 26, 2013
59. A Salmanzadeh, L Romero, S Cramer, **RV Davalos (Keynote speaker)**. Isolation of Cancer Stem Cells (CSCs) based on their dielectrophoretic signature. 19th international Symposium on Electro- and Liquid Phase-separation Techniques (ITP 2012), Baltimore, MD, USA, Sep 30 - Oct 3, 2012.
60. MB Sano, MR DeWitt, CB Arena, **RV Davalos**. Irreversible electroporation using bursts of sub-microsecond pulses. BMES Annual Meeting, Atlanta, GA, Oct 24-27, 2012.
61. HJ Cho, J Aviles, CB Arena, S Dong, M Roman, **RV Davalos**, YW Lee. Effects of pulsed electric fields on brain microvascular endothelial cell monolayers. BMES Annual Meeting, Atlanta, GA, Oct 24-27, 2012.
62. CB Arena, CS Szot, PA Garcia, MN Rylander, **RV Davalos**. Development of tissue engineered tumors for treatment planning in electroporation-based therapies. BMES Annual Meeting, Atlanta, GA, Oct 24-27, 2012.
63. KR Colacino, A Callo, C Arena, S Dong, M Roman, **R Davalos**, Y Lee. Synergistically enhanced cytotoxic effect on cancer cells by irreversible electroporation and targeted cellulose nanocrystals. BMES Annual Meeting, Atlanta, GA, Oct 24-27, 2012.
64. A Salmanzadeh, M Bonakdar, MB Sano, L Romero, MA Stremmler, SD Cramer, **RV Davalos**. Investigating the Dielectrophoretic properties of human primary prostate cancer cells. BMES Annual Meeting, Atlanta, GA, Oct 24-27, 2012.
65. PA Garcia, CB Arena, CS Szot, **RV Davalos**. Electric field modeling in a 3D tissue engineered tumor treated with irreversible electroporation. BMES Annual Meeting, Atlanta, GA, Oct 24-27, 2012.
66. **RV Davalos (invited speaker)**. Recent advances in the use of irreversible electroporation for the treatment of brain cancer. Gordon Research Conference on Bioelectrochemistry, Lucca, Italy, July 1-6, 2012.
67. R Gallo, MB Sano, **RV Davalos**, BH Lapizco-Encinas. Joule heating effects on the dielectrophoretic force for iDEP devices. AIChE 2012 Annual Meeting, Pittsburg, PA, Oct 28-Nov 2, 2012.
68. A Salmanzadeh, M Bonakdar, MB Sano, L Romero, **RV Davalos**, SD Cramer. Investigating the electrical properties of prostate cancer cell lines using contactless dielectrophoresis. AIChE 2012 Annual Meeting, Pittsburg, PA, Oct 28-Nov 2, 2012. **(Poster Award)**
69. A Salmanzadeh, E Savage, MB Sano, MA Stremmler, PC Roberts, EM Schmelz, **RV Davalos**. Dielectrophoresis for characterizing electrical properties of mouse ovarian surface epithelial (MOSE) cells. AIChE 2012 Annual Meeting, Pittsburg, PA, Oct 28-Nov 2, 2012.
70. E Savage, MB Sano, A Salmanzadeh, EM Schmelz, **RV Davalos**. Multi-layer contactless dielectrophoresis using thin polyimide films, AIChE 2012 Annual Meeting, Oct 28-Nov 2, 2012.

71. MB Sano, **RV Davalos**. Investigation of the thermal and electrical impact of electric fields on mammalian cells manipulated using contactless dielectrophoresis. AIChE 2012 Annual Meeting, Pittsburg, PA Oct 28-Nov 2, 2012.
72. A Salmanzadeh, H Pendar, JJ Socha, MA Stremmler, **RV Davalos**. Studying flow control mechanisms in an insect respiratory system. BMES Annual Meeting, Hartford, CT, Oct 12-15, 2011.
73. PA Garcia, RE Neal II, CB Arena, **RV Davalos**. Dynamic conductivity changes due to irreversible electroporation for treatment planning. BMES Annual Meeting, Hartford, CT, Oct 12-15, 2011.
74. RE Neal, PA Garcia, CB Arena, J Robertson, **RV Davalos**. Experimental determination of electroporation conductivity change for cancer treatment planning. BMES Annual Meeting, Hartford, CT, Oct 12-15, 2011.
75. CB Arena, MB Sano, MN Rylander, JH Rossmeisler Jr, **RV Davalos**. Pilot study on irreversible electroporation with high frequency pulse trains. BMES Annual Meeting, Hartford, CT, Oct 12-15, 2011.
76. AD Rojas, E Schmelz, **RV Davalos**. Isolation of breast cancer cells based on metastatic phase using contactless dielectrophoresis. BMES Annual Meeting, Hartford, CT, Oct 12-15, 2011.
77. MB Sano, **RV Davalos**. Development of a three-dimensional contactless dielectrophoresis platform. BMES Annual Meeting, Hartford, CT, Oct 12-15, 2011.
78. A Salmanzadeh, H Kittur, RC Gallo-Villanueva, MB Sano, BH Lapizco-Encinas, MA Stremmler, EM Schmelz, **R Davalos**. Dielectrophoretic separation of mouse ovarian surface epithelium cells. AIChE Annual Meeting, Minneapolis, MN, Oct 16-21, 2011.
79. A Salmanzadeh, M Sano, H Shafiee, MA Stremmler, **RV Davalos**. Isolating cancer cells from blood using contactless dielectrophoresis (cDEP). AIChE Annual Meeting, Minneapolis, MN, Oct 16-21, 2011.
80. MB Sano, RC Gallo-Villanueva, H Kittur, **R Davalos**. Separation of particles using contactless dielectrophoresis and electrokinetic flow. AIChE Annual Meeting, Minneapolis, MN, Oct 16-21, 2011.
81. RC Gallo-Villanueva, VH Perez-Gonzalez, **R Davalos**, BH Lapizco-Encinas. Dielectrophoretic separation of particles in a multi-section device. AIChE Annual Meeting, Minneapolis, MN, Oct 16-21, 2011.
82. MB Sano, **R Davalos**. Design, development, and analysis of a multilayer contactless dielectrophoresis device to separate cancer cells from blood. AIChE Annual Meeting, Minneapolis, MN, Oct 16-21, 2011.
83. A Salmanzadeh, H Shafiee, M Sano, **R Davalos**. Mixing enhancement in microfluidic devices using contactless dielectrophoresis (cDEP). AIChE Annual Meeting (**Best poster**), Minneapolis, MN, Oct 16-21, 2011.

84. AD Rojas, **R Davalos**. Dielectrophoretic separation of cancer cells based on metastatic stage. AIChE Annual Meeting, Minneapolis, MN, Oct 16-21, 2011.
85. **R Davalos (invited)**, M Sano, A Rojas. Isolation of circulating tumor cells from dilute whole blood using contactless dielectrophoresis. 2011 38th Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) Conference, Reno, NV, Oct 2-6, 2011.
86. BH Lapizco-Encinas, RG Villanueva, H Moncada-Hernandez, VP Gonzalez, JL Baylon-Cariel, **R Davalos (invited)**, Development of insulator-based dielectrophoretic systems for handling bioparticles, 2011 38th Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) Conference, Reno, NV, Oct 2-6, 2011.
87. M Sano, H Shafiee, **RV Davalos**. Entrapment of human leukemia cells from blood using contactless dielectrophoresis. AIChE Annual Meeting, Salt Lake City, UT, Nov 7-12, 2010.
88. RE Neal II, PA Garcia, JH Rossmesl Jr, **RV Davalos**. Irreversible electroporation treatment planning techniques. BMES Annual Meeting, Austin, TX, Oct 6-9, 2010.
89. PA Garcia, JH Rossmesl Jr, **RV Davalos**. Treatment planning of irreversible electroporation for intracranial disorders. BMES Annual Meeting, Austin, TX, Oct 6-9, 2010.
90. MB Sano, E Henslee, H Shafiee, **RV Davalos**. Isolation of Circulating Cancer Cells From Dilute Whole Blood Samples Using Contactless Dielectrophoresis. BMES Annual Meeting, Austin, TX, Oct 6-9, 2010.
91. A Salmanzadeh-Dozdabi, H Shafiee, **RV Davalos**, MA Stremmler. Mixing Enhancement in Microfluidic Devices Utilizing Contactless Dielectrophoresis (cDEP). BMES Conference, Austin, TX, Oct 6-9, 2010.
92. PA Garcia, J Rossmesl Jr, T Ellis, J Robertson, **RV Davalos (invited)**. Non-thermal irreversible electroporation (N-TIRE) for intracranial malignant glioma in a canine patient. Electric Fields Effects in Tumors: Biophysical Foundations and Clinical Experiences. IEEE Engineering in Medicine and Biology Society, Buenos Aires, Argentina, Aug 31- Sep 5, 2010.
93. PA Garcia, **RV Davalos**. Cumulative visualization of a multiple-electrode irreversible electroporation treatment. Gordon Research Conference: Bioelectrochemistry, University of New England, MA, Jul 11-16, 2010.
94. PA Garcia, J Rossmesl Jr, T Ellis, J Robertson, **RV Davalos (invited)**. Non-thermal irreversible electroporation for intracranial disorders. 7th International Bioelectrics Symposium, Norfolk, VA, Jun 24-26, 2010.
95. **RV Davalos (invited)**, AD Rojas, MB Sano, P Gatenholm. Biofabrication with electrical control to create biocompatible materials. 239th ACS National Meeting and Exposition, San Francisco, CA, Mar 21-25, 2010.
96. AD Rojas, MB Sano, P Gatenholm, **RV Davalos**. Electrokinetic biofabrication of microbial cellulose-metal composites. 239th ACS National Meeting and Exposition, San Francisco, CA, Mar 21-25, 2010.

97. RE Neal II, R Singh, S Torti, **RV Davalos**. Tumor treatment using irreversible electroporation with a minimally invasive single needle electrode. *Electroporation Based Technologies and Treatments*, Ljubljana, Nov 16-21, pp 149, 2009.
98. PA Garcia, JH Rossmeisl Jr, JL Robertson, **RV Davalos**. Intracranial non-thermal irreversible electroporation: Electrical conductivity analysis. *Electroporation Based Technologies and Treatments*, Ljubljana, Nov 16-21, pp 151, 2009.
99. MB Sano, A Rojas, P Gatenholm, **RV Davalos**. Direct control of biological assembly using electrokinetic forces. *AIChE Annual Meeting*, Nashville, TN, Nov 8-13, p 72b, 2009.
100. **RV Davalos (invited)**, H Shafiee, JL Caldwell, MB Sano. Dielectrophoretic cell and microparticle manipulation without electrode-sample contact. 2009 36th Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) Conference, Louisville, KY, Oct 18-22, 2009.
101. RE Neal II, R Singh, S Torti, **RV Davalos**. The effect of heterogeneous tissue on electric field distribution when planning irreversible electroporation protocols. *Humboldt Kolleg on Nano-Bio: The Next Transformative Convergence*, Roanoke, VA, Oct 14-15, 2009.
102. RE Neal II, **RV Davalos**. The effect of heterogeneous tissue on electric field distribution when planning irreversible electroporation protocols. 2009 BMES Annual Meeting, Pittsburgh, PA, Oct 7-10, 2009.
103. MB Sano, **RV Davalos**. Contamination free cell identification and sorting using capacitive dielectrophoresis. 2009 BMES Annual Meeting, Pittsburgh, PA, Oct 7-10, 2009.
104. H Shafiee, JL Caldwell, MB Sano, **RV Davalos**. Contamination free cell identification and sorting using capacitive dielectrophoresis. 2009 BMES Annual Meeting, Pittsburgh, PA, Oct 7-10, 2009.
105. **RV Davalos (invited)**. Irreversible electroporation technology. *International Meeting of the Society for CNS Interstitial Delivery of Therapeutics (SCIDOT)*, Cleveland Clinic, Cleveland, OH, Sep 11-12, 2009.
106. H Shafiee, JL Caldwell, MB Sano, **RV Davalos**. Sample enrichment and cell separation using contactless dielectrophoresis. *GEM4 Summer School on Cellular and Molecular Mechanics*, Urbana Champaign, IL, Jun 8-19, 2009.
107. **RV Davalos (invited plenary speaker)**. Irreversible electroporation for cancer treatment. 45th Annual Meeting of the Society for Cryobiology, Charlotte, NC, Jul 20-23, *Cryobiology* vol 57(3), pp 318, 2008.
108. **RV Davalos (invited)**, TI Wallow, AM Morales, K Krafcik, BA Simmons. The application of insulator-based dielectrophoresis polymer microfluidic devices as particle separators and the impact of dynamic surface coatings on performance. *ASABE – An International Conference on Biological Sensors: Critical Technologies for Future Biosystems*, Minneapolis, MN, Jun 15-17, 2007.
109. BA Simmons, **RV Davalos**, AM Morales, K Krafcik, P Ponce, K Luongo. The application of insulator-based dielectrophoresis polymer microfluidic devices as particle separators and the impact

of dynamic surface coatings on performance. 2007 MRS Spring Meeting, San Francisco, CA, Apr 9-13, 2007.

110. AM Morales, BA Simmons, **RV Davalos**, LA Domeier, K Krafcik, B Mosier. Injection molded microfluidic devices for homeland security applications. Sensor Workshop 2007, Livermore, CA, Apr 3-4, 2007.
111. ES Lee, SS Bachelor, ZQ Iqbal, M Khine, **RV Davalos**. Knockdown of macrophage's signaling pathways using on-chip single cell micro-electroporation. Gordon Research Conference: Bioelectrochemistry, Aussios, France, Sep 3-8, 2006.
112. **RV Davalos**, GJ McGraw, Y Fintschenko, EB Cummings, BA Simmons. Insulator-based dielectrophoretic polymer microfluidic devices for particle separation and concentration. Gordon Research Conference: Bioelectrochemistry, Aussios, France, Sep 3-8, 2006.
113. **RV Davalos**, GJ McGraw, P Ponce, P Sabounchi, T Wallow, AM Morales, K Krafcik, GJ Fiechtner, Y Fintschenko, EB Cummings, BA Simmons. Insulator-based dielectrophoretic polymer microfluidic devices for particle separation and enrichment. 2006 Scientific Conference on Obscuration and Aerosol Research, Battelle Eastern Science and Technology Center, Aberdeen, Maryland, Jun 28-29, 2006.
114. **RV Davalos (invited)**, ES Lee, D Robinson, JL Rognien, CK Harnett, BA Simmons, CRB Ellis. A microfluidic platform for drug screening in a biologically relevant nanoenvironment. Nanotechnology: Commercialization of Drug Discovery, Delivery and Diagnostics, Strategic Research Institute, Cambridge, MA, Oct 3-4, 2005.
115. BA Simmons, Y Fintschenko, EB Cummings, **R Davalos**, GJ Fiechtner, GJ McGraw. Polymeric substrates for high-throughput separation and concentration of biological agents. Abstracts of Papers, 230th ACS National Meeting, Washington, DC, Aug 28-Sep 1, 2005.
116. EB Cummings (invited), BA Simmons, **RV Davalos**, GJ McGraw, BH Lapizco-Encinas, Y Fintschenko. Fast and selective concentration of pathogens by insulator-based dielectrophoresis. Abstracts of Papers, 230th ACS National Meeting, Washington, DC, Aug 28-Sep 1, 2005.
117. GJ McGraw, **RV Davalos**, JD Brazzle, J Hachman, M Hunter, J Chames, GJ Fiechtner, EB Cummings, Y Fintschenko, BA Simmons. Polymeric insulator-based dielectrophoresis (iDEP) for the monitoring of water-borne pathogens. ASPE, Columbus, OH, Apr 18-19, 2005.
118. GJ McGraw, **RV Davalos**, EB Cummings, Y Fintschenko, GJ Fiechtner, BA Simmons. Scalability of insulator-based dielectrophoresis (iDEP) and its utilization as a high-throughput particle concentrator. Polymer Preprints - ACS Division of Polymer Chemistry, vol 46(2), pp 1208, 2005.
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2. **RV Davalos**. Irreversible electroporation for tissue scaffolds. Provisional Application 61/125,840. Provisional Filed: 4/29/08, US Application 15/423,986 Issued 5/14/19 Patent No 10,286,108.
3. CB Arena, **RV Davalos**, MB Sano. High frequency electroporation for cancer therapy. US Application 13/332,133 PCT/US2011/066239. Filed 12/20/11, Issued 5/21/19, Patent No 10,292,755.
4. **RV Davalos**, PA Garcia, JH Rossmeisl. Methods for blood brain barrier disruption using electrical energy. US Application 15/424,335 Filed 2/3/17, Issued 4/30/19, Patent No 10,272,178.
5. **RV Davalos**, PA Garcia, JL Robertson, JH Rossmeisl, RE Neal. Electroporation with cooling to treat tissue. US Application 14/627,046 Filed 2/20/15, Issued 4/2/19, Patent No 10,245,105.
6. **RV Davalos**, PA Garcia, JH Rossmeisl. Acute blood-brain barrier disruption using electrical energy-based therapy. US Application 15/424,335 Filed 2/13/17, Issued 4/2/19, Patent No 10,245,098.
7. **RV Davalos**, T Douglas, J Cemazar. Contactless dielectrophoresis device with cell-size diameter insulating pillars. US Application 62/278,485. Filed: 1/14/16 Pending.
8. **RV Davalos**, PA Garcia, JH Rossmeisl. Immunotherapeutic methods using irreversible electroporation. US Application 15/881,414 Filed 1/26/18, Issued 12/18/18, Patent No 10,154,874.
9. **RV Davalos**, B Rubinsky. Tissue ablation with irreversible electroporation. US Application 14/639,632 Filed 3/5/15 Issued 11/6/18 Patent No 10,117,701.
10. PA Garcia, CB Arena, MB Sano, **RV Davalos**. System and method for estimating tissue heating of a target ablation zone for electrical-based therapies. US Application 14/558,631 Filed 12/2/14 Issued 11/6/18 Patent No 10,117,707.
11. **RV Davalos**, H Shafiee, MB Sano, JL Caldwell. Devices and methods for contactless dielectrophoresis for cell or particle manipulation. US Application 14/636,646 Filed: 3/3/15, Issued 9/18/18 Patent No 10,078,066.

12. MB Sano, **RV Davalos**, JL Robertson, PA Garcia, RE Neal. Irreversible Electroporation using tissue vasculature to treat aberrant masses or create tissue scaffolds. US Application 13/985,175 Filed 11/23/11 Issued 1/16/18 Patent No 9,867,652.
13. **RV Davalos**. Irreversible electroporation for tissue scaffolds. Provisional Application 61/125,840. Provisional Filed: 4/29/08, US Application 12/432,295 Issued 3/21/17 Patent No 9,598,691.
14. RE Neal, PA Garcia, **RV Davalos**, J Rossmeisl, JL Robertson. Treatment planning for electroporation-based therapies. Filed 10/18/10 US Application 12/906,923 Issued 12/1/15 Patent No 9,198,733.
15. **RV Davalos**, M Bonakdar, E Latouche, RL Mahajan, JL Robertson, CB Arena, MB Sano. Devices, system, and methods for real-time monitoring of electrophysical effects during tissue treatment. US Application 15/536,333. PCT/US2015/065792. Provisional Filed: 12/15/14, Filed 12/15/15, Pending.
16. PA Garcia, **RV Davalos**. System and method for estimating a treatment volume for administering electrical energy-based therapies. US Application 14/012,832 Filed 8/28/13 Issued 3/15/16 Patent No 9,283,051.
17. **RV Davalos**, B Rubinsky. Tissue ablation with irreversible electroporation. US Application 10/571,162 Filed 12/24/04 Issued 4/14/15 Patent No 9,005,189.
18. **RV Davalos**, CB Arena, JL Caldwell. Integration of very short electric pulses for minimally to noninvasive electroporation. US Application 12/757,901 Filed 4/9/10 Issued 1/6/15 Patent No 8,926,606.
19. MB Sano, **RV Davalos**, JL Robertson, RE Neal, PA Garcia. Irreversible electroporation using tissue vasculature to treat aberrant cell masses or create tissue scaffolds. US Application PCT/US2011/062067. Filed 11/23/11 Issued 1/16/18 Patent No 9,867,652.
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21. P Gatenholm, H Backdahl, TJ Tzavaras, **RV Davalos**, MB Sano. Three dimensional bioprinting of biosynthetic cellulose (BC) implants and scaffolds for tissue engineering. US Application 61/246,210. PCT/US2010/050460. Provisional Filed: 9/28/09, Filed 9/28/10 US Application 13/498,657 Filed 3/28/12 Issued 4/8/14 Patent No 8,691,974.
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23. **RV Davalos**, MN Rylander, CB Arena. Irreversible electroporation using nanoparticles. US Application 12/609,779. PCT/US2009/062806. Provisional Filed: 3/5/09, Filed: 10/30/09, Issued 6/18/13 Patent No 8,465,484.
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27. **RV Davalos**, B Rubinsky. Tissue ablation with irreversible electroporation. US Application 10/571,162. Filed: 12/24/04 Issued 11/1/11 Patent No 8,048,067.
28. **RV Davalos**, CRB Ellis. Vesicle-based method and apparatus for collecting, manipulating and chemically processing trace macromolecular species. US Application 10/914,991 Filed 8/9/04 Issued 8/17/10 Patent No 7,776,357.
29. **RV Davalos**, BA Simmons, RW Crocker, EB Cummings. Insulator-based DEP with impedance measurements for analyte detection. US Application 11/556,685. Filed: 11/3/06 Issued 3/16/10 Patent No 7,678,256.
30. **RV Davalos**, CRB Ellis. Vesicle-based method and apparatus for collecting, manipulating and chemically processing trace macromolecular species. US Application 10/914,991. Filed: 8/9/04 Issued 3/4/08 Patent No 7,338,796.

GRADUATE STUDENTS AND SELECTED AWARDS

1. **Paulo Garcia** (PhD BME, Fall 2010)
 Research Scientist, MIT, 16 - present
 Post-doc, Harvard-MIT, Prof. Cullen Buie, 13 - 15
 Virginia Tech KnowledgeWorks awards Tech Transfer Challenge prize, 12
 Paul E. Torgersen Student Research Excellence Award: Best PhD Presentation, 10
 26th Annual Research Symposium and Exposition Oral Competition: Second Place, 10
 SBES 9th Annual Graduate Student Research Symposium: Best Presentation, 10
 IEEE EMBS Student Paper Competition: **North American Finalist**, 09
2. **Hadi Shafiee** (PhD ESM, Fall 2010)
 Assistant Professor, Harvard Medical School
 Post-doctoral, Harvard-MIT, Prof. Utkan Demirci, 11 - 14
 F32 NIH Postdoctoral Fellowship, 12
 Paul E. Torgersen Student Research Excellence Award: PhD Finalist, 10
 26th Annual Research Symposium and Exposition Poster Competition: First Place, 10
 Liviu Librescu Memorial Scholarship, 09
 GEM⁴ - Cellular and Molecular Mechanics: U Illinois – Urbana Champaign: Best Poster, 09
3. **John Caldwell** (MS EECS, Spring 2010)
 Engineer, Leadership Development Program, Texas Instruments, 10-present
 Texas Instruments National Design Competition: First Place, 09
4. **Erin Henslee** (MS BME, Spring 2010)
 Assistant Professor, BME, Wake Forest University, 2018 - present
 Whitaker International Foundation Fellowship, 10-11
 Ph.D. University of Surrey, Biomedical Engineering
 Advisor: Prof. Michael P. Hughes
5. **Mike Sano** (MS ESM, Spring 2009, PhD SBES, Summer 2012)

- Assistant Professor, UNC – NC State, 17 - present
Post-doc, Stanford University, 14 – 17
DoD post-doctoral Fellowship, 15
Virginia Tech KnowledgeWorks awards Tech Transfer Challenge prize, 12
CEO, VoltMed LLC, Blacksburg, VA, 12-present
Paul E. Torgersen Graduate Student Research Excellence Award, 09
6. **Andrea Rojas** (MS MSE, Spring 2012)
Initiative for Maximizing Student Diversity (IMSD) NIH Fellowship, 10-11
Product Development, Terumo Medical Corporation, Elkton, MD, 16-present
Engineer, W.L. Gore & Associates, Elkton, MD, 12-15
 7. **Robert Neal II** (PhD SBES, Fall 2011)
Principal Engineer, Gala Therapeutics, Melo Park, CA 18 – present
Principal Engineer, Angiodynamics, Marlborough, MA 13 - 18
Virginia Tech Outstanding Dissertation Award, 12
Whitaker International Foundation Fellowship, 11
Paul E. Torgersen Student Research Excellence Award: Best Poster, 11
Post-doctoral, The Alfred Hospital, Melbourne Australia, Dr. Ken Thomson, 11 - 13
 8. **Elizabeth Savage** (MS BME, Spring 2013)
Consultant, Poly-Med, Inc. in Anderson, SC 13-present
MultiSTEPS IGEP Fellowship, 11-12
Interdisciplinary Research Symposium Poster Award, 12
Spotlight Speaker Chair, Interdisciplinary Research Honors Society, 12-13
 9. **Chris Arena** (PhD SBES, Spring 2013)
Collegiate Assistant Professor, BME, Virginia Tech, 17 – present
Assistant Professor, Elon University, 15 – 17
Post-doctoral Fellow, Biomedical Engineering, University of North Carolina, 13 – 15
Richard Skalak Award, ASME Journal of Biomechanical Engineering, 14
College of Engineering Graduate Student of the Year, 13
1st Place Podium Ph.D. Student Paper Competition, *ASME Summer Bioengineering Conference*, 12.
1st Place Virginia Tech KnowledgeWorks Tech Transfer Challenge, 12
Virginia Tech Graduate Student Assembly Travel Fund Program Award, 12
NSF John Chato Memorial Symposium Travel Award, 11
3rd Place Podium Ph.D. Student Paper Competition, *ASME Summer Bioengineering Conference*, 11
 10. **Alireza Salmanzadeh** (PhD ESM, Spring 2013)
Senior Engineer, BD Biosciences, San Jose, 16-present
Post-doc, University of California, Berkeley (Luke Lee), 14-15
Paul E. Torgersen Student Research Excellence Award: Best PhD Presentation, 13
Amir Chand and Dewki Bai Batra Scholarship, 13
Virginia Tech Graduate Man of the Year, 12
Outstanding Graduate Student Leader Award, 12
American Electrophoresis Society: Poster Award, 12
American Electrophoresis Society: Poster Award, 11
Virginia Tech Cancer Symposium: Co-Chair, 11
Manual Stein Scholarship, 10
 11. **Eduardo Latouche** (MS ESM, Spring 2016)
Paul E. Torgersen Student Research Excellence Award: Best MS Presentation, 15
BMES-FDA Frontiers in Medical Devices Conference: First runner up podium, 16
Senior Engineer, VoltMed, Blacksburg, VA 16 – present

12. **Matt DeWitt** (PhD SBES (Co-advisor), Summer 2016)
Senior R&D Engineer, Abbott, Charlottesville, VA, 17 -Present
Cunningham Doctoral Fellowship: 11-16
ASME Heat Transfer Conference: Invited Panelist on Thermal Medicine, 14
National Science Foundation (NSF) Graduate Research Fellowship(GRFP), 12-15
13. **Suyashree Bhonsle** (PhD ECE, 2017)
Electrical Engineer, Abbott, San Francisco Bay Area, 17 - present
David W. Francis and Lillian Francis Research Scholarship, Virginia Tech Graduate School, 16-17
Ellen E. Wade Graduate Studies Fellowship, Virginia Tech Graduate School, 15
14. **Mohammad Bonakdar** (PhD ME, Spring 2016)
Senior Engineer, Amgen, Cambridge MA, 18 - present
Paul E. Torgersen Student Research Excellence Award: Best PhD Presentation, 16
15. **Elisa Wasson** (PhD ME, Fall 2019)
Gold Poster Presentation, VT-GSA Symposium 18
NanoEngineering for Medicine and Biology Conference (NEMB), Honorable Mention (Poster), 15
Lawrence Livermore Graduate Scholar, 2018
Lawrence Livermore Student Intern Symposium, 1st Place (Poster), 18
Walts Fellowship, 17-18
National Science Foundation (NSF) Fellowship, 13-18
GEM University Fellow, 13-18
New Horizon Graduate Scholar, 13-18
ICTAS Doctoral Scholarship, 13-15
16. **Alexandra Hyler** (PhD BME (Co-advisor), Spring 2018)
Lead Research Scientist, CytoRecovery, Inc, Blacksburg, VA, 18-Present
Virginia Tech Graduate Student of the Year, 18
1st Place Talk Award, SBES Symposium, VT-WFU, 18
Gold Agent of Change Oral Presentation Award, GSA Symposium, 18
VT College of Engineering Diversity Fellow, 16-17
Fulbright Fellowship to Denmark, 15-16
Gold Poster Award, GSA Symposium, 15
NSF IGERT MultiSTEPS Program Trainee, 13-15
17. **Andrea Rolong** (PhD BME, Spring 2018)
Postdoctoral Research Associate, Vanderbilt University, 19 - present
MultiSTEPS NSF IGERT Traineeship, 13-15
18. **Dan Sweeney** (PhD BME, Spring 2018)
Postdoctoral Research Associate, Oak Ridge National Laboratories, 19-present
Postdoctoral Research Associate, University of North Carolina, NC 18-19
MultiSTEPS NSF IGERT Traineeship, 13-15
19. **Melvin Lorenzo** (PhD BME, Spring 2020)
Cunningham Fellowship, 16-20
AIMBE Public Policy Institute Travel Grant, 19
AngioDynamics Educational Travel Grant, 19
Doreen J. Putrah Cancer Research Foundation Travel Grant, 19
World Congress on Biomechanics 2018 Travel Grant, 18
2nd place NEMB ASME Student Poster Competition, 18
Pratt Fellow, 16
20. **Temple Douglas** (PhD BME, Fall 2018)
Postdoctoral Research Associate, University of Pennsylvania, 20 - present

- Postdoctoral Research Associate, Curie Institute, Paris, France, 19
 College of Engineering New Horizons Graduate Scholar, 16-18
 Herbert A Pohl Student Presentation Award, 16
 MultiSTEPS NSF IGERT Traineeship, 14-16
21. **Adwoa Baah-Dwomoo** (PhD MSE (Co-advisor), Spring 2018)
 Lead Engineer, W.L. Gore & Associates, Newark, DE, 18 - present
 MultiSTEPS NSF IGERT Traineeship, 12-15
 Edward A. Bouchet Graduate Honor Society Inductee, 18
 Black Female Graduate Student of the Year, 18
 Outstanding Student Leader of the Year, 18
 22. **Timothy O'Brien** (PhD BME, Spring 2019)
 Senior Research Engineer, Gala Therapeutics, Melo Park, CA
 PhD Paper Competition: 3rd Place Oral Presentation, World Congress of Biomechanics, 18
 Paul E. Torgersen Student Research Excellence Award: Best MS Poster Presentation, 15
 Paul E. Torgersen Student Research Excellence Award: 2nd Place Oral Presentation, 14
 23. **Philip Graybill** (PhD ME, Fall 2020)
 2nd Place Oral Presentation, 3rd World Congress on Electroporation, 19
 Best Scientific Image, 3rd World Congress on Electroporation, 19
 Royal Society of Chemistry Poster Award, 26th International Symposium on Electro-separation and Liquid Phase-Separation Techniques (ITP), 19
 MultiSTEPS IGEP Traineeship, 16-17
 24. **Natalie Beitel White** (PhD EE, Spring 2021)
 Bradley Graduate Fellow, 19-21
 Paul E. Torgersen Student Research Excellence Award: 1st Place MS Oral Presentation, 18
 NSF Graduate Research Fellowship Program Honorable Mention, 18
 William E. Webber Graduate Fellow, 16-18
 25. **Josie Duncan** (MS ME, Spring 2020)
 Davenport Leadership Scholar, 19
 Outstanding Oak Ridge Institute for Science and Education Fellow, 19
 26. **Kenneth Aycock** (PhD BME, Spring 2023)
 Pratt Fellow, 18

INTERNATIONAL DOCTORAL STUDENT EXCHANGES

1. Roberto Gallo-Villaneuva (2011, Advisor: Blanca Lapizco-Encinas) Tecnológico de Monterrey, Mexico
2. Bor Kos PhD (2014, Advisor: Damijan Miklavcic) University of Ljubljana, Slovenia
3. Tomi Murovec PhD (2014, Advisor: Christian Brosseau) Université de Brest, Brest, France
4. Claudia Irene Trainito PhD (2015, Advisor: Bruno Le Pioufle) Ecole Normale Supérieure de Cachan
5. Carlos Romero MS (2016, Advisor: Ruben Diaz) University of Puerto Rico at Mayaguez, United States
6. Yajun Zhao PhD (2016-18, Advisor: Chenguo Yao) Chongqing University, China
7. Borja Mercadal PhD (2018, Advisor: Antoni Ivorra) Universitat Pompeu Fabra, Barcelona, Spain
8. Alejandro Rodríguez Pena PhD (2018, Advisor: Carlos Ortiz de Solórzano) CIMA, Universidad de Navarra, Pamplona, Spain
9. Adriana Leticia Vera (2019, Advisor: Arturo Hernandez) Instituto Politécnico Nacional, Mexico
10. Hongmei Liu PhD (2019-20, Advisor: Chenguo Yao) Chongqing University, China

INTERNATIONAL DISSERTATION COMMITTEE

1. Dennis Pavilha (2012, Advisor: Damijan Miklavcic), University of Ljubljana, Slovenia
2. Mette Linnert Jensen (2013, Advisor: Julie Gehl) Copenhagen University Hospital Herlev, Denmark

3. Giacomo Bruno (2017, Advisors: Demarchi and Grattoni) Houston Methodist & Politecnico di Torino
4. Quim Castellei (2017, Advisors: A. Ivorra, B. Bijens) Universitat Pompeu Fabra, Barcelona (Chair)