Michelle R. Dawson, Ph.D.

Assistant Professor of Biomedical Sciences
Molecular Biology, Cell Biology, and Biochemistry (MCB)
Brown University

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Google Scholar: https://scholar.google.com/citations?user=_u4XlD0AAAAJ&hl=en

ACADEMIC APPOINTMENTS

Assistant Professor, July 2016 – current
Molecular Biology, Cell Biology, and Biochemistry, Brown University
School of Engineering, Brown University
Faculty Trainer: MPP, MCB, BME, PLM, MMI, BRRTP

Assistant Professor, November 2008 – June 2016
School of Chemical & Biomolecular Engineering, Georgia Institute of Technology (GT)
Faculty appointments: Petit Institute for Bioengineering & Bioscience, Bioengineering Graduate Program, Wallace H. Coulter Department of Biomedical Engineering, School of Biology

Postdoctoral Research Fellow, June 2005 – October 2008
Massachusetts General Hospital, Harvard Medical School, and Edwin L. Steele Lab
Advisor: Rakesh K. Jain

EDUCATION

Ph.D. Chemical and Biomolecular Engineering, January 2000 – May 2005
Johns Hopkins University, Baltimore, MD, May 2005. Advisor: Justin Hanes.
Ph.D. Thesis: Mucosal Barriers to Non-Viral Gene Delivery in the Cystic Fibrotic Lung.

B.S. Biomedical Engineering, Louisiana Tech University, Ruston, LA, May 1999

PUBLICATIONS (H-INDEX ~ 24; CITATIONS 2950)

Books and Special Issues

1. Dawson M (2022). Special Issue: Molecular and Cellular Heterogeneity in an Evolving Tumor Landscape: When Diversity Gives Rise to Aggressive and Drug Resistant Cells. Cancers. Guest edited by Michelle Dawson.

2. Dawson M (2022). Engineering and Physical Approaches to Cancer. Book Series: Current Cancer Research. Springer Publishing. Co-Edited by Michelle Dawson and Ian Wong.

Book Chapters

1. Dawson M, Xuan B, Hsu J, Ghosh D (2020). Force balancing ACT-IN the Tumor Microenvironment: Cytoskeletal Modifications in Cancer and Stromal Cells to Promote Malignancy. IRCMB: Actin Cytoskeleton in Cancer Progression and Metastasis – Part B Volume 356. Edited by Clement Thomas and Lorenzo Galluzzi, Elsevier Publishing.
2. Ghosh D, Dawson M (2018). Microenvironment Influences Cancer Cell Mechanics from Tumor Growth to Metastasis. Biomechanics in Oncology, 69-90. Advances in Experimental Medicine and Biology, Volume 1092. Edited by Konstantopoulos, Dong, and Kuhn. Springer Publishing.
3. Dawson M, Ghosh D (2016). Mucosal Barriers. Drug Delivery Across Physiological Barriers. Edited by Silvia Muro 155-180, Pan Stanford Publishing.
4. Dawson M, Tseng Y, Lee J, McAndrews K (2014). Intracellular Particle Tracking Rheology. Handbook of Imaging in Biological Mechanics. Edited by Corey Neu and Guy Genin, 381-388, CRC Press.
5. Hanes J, Dawson M, Har-el Y, Suh J, Fiegel J (2003). Gene delivery to the lung. Pharmaceutical Inhalation Aerosol Technology, Edited by AJ Hickey, 2nd Ed., 489-539. Marcel Dekker Incorporated.

Refereed Journal Articles

1. Lee A, Ghosh D, Koh I, Dawson M (2022). Senescence-Associated Exosomes Transfer MiRNA-Induced Fibrosis to Neighboring Cells. Submitted to Aging.
2. Lee A, Koh L, Dawson M (2022). Review: The Role of Exosome Heterogeneity in Epithelial Ovarian Cancer. Submitted to Advances in Cancer Biology: Metastasis.
3. Lee A, Mejia Pena C, Dawson M (2022). Review: Differences between the Secretomes of Chemo-refractory and Chemo-resistant Ovarian Cancer Populations. Revised manuscript submitted to Cancers.
4. Xuan B, Ghosh D, Dawson M (2021). Contribution of the Distinct Biophysical Phenotype of PGCCs to Cancer Progression. Seminars in Cancer Biology, S1044-579X (21), 00144-9.
5. Xuan B, Ghosh D, Jiang J, Shao R, Dawson M (2020). Vimentin Filaments Drive Migratory Persistence in Polyploidal Cancer Cells. Proceedings of the National Academy of Sciences 117 (43), 26756-65.
6. Lee AH, Ghosh D, Quach N, Schroeder D, Dawson M (2020). Ovarian Cancer Exosomes Trigger Differential Biophysical Response in Tumor-Derived Fibroblasts. Scientific Reports 10 (1), 1-16.
7. Ghosh D, Pena CM, Quach N, Xuan, B, Lee, A, Dawson M (2020). Senescent mesenchymal stem cells remodel extracellular matrix driving breast cancer cells to a more-invasive phenotype. Journal of Cell Science 133 (2):1-12.
8. Quach N, Kaur, S, Eggert M, Ingram L, Ghosh D, Sheth S, Nagy T, Dawson M, Arnold R, Cummings B (2019). Paradoxical Role of Glypican-1 in Prostate Cancer Cell and Tumor Growth. Scientific Reports 9 (1), 1-15.
9. Xuan B, Ghosh D, Cheney E, Clifton E, Dawson M (2018). Dysregulation in Actin Cytoskeletal Organization Drives Increased Stiffness and Migratory Persistence in Polyploidal Giant Cancer Cells. Scientific reports 8 (1), 1-13.
10. Ali M, Wu Y, Ghosh D, Do B, Chen K, Dawson M, Fang N, Sulchek T, El-Sayed M (2017). Gold Nanoparticles trapped at Nucleus Membrane Enhance the Nuclear Stiffness Causing Inhibition of

Cancer Cell Migration, Invasion, and Motility by Modifying Nuclear Lamin A/C Protein. ACS Nano 11: 3716-26.

11. Ghosh D, McGrail D, Dawson M (2017). TGF-β1 Pretreatment Improves the Function of Mesenchymal Stem Cells in the Wound Bed. Microenvironment Derived Stem Cell Plasticity. Frontiers in Cell and Developmental Biology 5: 28.
12. McAndrews K, Yi J, McGrail D, Ravikumar N, Dawson M (2015). Mesenchymal Stem Cells Induce Directional Migration of Invasive Breast Cancer Cells through TGF-β. Scientific Reports 5: 16,941.
13. McGrail D, Patel K, Khambati N, Pithadia K, Dawson M (2015). Utilizing Temporal Variations in Chemotherapeutic Response to Improve Breast Cancer Treatment Efficacy. AIMS Bioengineering 2(4): 310-23.
14. McGrail D, McAndrews K, Brandenburg C, Ravikumar N, Kieu Q, Dawson M (2015). Osmotic regulation is required for cancer cell survival under solid stress. Biophysical Journal 109(7): 1334-7.
15. McAndrews K, Yi J, McGrail D, Dawson M (2015). Enhanced Adhesion of Stromal Cells to Invasive Cancer Cells Regulated by Cadherin 11. ACS Chemical Biology 10(8):1932–38.
16. McGrail D, Kieu Q, Iandoli J, Dawson M (2015). Actomyosin Tension as a Determinant of Metastatic Cancer Mechanical Tropism. Physical Biology 12(2):026001. Featured article.
17. McGrail D, Qi M, Khambhati N, Patel, K, Dawson M (2015). Alterations in Ovarian Cancer Cell Adhesion Drive Taxol Resistance by Increasing Microtubule Dynamics in a FAK-dependent Manner. Scientific Reports 5:9529.
18. McGrail D, Kieu M, Mezencev R, McDonald J, Dawson M (2015). SNAIL-induced epithelial-to-mesenchymal transition produces concerted biophysical changes from altered cytoskeletal gene expression. FASEB J 29(4):1280-9.
19. Datla S, McGrail D, Lyle A, Pounkova L, Hilenski1 L, Dawson M, Lassègue B, and Griendling K (2014). Poldip2 Controls Vascular Smooth Muscle Cell Migration by Regulating Focal Adhesion Turnover and Polarization. Applied Journal of Physiology 307 (7): H945-57.
20. McAndrews K, McGrail D, Quach N, Dawson M (2014). Spatially coordinated changes in intracellular rheology and extracellular force exertion during mesenchymal stem cell differentiation. Physical Biology 11: 056004.
21. McAndrews K, Kim F, Lam T, McGrail D, Dawson M (2014). Architectural and Mechanical Cues Direct Mesenchymal Stem Cell Interactions with Cross-Linked Gelatin Scaffolds. Tissue Engineering Part A, 20(23-24):3252-60.
22. McGrail D, Kieu Q, Dawson M (2014). The Malignancy of Metastatic Ovarian Cancer Cells is Increased on Soft Matrices Through a Mechanosensitive Rho-ROCK Pathway. Journal of Cell Science 127, 2621-2626. Featured on the Cover.
23. Ghosh D, Lilli L, McGrail D, Matyunina L, McDonald J, Dawson M (2014). TGF–β1 Induced Stiffening of Mesenchymal Stem Cells Depends on PDGF-BB Signaling, Stem Cells and Development 23(3): 245-61.
24. Don-Salu-Hewage1 A; Chan A; McAndrews K; Chetram M; Dawson M; Bethea D; Hinton C (2013). Cysteine (C)-X-C Receptor 4 Undergoes Transportin 1-Dependent Nuclear Localization and is Functional at the Nucleus of Metastatic Prostate Cancer Cells, PLoS ONE 7 (8): e57194.
25. McGrail D, McAndrews K, Dawson M (2013). Biomechanical Analysis Predicts Decreased Human Mesenchymal Stem Cell Function before Molecular Differences, Experimental Cell Research 319: 684-696.
26. McGrail D, Ghosh D, Quach N, Dawson M (2012). Differential Mechanical Response of Mesenchymal Stem Cells and Fibroblasts to Tumor-Secreted Soluble Factors, PLoS ONE 7 (3): e33248.

27. Suk, JS, Lai S, Dawson M, Boylan, N, Boyle M, Hanes J (2011). Rapid transport of muco-inert nanoparticles in CF sputum treated with NAC, Nanomedicine 6 (2): 365-75.
28. Dawson M, Chae S, Jain RK, Duda D (2011). Cell Lineage-dependent Effects of Bone Marrow Stromal Cells on Tumor Progression, American Journal of Cancer Research 1(2):144-154.
29. Kozin, SV, Kamoun, WS, Huang, Y, Dawson, M, Jain, RK, Duda, DG (2010). Rapid macrophage infiltration after local irradiation facilitates tumor re-growth whereas TEMs and not EPCs recruitment facilitates relapse of irradiated tumors, Cancer Research 70(14): 5679-85.
30. Dawson M, Duda D, Chae S, Fukumura D, Jain RK (2009). VEGFR1 activity modulates myeloid cell infiltration in growing lung metastases but is not required for spontaneous metastasis formation, PLoS ONE 4(9): e6525.
31. Tang B, Dawson M, Lai S, Wang YY, Suk, JS, Yang M, Zeitlin P, Boyle M, Fu J, Hanes J (2009). Biodegradable polymer nanoparticles that rapidly penetrate the human mucus barrier, Proceedings of the National Academy of Sciences 106(46):19268-73. Featured on the Cover (>407 citations).
32. Dawson M, Duda D, Fukumura D, Jain RK (2009). VEGFR1-activity independent metastasis formation, Nature 461: E4.
33. Perentes JY, McKee TD, Ley CD, Mathiew H, Dawson M, Padera TP, Munn LL, Jain RK, Boucher Y. In vivo imaging of extracellular matrix remodeling by tumor-associated fibroblasts, Nature Methods, 6(2):143-5 (2009).
34. Suh J, Dawson M, Hanes J. (2005). Real-time particle tracking: Applications to drug and gene delivery, Advanced Drug Delivery Reviews 57:63-78.
35. Dawson M, Krauland E, Wirtz D, Hanes J. (2004). Transport of polymeric nanoparticle gene carriers in gastric mucus, Biotechnology Progress, 20(3):851-857.
36. Dawson M, Wirtz D, and Hanes J. (2003). Enhanced viscoelasticity of human cystic fibrotic sputum correlates with increasing microheterogeneity in particle transport, Journal of Biological Chemistry, 278:50393-50401.

Abstracts (National/International Meetings)

1. Lee A, Ghosh D, Quach N, Dawson M (2020). Heterogeneity in Ovarian Cancer Exosomes Orchestrates Diverse Biophysical Changes in Tissue Fibroblasts to Trigger Malignancy, November 16, 2020, American Society for Extracellular Vesicles (AL Poster).
2. Lee A, Ghosh D, Quach N, Schroeder D, Dawson M (2020). Single-Cell Derived Exosome Heterogeneity Promotes Invasive Fibroblast Phenotype in Epithelial Ovarian Cancer, October 18, 2020, Carnegie Mellon Forum on Biomedical Engineering and Annual Symposium of International Academy of Medical and Biological Engineering (AL Poster).
3. Pena CM, Skipper T, Hsu J, Schechter I, Dawson M (2020). Investigating Ovarian Cancer Progression within a Spatially and Temporally Controlled Organoid Model, June 24, 2020, Virtual New England Science Symposium (CM Poster).
4. Lee A, Ghosh D, Quach N, Dawson M (2020). Heterogeneity in Ovarian Cancer Exosomes Orchestrates Diverse Biophysical Changes in Tissue Fibroblasts to Trigger Malignancy, June 24, 2020, Virtual New England Science Symposium (AL Presentation, 3rd Place Oral Presentation Award).
5. Ghosh D, Quach N, Pena CM, Xuan B, Lee A, Dawson M (2019). Mesenchymal Stem Cell Aging and Senescence Associated Extracellular Matrix Contributions to Breast Cancer Progression, October 16-19, 2019, Philadelphia, PA. Biomedical Engineering Society Annual Meeting (DG Presentation).

6. Xuan B, Ghosh D, Jiang J, Dawson M (2019). Targeting Chemoresistant PGCCs through Disruption of Osmotic Stress Response, October 16-19, 2019, Philadelphia, PA. Biomedical Engineering Society Annual Meeting (BX Presentation).
7. Lee A, Ghosh D, Quach N, Dawson M (2019). Ovarian Cancer Exosome Heterogeneity Differentially Triggers Biophysical Changes in Ovarian Cancer Stromal Cells, October 16-19, 2019, Philadelphia, PA. Biomedical Engineering Society Annual Meeting (AL Presentation).
8. Pena CM, Hsu J, Skipper T, Dawson M (2019). Development of a Novel 3D Organoid Model to Investigate the Role of Matrix Remodeling on Ovarian Cancer Progression and Metastasis, October 16-19, 2019, Philadelphia, PA. Biomedical Engineering Society Annual Meeting (CMP Presentation).
9. Skipper T, Pena CM, Dawson M (2019). Modeling the Ovarian Cancer Microenvironment with Alginate-Gelatin Microspheres, October 16-19, 2019, Philadelphia, PA. Biomedical Engineering Society Annual Meeting (TS Presentation).
10. Beland M, Ghosh D, Dawson M (2019). Combining Shear Wave Ultrasound Elastography and Single Cell Biophysical Analysis to Highlight Differences in Tumor Phenotype and Heterogeneity. Radiological Society of North America Annual Meeting (MB Presentation).
11. Pena CM, Hsu J, Skipper T, Dawson M (2019). Development of a Novel 3D Organoid Model to Study Epithelial Ovarian Cancer Growth and Matrix Invasion, April 6, 2019, Boston, MA. New England Science Symposium (CMP Poster Presentation).
12. Ghosh D, Quach N, Pena CM, Xuan B, Lee A, Dawson M (2019). Mesenchymal Stem Cell Aging and Senescence Associated Extracellular Matrix Contributions to Breast Cancer Progression, February 9-10, 2019, Galveston, TX. Gordon Research Conference: Physics of Cancer (MD Podium Presentation).
13. Dawson M, Ghosh D (2018). Cellular Senescence Alters Tumor Microenvironment Interactions Forcing Cancer Progression. Gordon Research Conference: Signal Transduction by Engineered Extracellular Matrices, July 22-27, 2018, Andover, NH (MD Poster Presentation).
14. Dawson M, Ghosh D, Xuan B (2018). Biophysics of Giant Polyploidal Cancer Cells that Form in an Aging Tumor Stroma. Cellular and Molecular Bioengineering (CMBE) Conference, January 2-6, 2018, Key Largo, FL (MD Poster Presentation).
15. Dawson M, Xuan B, Ghosh D (2018). Biophysics of polyploidal cancer cells in an aging stroma. Cancer Research 78 (13 Supplement), 1315-1315 (MD Poster Presentation).
16. Bedoya S, Ghosh D, Dawson M (2018). Mechanosensitivity Analysis of Breast Cancer Tumor Cells from Needle Biopsy. FASEB JOURNAL 32, 1 (SB Poster Presentation).
17. Quach N, Eggert M, Ghosh D, Dawson M, Arnold R, Cummings B (2017). Glypican-1: A tumor suppressor or an oncogene in human bone metastatic prostate cancer cells. Cancer Research 77 (13 Supplement), 4465-4465 (NQ Poster presentation).
18. Dawson M (2016). Modeling the tumor microenvironment with nanostructured material. Nanotechnology in medicine: from molecules to humans. ECI Symposium Series (MD Podium presentation).

56 abstracts prior to joining Brown faculty

Abstracts (Local Meetings)

1. Lee A (2020). Exosomes Mediate Biophysical Changes in the Ovarian Cancer Tumor Microenvironment, August, 2020, Stem Cells and Aging Center for Biomedical Research Excellence (COBRE) at Brown University (AL Presentation).

2. Pena CM, Skipper T, Hsu J, Dawson M (2019). Development of a Novel 3D Organoid Model to Investigate the Role of Matrix Remodeling on Ovarian Cancer Progression and Metastasis. Annual Nabrit Conference for Early Career Scholars, Brown University (CMP Poster).
3. Pena CM, Dawson M (2019). Development of a novel 3D organoid model to study epithelial ovarian cancer growth and matrix invasion. Molecular Biology, Cell Biology, and Biochemistry, Brown University (CMP Podium).
4. Pena CM, Dawson M (2018). Development of a novel 3D organoid model to study epithelial ovarian cancer growth and matrix invasion. Molecular Biology, Cell Biology, and Biochemistry, Brown University (CMP Poster).
5. Hsu J, Pena CM, Lee A, Quach N, Ghosh D, Dawson M (2018). Characterizing Putative Epithelial-to-Mesenchymal Transition Phenotype of Ovarian Cancer Spheroids in Three-Dimensional Hydrogel Scaffolds. Brown Summer Research Symposium, Brown University.
6. Gibbs S, Quach N, Dawson M (2018). Enhancing Therapeutic Efficacy of Platinum Based Drugs by Pharmacologically Inhibiting PARP in Ovarian Cancer. Brown Summer Research Symposium, Brown University.
7. Pena CM, Dawson M (2017). Pathways to Chemoresistant Ovarian Cancer: Microenvironmental Regulation of FAK-Based Adhesion. Molecular Biology, Cell Biology, and Biochemistry, Brown University.
8. Clifton E, Xuan B, Ghosh D, Dawson M (2017). SASP-induced polyploidy and nuclear enlargement: a potential system of chemotherapeutic resistance. Brown Summer Research Symposium, Brown University.
9. Soriano K, Ghosh D, Dawson M (2017). Effects of Substrate Elasticity on Malignancy and Chemotherapeutic Resistance. Brown Summer Research Symposium, Brown University.
10. Skipper T, Ghosh D, Dawson M (2017). Alginate hydrogels for 3-D cell culture applications. Brown Summer Research Symposium, Brown University.
11. Acero S, Ghosh D, Dawson M (2017). Mechanosensitivity analysis of breast cancer tumor cells from needle biopsy. Brown Summer Research Symposium, Brown University.
12. Xuan B, Ghosh D, Dawson M (2017). Investigating the Effect of the Senescence Associated Secretory Phenotype on Tumor Progression. First Year Molecular Pharmacology and Physiology Talks, Brown University.

24 abstracts prior to moving to Brown University

Other Publications and Creative Products

1. **Research Highlights,** Brown researchers pinpoint protein important to enlarged, chemoresistant cancer cells, The Brown Daily Herald. Picked up by social media. November 16, 2020.
2. **Research Highlights,** Study discovers potential target for treating aggressive cancer cells, Brown.edu. Brown researchers pinpoint protein important to enlarged, chemoresistant cancer cells, The Brown Daily Herald. Picked up by social media. October 22, 2020.
3. **Research Highlight**, Cellular senescence and breast cancer – a role for ECM remodelling? Journal of Cell Science 2020 133: e0202. January 23, 2020.
4. **Press Release,** Article featured in Brown Medicine, Brown Daily Herald, BioPortfolio, EurekAltert, R&D, Science Daily, Long Room, Drug Discovery and Development, Medical News, and so forth, Article titled,

"Dysregulation in Actin Cytoskeletal Organization Drives Increased Stiffness and Migratory Persistence in Polyploidal Giant Cancer Cells." August 9, 2018.

External presentations

1. **Invited talk**, International Cancer Research Symposium, Physical and Metabolic Landscape of Polyploidal Giant Cancer Cells. December 14, 2021 (virtual).
2. **Invited talk,** Johns Hopkins University Bloomberg School of Public Health, Department of Biochemistry and Molecular Biology Seminar, Baltimore, MD. Polyploidal Giant Cancer Cell Metabolism. November 15, 2021 (virtual).
3. **Invited talk,** Boston University, Multiscale and Translational Mechanobiology Symposium. Metabolic Reprogramming Drives Physical Alterations in Invasive Cancer Cells, November 5, 2021 (in person).
4. **Invited talk,** Texas A&M University, Graduate Student Biomedical Engineering Seminar, College Station, TX. Using Physical Models of the Tumor Microenvironment to Identify Invasive Cancer Cells. January 28, 2021 (virtual).
5. **Invited talk,** AIChE Annual Meeting, Area 15D/E Engineering Fundamentals in Life Sciences, Cancer Bioengineering. Using Physical Models of the Tumor Microenvironment to Identify Invasive Cancer Cells. November 16-20, 2020 (virtual).
6. **Invited talk,** Howard University College of Medicine, Department of Physiology and Biophysics Seminar, Washington, DC. Using Physical Models of the Tumor Microenvironment to Identify Invasive Cancer Cells. October 12, 2020 (virtual).
7. **Invited panelist,** 6th Annual Research Breakfast, American Cancer Society Cancer Action Network of Rhode Island, Providence, RI. November 15, 2019.
8. **Invited panelist,** Writing Successful Grant Proposals in STEM, Conference of the Ford Fellows, San Juan, Puerto Rico. October 5, 2019.
9. **Invited talk,** University of Vermont, Graduate Student Biomedical Engineering Seminar, Burlington, VT. Physical Models of the Tumor Microenvironment Reveal Rare Subpopulations of Invasive Cells. April 12, 2019.
10. **Invited talk,** University of Rhode Island, Amgen Seminar Series in Chemical Engineering, West Greenwich, RI. Tumor Micorenvironment Interactions: Forcing Cancer Progression. February 22, 2018.
11. **Invited participant**, UC San Diego NSF INCLUDES Conference, San Diego, CA. Collective Impact as a Pathway to Reinvigorate Broadening Participation in STEM, January 20-22, 2017.
12. **Invited talk**, 2016 Engineering Conference International (ECI), Vienna, Austria. Conference Theme: Nanotechnology in Medicine - From Molecules to Humans. Session 6: Nanostructures for Cell Adhesion, Growth, Motility, and Differentiation. Modeling the Tumor Microenvironment with Nanostructured Materials. July 7, 2016.

28 talks prior to moving to Brown University

Internal presentations

1. **Invited talk,** Gynecological Cancer Translational Research Disease Group, Polyploidal Giant Cancer Cells Metabolic Reprogramming. Brown University, Providence, RI. December 9, 2021**.**

2. **Invited talk,** Breast Cancer Translational Research Disease Group, Breast Cancer Tumor Microenvironment Interactions Forcing Cancer Progression. Brown University, Providence, RI. September 10, 2019.
3. **Invited talk,** Gynecological Cancer Translational Research Disease Group, Ovarian Tumor Microenvironment Interactions Forcing Cancer Progression. Brown University, Providence, RI. November 11, 2019**.**
4. **Invited short talk,** Undergraduate Research and 5th Year Master's Opportunities in Cellular and Molecular Therapeutics, MPP DIAP Committee Event, Brown University, Providence, RI. October 25, 2019.
5. **Invited talk,** 2019 MCB Graduate Program Retreat, Tumor Microenvironment and Cancer Progression. August 30, 2019.
6. **Invited talk,** Cancer Biology Group Meeting, Tumor Microenvironment Interactions Forcing Cancer Progression. September 13, 2019.
7. **Invited talk,** Breast Cancer Translational Research Disease Group, Biophysical Analysis of Patient Tumor Samples. September 10, 2019.
8. **Invited talk,** Stem Jazz, Tumor Microenvironment Interactions: Stromal Cell Aging and Breast Cancer Progression. December 6, 2018.
9. **Invited talk,** 2018 MCB Fall Seminar Series**,** Tumor Micoenvironment Interactions: Forcing Cancer Progression. November 28, 2018.
10. **Invited talk,** BIOL 0100 Guest Speaker, Biophysics of Polyploidal Giant Cancer Cells, November 1, 2018.
11. **Research overview,** 2018 Molecular Cell Biology Faculty on Parade**,** Using Single Cell Biophysics to Understand Cancer. October 4, 2018.
12. **Research overview,** 2018 Molecular Pharmacology and Physiology Breakfast Talk**,** Dawson Cell Biophysics Lab. October 24, 2018.
13. **Invited talk,** 2018 Women & Infants Pathology Department Seminar**,** Tumor Microenvironment Interactions: Forcing Cancer Progression. March 27, 2018.
14. **Invited talk,** 2018 Ovarian Cancer Research Group Seminar (working group includes researchers and clinicians from Brown University, Rhode Island Hospital, and Women & Infants Hospital)**,** Tumor Microenvironment Interactions: Forcing Cancer Progression. February 26, 2018.
15. **Invited talk,** 2018 MCB Fall Seminar Series**,** Tumor Micoenvironment Interactions: Forcing Cancer Progression. November 28, 2018.
16. **Research overview,** 2017 Molecular Cell Biology Faculty on Parade**,** Using Single Cell Biophysics to Understand Cancer. October 24, 2017.
17. **Research overview,** 2017 Molecular Pharmacology and Physiology Breakfast Talk**,** Dawson Cell Biophysics Lab. September 19, 2017.
18. **Invited talk,** 2017 Biology of Aging Retreat, Biophysics of Giant Polyploidal Cancer Cells in an Aging Stroma, November 4, 2017.
19. **Invited talk,** 2017 Graduate Students of Color Orientation, Focusing Your Professional Activities to Build a Strong CV, August 28, 2017.
20. **Invited talk,** 2017 Molecular Pharmacology and Physiology Graduate Program Retreat, Biophysics of Cancer Progression. May 3, 2017.
21. **Research overview,** 2016 Molecular Cell Biology Faculty on Parade**,** Using Single Cell Biophysics to Direct Therapy. October 25, 2016.

22. **Invited talk,** 2016 BME Fall Seminar Series**,** Mechanics and Malignancy: Biophysics of Cancer. October 27, 2016.
23. **Invited talk,** 2016 Rhode Island Hospital Orthopaedics Research Seminar**,** Using Single Cell Biophysical Analysis to Understand Cancer. October 26, 2016.
24. **Invited talk,** 2016 MMI Fall Seminar Series**,** Mechanics and Malignancy: Biophysical Approach to Understanding Cancer. September 29, 2016.
25. **Invited talk,** 2016 MCB Fall Seminar Series**,** Using Single Cell Biophysics to Understand Cancer. September 28, 2016.
26. **Invited talk,** 2016 Rhode Island Hospital Pathology Seminar Series**,** Using Single Cell Biophysics to Understand Cancer. September 27, 2016.
27. **Research overview,** 2016 Pathobiology Faculty on Parade**,** Dawson Cell Biophysics and Engineering Lab. September 21, 2016.
28. **Research overview,** 2016 Molecular Pharmacology and Physiology Breakfast Talk**,** Dawson Cell Biophysics and Engineering Lab. September 14, 2016.

Other Scholarly and Creative Accomplishments

US Patent: Hanes J, Dawson M, Wirtz D, Fu J, Krauland E, Drugs and gene carrier particles that rapidly move through mucus barriers. Application number 10,587,512 (submitted in 2005). Patent Number 8,957,034 (finalized in 2015). Patent 15988615 (published in 2018).

Honors and Awards

American Association for Cancer Research Minority and Minority Serving Institution Faculty Scholar in **Cancer Research Award**, 2018
Women in Engineering (WIE) **Teaching Excellence Award**, 2013
Georgia Tech Junior Faculty Outstanding Undergraduate **Research Mentor Award**, 2013
Georgia Cancer Coalition **Breast Cancer Research Award**, 2009
Carl Storm Minority Fellowship for Gordon Research Conference Attendance, 2007
Ford Foundation **Postdoctoral Minority Fellowship**, 2006
CRS-Capsugel/Pfizer Innovative Aspects of Oral **Drug Delivery Award**, 2004
Science and Engineering Education Scholars Program Travel Award, 2004
Biophysical Society FASEB MARC Travel Award, 2003
International Society for Aerosol Medicine Student **Research Award**, 2003
Achievement Rewards for College Students **Fellowship**, 2000-01
Ford Foundation **Predoctoral Minority Fellowship**, 2001-04
National Science Foundation **Graduate Research Fellowship,** 2001-05
Louisiana Tech Biomedical Engineering **Outstanding Senior Award**, 1999

Grants and Contracts – Brown University

Project Title: Research Supplement - Investigating the Biophysics of Giant Polyploidal Cancer Cells in an Aging Tumor Stroma (2133460)
Funding Source: National Science Foundation
Total Funding Awarded and For Your Portion of the Project: $99,259, Role: PI

Period of Contract: 08/01/21-07/31/22, Candidate's Share: 100%

Project Title: REU Supplement - Investigating the Biophysics of Giant Polyploidal Cancer Cells in an Aging Tumor Stroma (006188)
Funding Source: National Science Foundation
Total Funding Awarded and For Your Portion of the Project: $8000, Role: PI
Period of Contract: 08/01/21-07/31/22, Candidate's Share: 100%

Project Title: Collaborative Research: A Digital Manufacturing Platform to Democratize Biological Tissue Access Using Smart Two-Photon Polymerization (2043243)
Funding Source: National Science Foundation
Total Funding Awarded and For Your Portion of the Project: $500,000, Role: Co-PI
Period of Contract: 05/01/21-04/30/24, Candidate's Share: 50%

Project Title: Role of Senescence Associated Extracellular Vesicles in Radiation-Induced Pulmonary Fibrosis
Funding Source: Research Seed Funds, Office of Vice President for Research, Brown University
Total Funding Awarded and For Your Portion of the Project: $30,000, Role: PI
Period of Contract: 2/21/2021 – 7/01/2022, Candidate's Share: 100%

Project Title: Clinical Relevance of Polyploidal Giant Cancer Cells and Biomarker Identification
Funding Source: Cancer Center at Brown University Pilot Project Award
Total Funding Awarded and For Your Portion of the Project: $25,000, Role: PI
Period of Contract: 01/1/21-12/1/21, Candidate's Share: 100%

Project Title: Standard Award: Investigating the Biophysics of Giant Polyploidal Cancer Cells in an Aging Tumor Stroma (1825174)
Funding Source: National Science Foundation
Total Funding Awarded and For Your Portion of the Project: $350,000, Role: PI
Period of Contract: 08/15/18-07/31/22, Candidate's Share: 100%

Project Title: Development of a 3D Organoid Culture Model to Identify Drivers of Cancer Progression
Funding Source: OVPR Grant Resubmission Funds (for NSF resubmission to EBMS)
Total Funding Awarded and For Your Portion of the Project: $15,000, Role: PI
Period of Contract: 08/1/18-08/1/19, Candidate's Share: 100%

Project Title: Molecular and Mechanical Regulators of the Metastatic Niche and Ovarian Cancer Metastasis (005756)
Funding Source: COBRE, Lifespan Center for Cancer Research Development
Total Funding Awarded and For Your Portion of the Project: $50,000, Role: PI
Period of Contract: 10/1/2017 – 6/30/2018, Candidate's Share: 100%

Project Title: Using Single Cell Biophysics and Shear Wave Ultrasound Elastography to Measure Cancer Mechanics Across Multiple Length Scales
Funding Source: Research Seed Funds, Office of Vice President for Research, Brown University
Total Funding Awarded and For Your Portion of the Project: $50,000/$25,000, Role: Co-PI

February 1, 2022

Period of Contract: 1/26/2017 – 6/30/2018, Candidate's Share: 50%

SOCIETAL AND POLICY IMPACTS

1. **K12 Outreach at Brown University:** Presented research to 30 advanced 12th grade science students from science cooperative in upstate New York. The program title is Questar III New Visions Medical Program. Title of presentation: "Biophysics and Medicine." Follow-up activities developed through D2D (described below) were shared with the teachers. The presentation was held at Brown University on December 16, 2016.

TEACHING

1. BIOL 1810: 21st Century Applications in Cell and Molecular Biology (Brown University)
   Spring 2021: 54 students registered
2. BIOL 1810: 21st Century Applications in Cell and Molecular Biology (Brown University)
   Spring 2020: 25 students
3. BIOL 0810: Applied Cell and Molecular Biology (Brown University)
   Spring 2019, 13 students.
4. BIOL 0810: Applied Cell and Molecular Biology (Brown University)
   Spring 2018, 2 students registered and 1 audited.

GUEST LECTURES

1. Presented research to 30 advanced 12th grade science students from science cooperative in upstate New York. Questar III New Visions Medical Program.
   Title of presentation: "Biophysics and Medicine."
2. BIOL 0100 Guest Speaker.
   Title of presentation: "Biophysics of Polyploidal Giant Cancer Cells."
3. MCB Fall Seminar Series.
   Title of presentation: "Tumor Microenvironment Interactions: Forcing Cancer Progression."
4. BIOL 2910 Guest Speaker
   Title of presentation: "Successful NSF and Ford Fellowship Applications."
5. BIOL 1050/2050 Guest Speaker
   Title of presentation: "Extracellular Matrix Biology"

MENTORING

Graduate Students, Brown University

1. **Botai Xuan, PhD student**
   Department: Molecular Pharmacology, Physiology, and Biotechnology
   Fifth year PhD candidate
   Project: Polyploidal Giant Breast Cancer Cells that Drive Paclitaxel Resistance
   Thesis Defense: Graduated and working in industry

2. **Carolina Mejia Pena, PhD student**
   Department: Molecular Biology, Cell Biology, and Biochemistry
   Fifth year PhD candidate (NSF fellow)
   Project: Role of FAK in Chemoresistant Ovarian Cancer
   Expected Graduation: 2022
3. **Amy Lee, PhD student**
   Department: Biomedical Engineering
   Fourth year PhD candidate (Applied for F31)
   Project: Exosome-Mediated Interactions in Ovarian Cancer Metastasis
   Expected Graduation: 2022
4. **Andrew Howes, PhD candidate (co-advisee)**
   Department: Biotechnology
   Third year PhD candidate (Primary Advisor is Kimani Toussaint)
   Project: Using non-linear optics to study collagen remodeling in fibrotic disease
   Expected Graduation: 2023
5. **Dominique Pablito, PhD rotation student**
   Department: Molecular Biology, Cell Biology, and Biochemistry
   Rotation student (Summer 2021)
   Project: Isolation of Polyploidal Giant Cancer Cells in Ovarian Cancer
6. **Sorel Ouonkap Yimga, PhD rotation student**
   Department: Molecular Biology, Cell Biology, and Biochemistry
   Rotation student (no longer working in my lab)
   Project: Biophysics of Polyploidal Giant Cancer Cells in Ovarian Cancer
7. **Jiwon Seo, PhD rotation student**
   Department: Molecular Biology, Cell Biology, and Biochemistry
   Rotation Student (no longer working in my lab)
   Project: Using Biophysical Models to Understand Chemoresistant Ovarian Cancer
8. **Blessing Akobundu, PhD rotation student**
   Department: Molecular Pharmacology, Physiology, and Biotechnology
   Rotation student (no longer working in my lab)
   Project: Stromal Cell Interactions in Radiation Resistant Prostate Cancer
9. **Chyna Gray, PhD rotation student**
   Department: Molecular Biology, Cell Biology, and Biochemistry
   Rotation student (no longer working in my lab)
   Project: Cancer Treatment Resistance and Elements of the Tumor Microenvironment
10. **Crystal Vargas, ScM student**
    Department: Biotechnology
    ScM Student (2023 graduate)
    Project: Senescence Associated Secretory Phenotype and Breast Cancer Polyploidal Cells.
11. **Difei Xu, ScM student**
    Department: Biotechnology
    ScM Student (2023 graduate)
    Project: Metabolic and Treatment Stress Effects on Ovarian Cancer Paclitaxel Resistance
12. **Braxton Morrison, ScM student**
    Department: Biomedical Engineering

5th Year ScM student (2022 graduate)
Project: Epithelial Ovarian Cancer Progression through Exosome Transfer from Polyploidal Giant Cells

13. **Devin Schroeder, ScM student**
Department: Biotechnology
ScM student (2021 graduate)
Project: Epithelial Ovarian Cancer Progression Mediated through Exosome Transfer
14. **Mateo Frare, ScM student**
Department: Biomedical Engineering
ScM student (2021 graduate)
Project: Tissue Derived Soluble Factors Direct Metaplastic Breast Cancer
15. **Zhan Wu, ScM student**
Department: Biomedical Engineering
ScM student (2019 graduate)
Project: Using Single Cell Biophysics to Predict Breast Cancer Drug Response
16. **Aakash Jhaveri, ScM student**
Department: Biotechnology
First year ScM student (moved to El-Deiry lab)
Project: Nuclear Biophysics to Understand Radiation Resistant Prostate Cancer

Undergraduate Students, Brown University

1. **Oksana Goretaya**, Chemical Biology, Graduated May 2017. Started independent research for credit Fall 2016, Spring 2017. EMT in Kentucky.
2. **Emily Cheney,** Biology: Physiology and Biotechnology Track, Graduated May 2019. Started independent research Fall 2016. Enrolled for credit Fall 2016, Spring 2017, Spring 2018. Undergraduate thesis: establishing markers for cellular senescence in irradiated lung fibroblasts. Postbaccalaureate program at Dana-Farber Cancer Institute, accepted to medical school, Mount Sinai (?).
3. **Kylen Soriano,** Health and Human Biology (Pre-Med), Graduated May 2019. Started independent research for credit Spring 2017. Enrolled for credit Fall 2017, Spring 2017, Spring 2018. Undergraduate thesis: TGF-b and hypoxia induced epithelial-mesenchymal transition effects on ovarian cancer mechanosensitivity. Completed 1-year postbaccalaureate program at Mount Sinai and now in medical school at UCSF.
4. **Elizabeth Clifton,** Applied Mathematics and Biology, Graduated May 2019. Started independent research Spring 2017. Enrolled for credit Spring 2017, Fall 2017, Spring 2018. Undergraduate thesis: polyploidal giant cancer cells and their role in aging and chemotherapeutic resistance. Medical school at Mount Sinai.
5. **Jeffrey Hsu**, Biochemistry, Graduated May 2019. Started independent research Fall 2016, Enrolled for credit Fall 2017, Spring 2017, Fall 2018, Spring 2019. Undergraduate thesis: mesenchymal stem cell-secreted TGF-β facilitates EMT in ovarian cancer progression through cytoskeletal and nuclear reorganization. Postbaccalaureate program at Broad Institute, applied to medical school this year.
6. **Thomas Skipper,** Biomedical Engineering, Graduated May 2019. Started independent research Fall 2016. Enrolled for credit Fall 2016, Spring 2018, Fall 2018, Spring 2019. Undergraduate thesis: modeling ovarian cancer microenvironments using alginate-gelatin microspheres. Postbaccalaureate program at Broad Institute, followed by medical school.
7. **Joy Jiang,** Biochemistry and Molecular Biology, Graduated May 2019. Started independent research Spring 2018. Enrolled for credit Spring 2018, Fall 2018, Spring 2019. Undergraduate thesis: differences in cytoskeletal biophysics to explain heterogeneity in polyploidal giant breast cancer cell populations. Stanford

University for Cancer Research Education and Summer Training Program (CREST). Now in medical school at Mount Sinai.

8. **Devin Schroeder,** Biochemistry and Molecular Biology, Graduated May 2020. Started research Fall 2018. Enrolled for credit Fall 2018, Spring 2019. Undergraduate thesis: the role of hsa-mir-200b in ovarian cancer cell proliferation and migration. Graduated in 2020 and staying for 1-year biotechnology master's program.
9. **Allison Lin,** Biochemistry and Molecular Biology, Graduated May 2021. Started research in 2019. Undergraduate thesis: lipid droplet metabolism alters chemotherapy response in epithelial ovarian cancer.
10. **Rachelle Shao,** Biochemistry and Molecular Biology, Graduated May 2021. Started research in 2019. Undergraduate topic: alterations in polyploidal giant breast cancer cell molecular properties.
11. **Andrew Kopplin,** Biochemistry and Molecular Biology, Graduated May 2021. Started research in 2019. Undergraduate topic: heterogeneity in epithelial ovarian cancer mechanics.
12. **Ilexa Schechter,** Biochemistry and Molecular Biology, Expected Graduation May 2022. Started research in fall 2020. Undergraduate thesis topic: tumor organoid models of epithelial ovarian cancer for drug studies.
13. **Mathew Perricone,** Biochemistry and Molecular Biology, Expected Graduation May 2022. Undergraduate thesis: lipid droplet quantification in chemotherapy resistant epithelial ovarian cancer polyploid cells.
14. **Braxton Morrison,** Computational Studies, Expected Graduation May 2022. Started research in summer 2020. Undergraduate thesis topic: exosome transfer of microRNAs trigger biophysical alterations in invasive epithelial ovarian cancer cells.
15. **Ivy Koh.** Biochemistry and Molecular Biology, Expected Graduation May 2024. Undergraduate thesis: senescence associated secretory phenotype exchange through extracellular vesicles.
16. **Nova Dea**. Biomedical Engineering, Expected Graduation May 2024. Undergraduate thesis: Extracellular matrix remodeling in pulmonary fibrosis and metastasis.

Postdoctoral Fellow, Brown University

1. **Deepraj Ghosh**, Postdoctoral research assistant (2017-2021), 2017-present. Project: tumor microenvironment interactions forcing cancer progression - stromal cell aging and breast cancer progression. Promoted to Research Assistant Professor – January 2021.
2. **Nhat Quach,** BRRTP postdoctoral fellow, 2018-2021. Project: elucidating the role of cytosolic phospholipase A2 in preparing the niche for lung cancer development. Working at Merck.

Graduate Students, Georgia Institute of Technology (5)

Ph.D. Deepraj Ghosh, Kathleen McAndrews, Daniel McGrail.
M.S. Kevin Rodriguez, Russell Jampol.

Undergraduate Students, Georgia Institute of Technology (43)

Ryan Amos, Jake Childs, Daniel McGrail, Lauren Sanders, Divine Edem, Sarah McNew, David Boney, Clint Cheng, Eric Lin, Tanisha Bilups, Michelle Park, Christine Hang, Hasan Khosravi, Jae Shin, Virginia Lin, Harshel Desai, Charles Kuo, Xuan Vuong, Christine Muzzelo, Chinelo Ononye, Joe Roesner, Hweeyee Han, Mark Qi, Cecilia Pantoja, Barbara Zappala, Brandon Ling, Derrick Morton, Nhat Quach, Eled Gebrihot, Min Jeong Kim, Jason Iandoli, Vinh Trang, Tuyet Lam, Niti Khambhati, Jaeyoon Yi, Quang Minh Kieu, Krishan Patel, Chandler Brandenburg, Nithin Ravikumar, Blake Lash, Christian Burns,Robert Cowles, Dalton Snyder.

Postdoctoral Fellows and Visiting Scholars, Georgia Institute of Technology

Adrian Katona, Dustin Zuelke, Deepraj Ghosh, Shabnam Gupta.

High School Interns, Georgia Institute of Technology

Brett Jones, Kathleen Allen, Ronald Shanderson, Saachi Datta.

OTHER TEACHING ACTIVITIES

PhD/ScM Thesis Committees, Brown University

1. Shuai Zhao, PhD Candidate, Pathology and Laboratory Medicine, Advisor – Wafik El-Deiry
2. Adrienne Parsons, PhD Candidate, Biomedical Engineering, Advisor – Eric Darling
3. Adrienne Parsons, ScM Candidate, Biomedical Engineering, Advisor – Eric Darling
4. Verida Leandre, PhD student, Biomedical Engineering, Advisor – Edith Mathiowitz
5. Sarah Gordon, PhD Candidate, Molecular Biology, Cell Biology, and Biochemistry, Advisor – Shipra Vaishnava
6. Chinedu Irofuala, ScM Candidate, Biomedical Engineering, Advisor – Kareen Coulombe
7. Elizabeth Bixler, ScM Candidate, Biomedical Engineering, Advisor – Eric Darling
8. Megan Dempsey, PhD Candidate, Biomedical Engineering, Advisor – Eric Darling
9. Jiwon, Seo, PhD Candidate, Molecular Biology, Cell Biology, and Biochemistry, Advisor – John Sedivy
10. Hafithe AlGhosain, ScM Candidate, Biomedical Engineering, Adviosr – Jongwhan Lee
11. Adrienne Parsons, PhD Candidate, Biomedical Engineering, Advisor – Eric Darling
12. Shuai Zhao, PhD Candidate, Pathobiology, Advisor - Wafik El-Deiry
13. Aakash Jhaveri, ScM Candidate, Pathobiology, Advisor - Wafik El-Deiry
14. Botai Xuan, PhD Candidate, Molecular Pharmacology, Physiology, and Biotechnology, Advisor
15. Carolina Mejia Pena, PhD Candidate, Molecular Biology, Cell Biology, and Biochemistry, Advisor
16. Amy Lee, PhD Candidate, Biomedical Engineering, Advisor
17. Zhan Wu, ScM Candidate, Biomedical Engineering, Advisor

Session moderator or speaker:

1. Conference of the Ford Fellows (2010-2020).
2. Senior Ford Conference (2016, 2018)
3. Georgia Tech Chemical & Biomolecular Engineering Future Faculty Program (2012)
4. Harvard Medical School Department of Continuing Education (2008)

Science and engineering / education workshops

1. Harvard CNS Scholars Training Program, Boston, MA 2020.
2. NRMN SETH Grant Coaching Workshop, Bethesda, MD 2019.
3. Harvard Minority Faculty Development Workshop, Boston, MA 2019.
4. Harvard Medical School: Career Advancement and Leadership Skills for Women in Healthcare Conference, Boston, MA 2018.
5. NSF EFRI Workshop, Convergence and Interdisciplinarity in Advancing Larger Scale Research, Washington DC, 2018.
6. Graduate Student Orientation, Focusing Professional Activities to Build a Strong CV, Brown University, Providence, RI, 2017.
7. NSF Includes Broadening Participation in STEM Conference, San Diego, CA, 2016.
8. NSF BRIGE Principal Investigator Conference, Washington, DC, 2011.
9. NSF Career Development Workshop, University of Florida, 2009.
10. College of Engineering, Pennsylvania State University, 2004

PROFESSIONAL CONTRIBUTIONS / SERVICE

Advisory Roles

Member of MPP Executive Committee, Brown University, 2020-present.
Chair of MPP DIAP Committee, Brown University, 2020-2021.
Internal Advisory Board Member, Initiative to Maximize Student Development (IMSD), Brown University, 2019-present.
Advisory Board Member, Office of Women in Medicine and Science, Brown University, 2018-present.
Faculty Advisory Board, Louisiana Tech University, Biomedical Engineering, 2011-present.

Scientific Sessions and Conferences Organized and Chaired

1. Co-chair, Conference of the Ford Fellows, 2014.
2. Planning committee, GT Minority Faculty Development Workshop, 2013.
3. Planning committee, Conference of the Ford Fellows, 2011.
4. Planning committee, Conference of the Ford Fellows, 2013.
5. Planning committee, Conference of the Ford Fellows, 2014.
6. Co-chair and organizer, Department of Chemical and Biomolecular Engineering Graduate Student Seminar Series, The Johns Hopkins University, 2004.

Editorial Board Member

1. Cancer Biology & Therapy (2019-present).
2. Scientific Reports (2017-present).
3. PLoS One (2018-present).
4. AIMS Cell and Tissue Engineering (2016-2018).

Journal Review Activities

1. ACS Biomaterials
2. AIMS Cell and Tissue Engineering
3. Annals of Biomedical Engineering
4. Biophysical Journal
5. Biotechnology and Bioengineering
6. BMC Cancer
7. British Journal of Hematology
8. Cancer Research
9. Cancers
10. Cell Communication and Signaling
11. Cytoskeleton
12. Journal of Clinical and Experimental Metastasis
13. Journal of Controlled Release
14. Journal of Neuro-Oncology
15. Journal of Pharmaceutical Science
16. Journal of Royal Society Interface
17. JOVE
18. Molecular Cancer Research
19. Molecular Imaging

20. Molecular Pharmaceutics
21. Nature Communications
22. Nature Methods
23. Optics Express
24. PLoS One
25. PNAS
26. Scientific Reports
27. Stem Cell

Panel Review

1. National Science Foundation
2. Department of Defense Cancer Research Programs
3. Department of Defense Medical Research Programs
4. Ford Foundation
5. National Institute of Health

Administrative Duties in Professional Societies

1. Session chair, Biomedical Engineering Society Annual Meeting, Cancer Biomechanics (2019), Stem Cells (2013).

Public and Community Service

1. American Cancer Society CAN 6th Annual Breakfast Panel Member (2019).
2. Leadership Alliance Mentor (2017, 2018)

Institute Contributions

1. Brown University IMSD Advisory Board member, 2019-present.
2. Brown University MPP Executive Board member, 2020-present.
3. Brown University MPP DIAP Committee member and chair, 2019-present.
4. Brown University MCB Faculty Retreat Chair, 2018.
5. Brown University MCB Faculty Retreat Co-Chair, 2017.
6. Brown University MCB Graduate Recruitment Committee, 2017, 2021.
7. Brown University MPP Seminar Committee, 2017-2021.
8. Brown University MCB Diversity Committee, 2017-2018, 2021-present.