

Theresa M. Raimondo

School of Engineering, Brown University, 184 Hope St, Box D, Providence, RI 02912, Engineering Research Center 337

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RESEARCH INTERESTS

The Raimondo Lab for RNA-based Immunotherapeutics at Brown University develops targeted drug delivery vectors, and novel RNA constructs for applications in cancer, immunotherapy, and tissue regeneration. We focus on modulating both innate and adaptive immunity by designing genetically targeted therapeutics (via RNA-sequence and chemical modifications) and optimizing transfection efficiency and targeted delivery (e.g. nanoparticles, surface functionalization, bioactive lipid nanoparticles).

EDUCATION

- Ph.D. Engineering Sciences – Bioengineering, Harvard University 2011 – 2019
Mooney Laboratory, Dissertation topic: *“Biomaterial directed immune modulation and tissue regeneration in the context of skeletal muscle injury”*
- M.S. Engineering Sciences, Harvard University 2011 – 2019
- Sc.B. Chemical and Biochemical Engineering, Brown University 2007 – 2011

PROFESSIONAL APPOINTMENTS

- Manning Assistant Professor of Engineering School of Engineering, Brown University 2025 – current
Division of Biology and Medicine, Department of Molecular Biology, Cell Biology, and Biochemistry (joint)
- Assistant Professor of Engineering, School of Engineering, Brown University 2024 – 2025
Division of Biology and Medicine, Department of Molecular Biology, Cell Biology, and Biochemistry (joint)
- Member, Brown RNA Center, Brown University 2024 – current
- Member, IBEAM, Brown University 2024 – current
- Member, Legorreta Cancer Center, Cancer Therapeutics Program, Brown University 2024 – current
- Trainer, Therapeutic Sciences Graduate Program, Brown University 2024 – current
- Postdoctoral Associate, Koch Institute for Integrative Cancer Research at MIT 2019 – 2023
Bioengineering, Anderson & Langer Laboratory

HONORS AND AWARDS

- Invited participant, US Grainger Foundation Frontiers of Engineering (USFOE) Meeting 2025
- Early Career Board, *ACS Applied Bio Materials* 2025 – 2027
- American Cancer Society – Institutional Research Grant, Junior Faculty Recipient 2024 – 2025
- Northeast Bioengineering Conference (NEBEC) Faculty Innovator Award 2024
- MIT Faculty Founder Prize Competition Finalist 2023 – 2025
- nanoDDS Conference Research Award 2023
- Convergence Scholar, Massachusetts Institute of Technology 2021 – 2022
- Gordon Research Conference, Biomaterials & Tissue Engineering 2017
Award for Excellence in Poster Presentation
- National Science Foundation Graduate Research Fellowship 2012 – 2017
- Smith Family Graduate Science and Engineering Fellowship, Harvard University 2012

PEER-REVIEWED PUBLICATIONS

[Google Scholar Profile](#)

*Corresponding author; *Contributed equally

1. Coll De Peña A., Chen N.M., Vaduva M., Li N.S., **Raimondo T.M.**, Bailey-Hytholt C.M., Tripathi A.* “Application of microfluidic analytical techniques to support the development of nucleic acid delivery vehicles” **Molecular Pharmaceutics** *Under review*
2. Purcell C., Rajendran K., El-Deiry W.S., **Raimondo T.M.** “Optimization of miRNA-6883 lipid nanoparticles for targeted CDK4/6 and HIF1a inhibition in colorectal and breast cancer cells [abstract]” Proceedings of the American Association for Cancer Research Annual Meeting 2025; **Cancer Res**, 85:8_Suppl_1, April 2025.
3. Li B.*[†], Raji I.*[†], Gordon A.G.R.*[†], Sun L., **Raimondo T.M.**, Oladimeji F.A., Jiang A.Y., Varley A., Langer R., Anderson D.G.* “Accelerating ionizable lipid discovery for mRNA delivery using machine learning and combinatorial chemistry” **Nature Materials**, 23:1002-1008, July 2024.
<https://doi.org/10.1038/s41563-024-01867-3>
4. Li B.*[†], Jiang A.Y.*[†], Raji I.*[†], Atyeo C., **Raimondo T.M.**, Gordon A.G.R., Rhym L.H., Samad T., Maclsaac C., Witten J., Mughal H., Chicz T.M., Xu Y., McNamara R.P., Bhatia S., Alter G., Langer R., Anderson D.G.* “Enhancing the immunogenicity of lipid-nanoparticle mRNA vaccines by adjuvating the ionizable lipid and the mRNA” **Nature Biomedical Engineering**, Sept. 2023.
<https://doi.org/10.1038/s41551-023-01082-6>
5. **Raimondo T.M.**, Reed K., Shi D., Langer R., Anderson D.G.* “Delivering the next generation of cancer immunotherapies with RNA” **Cell**, 186(8):1535-40, March 2023.
<https://doi.org/10.1016/j.cell.2023.02.031>
6. **Raimondo T.M.** and Mooney D.J.* “Anti-inflammatory nanoparticles significantly improve muscle function in a murine model of advanced muscular dystrophy” **Science Advances**, 7(26):eabh3693, June 2021.
<https://doi.org/10.1126/sciadv.abh3693>
7. Smith A., Watkins T., Theocharidis G., Lang I., Leschinsky M., Maione A., Kashpur O., **Raimondo T.M.**, Rahmani S., Baskin J., Mooney D.J., Veves A., Garlick J.* “A novel 3D skin disease model to assess macrophage function in diabetes” **Tissue Engineering Part C**, 27(2):49-58, Feb. 2021.
<https://doi.org/10.1089/ten.TEC.2020.0263>
8. **Raimondo T.M.**, McCalla S.E.* “Adsorption and desorption of DNA-functionalized beads in glass microfluidic channels” **Biomicrofluidics**, 13:054104, Sept. 2019.
<https://doi.org/10.1063/1.5115160>
9. **Raimondo T.M.**, Li H., Kwee B.J., Kinsley S., Budina E., Anderson E.M., Doherty E.J., Talbot S.G.*[†], Mooney D.J.* “Combined delivery of VEGF and IGF-1 promotes functional innervation in mice and improves muscle transplantation in rabbits” **Biomaterials**, 216:119246, Sept. 2019.
<https://doi.org/10.1016/j.biomaterials.2019.119246>
10. Shah N.J., Mao A.S., Shih T., Kerr M.D., Sharda A., **Raimondo T.M.**, Weaver J.C., Vrbanac V.D., Deruaz M., Tager A.M., Mooney D.J.*[†], Scadden D.T.*[†], “An injectable bone marrow-like scaffold enhances T cell immunity after hematopoietic stem cell transplantation” **Nature Biotechnology**, 37:293-302, Feb 2019.
<https://doi.org/10.1038/s41587-019-0017-2>
11. **Raimondo T.M.** and Mooney D.J.* “Functional muscle recovery with nanoparticle-directed M2 macrophage polarization in mice” **Proc. Natl. Acad. Sci.**, 115(42):10648-53, Oct. 2018.
<https://doi.org/10.1073/pnas.1806908115>
12. Alonso-Nocelo M., **Raimondo T.M.**, Vining K.H., Lopez-Lopez R., Fuente M.*[†], Mooney D.J.* “Matrix stiffness and tumor-associated macrophages modulated epithelial to mesenchymal transition of human adenocarcinoma cells” **Biofabrication**, 10(3):035004, March 2018.
<https://doi.org/10.1088/1758-5090/aaafbc>
13. Kearney C.J.*[†], Skaat H.*[†], Kennedy S.M., Hu J., Darnell M., **Raimondo T.M.**, Mooney D.J.*[†], “Switchable Release of Entrapped Nanoparticles from Alginate Hydrogels” **Advanced Healthcare Materials**, 4(11):1634-1639, Aug. 2015.
<https://doi.org/10.1002/adhm.201500254>
14. Anderson E.M., Kwee B.J., Lewin S.A., **Raimondo T.M.**, Mehta M., Mooney D.J.*[†], “Local Delivery of VEGF and SDF Enhances Endothelial Progenitor Cell Recruitment and Resultant Recovery from Ischemia” **Tissue Engineering Part A**, 21(7-8): 1217-1227. April 2015.
<https://doi.org/10.1089/ten.tea.2014.0508>

15. **Raimondo T.M.**, Puckett S., Webster T.J.*, “Greater osteoblast and endothelial cell adhesion on nanostructured polyethylene and titanium” **International Journal of Nanomedicine**, 5:647-652, Sept 2010. <https://doi.org/10.2147/IJN.S13047>
16. Puckett S.D., Taylor E., **Raimondo T.M.**, Webster T.J.*, “The relationship between the nanostructure of titanium surfaces and bacterial attachment” **Biomaterials** 31(4):706-713, Feb 2010. <https://doi.org/10.1016/j.biomaterials.2009.09.081>

PATENTS

1. **Raimondo T.M.**, Holmes-Farley S., (2025) A novel siRNA that inhibits expression of nucleic acids encoding SRC, FYN, FGR, BLK, and HCK. U.S. Provisional Pat, filed April 10, 2025.
2. **Raimondo T.M.**, El-Deiry W.S., Purcell C., Rajendran K., (2025) Novel microRNA-loaded lipid nanoparticle for the inhibition of CDK4/6 and downregulation of HIF1a in colorectal and breast tumors. U.S. Provisional Pat. 63/786,565, filed April 10, 2025.
3. Toyonaga S., **Raimondo T.M.**, Shi D.Z., Anderson D.G. (2023) Methods of delivering therapeutic agents, and lipid compositions. United States Patent. Patent No. 63/433629. Publication number WO/2024/135604 A1. (Publication date June 27, 2024.)
4. Toyonaga S., Anderson D.G., **Raimondo T.M.**, Shi D.Z. (2023) Lipid nanoparticles for delivery of agents. United States Patent. Patent No. 63/495958. US Patent App. 18/634,595 (Filed April 12, 2024; Publication date Feb. 13, 2025)
5. Toyonaga S., Shi D.Z., **Raimondo T.M.**, Anderson D.G. (2023) Lipid composition and method of delivering therapeutic agent. United States Patent. Patent No. 63/417563. Publication number WO/2024/085190 A1. (Publication date April 25, 2024)
6. Toyonaga S., **Raimondo T.M.**, Shi D.Z., Anderson D.G. (2022) Compositions and Methods for Inhibiting Expression of the Signal Regulatory Protein Alpha (SIRP α) Gene. United States Patent. Patent No. US 2025/0171786 A1. Publication number WO/2024/026308 A2. (Publication date Feb. 1, 2024)

INVITED TALKS

- Bioengineering and Biomedical Innovations (BEBI-2026) an IRC Conference, *Boston, MA* Mar., 2026
- Chemical, Biomolecular and Materials Engineering Seminar, *University of Rhode Island* Dec., 2025
- American Chemical Society (ACS) Northeast Regional Discussion, *Worcester, MA* Nov., 2025
- Molecular Microbiology & Immunology Seminar Series, *Brown University* Nov., 2025
- Faculty panelist, BME for All – Teaching in Unprecedented Times, *BMES annual meeting, San Diego CA* Oct., 2025
- Inaugural Brown RNA Center Symposium, *Warren Alpert Medical School, Brown University* Sept., 2025
- I-BEAM Anti-Cancer Immunoengineering Symposium, *Brown University* June, 2025
- Antimicrobial Resistance Collaborative Mini-symposium: Host-directed approaches, *Brown University* May, 2025
- Brown + Beyond: Advances in RNA Research, *Seattle, WA* May, 2025
With Christina Paxson, and Juan Alfonzo
- Brown + Beyond: Advances in RNA Research, *San Francisco, CA* May, 2025
With Preetha Basaviah, and Juan Alfonzo
- MGB Engineering in Medicine Seminar Series, *Mass General Brigham* April, 2025
- Presidential Leadership Council Meeting, *Brown University* April, 2025
“Building a Lifesciences Ecosystem in RI” with Mukesh Jain and Marty Taylor
- Exploring the Interface of Immunology & Cancer Biology Mini-Symposium, *Legorreta Cancer Center, Brown University* Feb., 2025

- Cardiovascular Bioengineering Symposium, *Brown University* Jan., 2025
- The Brown RNA Center Symposium, *Brown University* Jan., 2025
- Brown Medical Alumni Association, Board of Directors Meeting, *Warren Alpert Medical School of Brown University* Oct., 2024
- Committee on Medical and Health Affairs, Corporation Meeting, *Brown University* Oct., 2024
- 225 Dyer Lab Opening Event with Wexford Science and Technology, hosted by *Brown Technology Innovations* Oct., 2024
- Innovation@Brown Showcase, Selected innovation, *Brown University* Sept., 2024
- Cancer Therapeutics Program Seminar, *Brown University* Sept., 2024
- Engineering – Cancer Symposium, *Legorreta Cancer Center, Brown University* Aug., 2024
- Presidential Advisory Council Meeting, *Brown University* June, 2024
- American Cancer Society Delegation meeting at *Legorreta Cancer Center, Brown University* May, 2024
- MIT Faculty Founders Initiative, *Broad Institute, Cambridge, MA* May, 2024
- Northeast Bioengineering Conference, *Stevens Institute of Technology* April, 2024
- Biomedical Engineering Seminar, *Brown University* March, 2024
- Pathobiology Graduate Program Seminar, *Brown University* Feb., 2024
- Danaher Nanomedicine Day, *Koch Institute for Integrative Cancer Research at MIT* Nov., 2022
- Friday Focus Seminar, *Koch Institute for Integrative Cancer Research at MIT* July, 2020

CONFERENCES

Oral Presentations

- **Raimondo, T.M.** “RNA-Lipid Nanoparticle Directed Immune Modulation” **Biomedical Engineering Society** annual meeting, Baltimore, MD, October 2024.
- **Raimondo, T.M.**, Shi D., Toyonaga S., Anderson D.G. “In vivo Natural Killer Cell Activation with siRNA-Lipid Nanoparticles for Cancer Immunotherapy” **Biomedical Engineering Society** annual meeting, Baltimore, MD, October 2024.
- **Raimondo, T.M.** “Therapeutic Macrophage Activation using RNA-Lipid Nanoparticles in Metastatic Ovarian Cancer” **Society for Biomaterials, Northeast Regional Symposia**, Boston, MA, Sept. 2024.
- **Raimondo, T.M.**, Shi D., Toyonaga S., Anderson D.G. “Therapeutic Macrophage-gene Silencing Using siRNA-LNPs in Metastatic Ovarian Cancer” **nanoDDS Conference**, Boston MA, Sept. 2023.
- **Raimondo, T.M.** and Mooney, D.J. “IL4 Conjugated Gold Nanoparticles Direct Macrophage Polarization *In Vivo* Following Ischemia Surgery.” **Biomedical Engineering Society** annual meeting, Minneapolis, MN, October 2016.
- **Raimondo, T.M.** and Mooney, D.J. “IL4 Conjugated Gold Nanoparticles Direct Human Macrophage Polarization *In Vitro*.” **Biomedical Engineering Society** annual meeting, Tampa, FL, October 2015.

Poster Presentations

* *conference honors received*

- Purcell C., Zhang L., Ghandali M., Holmes-Farley S., Su A.Y., Sidonia A., Raissi A., Barrette M., Youssef E., **Raimondo T.M.**, El-Deiry W. “Combination of CDK4/6 inhibitory and anti-hypoxia miRNA-6883 lipid nanoparticles with ferroptosis inducers or MEK inhibitors in preclinical breast and colorectal cancer models.” **American Association for Cancer Research**, San Diego CA, April 2026.
- Gonzalez J.A., Pamudurthy A.R., Holmes-Farley S, Schorr A., **Raimondo T.M.** “STING-Activating Lipid Nanoparticles Deliver siRNA for Nonreceptor Tyrosine Kinase Silencing in Macrophages to Suppress Migration and Enhance Immune Cell Recruitment.” **Biomedical Engineering Society: Cellular and Molecular Bioengineering** conference, San Juan, PR, Jan. 2026.
- Holmes-Farley S., **Raimondo T.M.** “Multikinase Targeting siRNA with Optimized Lipid Nanoparticles for Restoring Chemosensitivity and Solid Tumor Penetration.” **Biomedical Engineering Society: Cellular and Molecular Bioengineering** conference, San Juan, PR, Jan. 2026.

- **Raimondo T.M.**, Pamudurthy A.R., Schorr A., Gonzalez J.A., Holmes-Farley S “The Raimondo Lab Research Group: Development of Lipid Nanoparticle Delivery Systems and RNA Therapeutics.” **Biomedical Engineering Society: Cellular and Molecular Bioengineering** conference, San Juan, PR, Jan. 2026.
- Delesky J., Schorr A., Gonzalez J.A., **Raimondo T.M.** “Validation of Lipid Nanoparticle Formulation for Delivery of Immune Checkpoint siRNA to Macrophages.” **American Chemical Society** Northeast Regional Discussion (NERD), Worcester, MA, Nov. 2025.
**Recipient of the 2025 ACS NERD Outstanding Poster Presentation Award.*
- Schorr A., Delesky J., Gonzalez J.A., Holmes-Farley S., **Raimondo T.M.** “siRNA-LNP driven macrophage checkpoint silencing to promote anti-tumor immune cell activation in invasive breast cancer.” **American Chemical Society** Northeast Regional Discussion (NERD), Worcester, MA, Nov. 2025.
- Baum A., Gonzalez J.A., Holmes-Farley S., Guan L., **Raimondo T.M.** “High Throughput Design of Experiment Optimization of Lipid Nanoparticles for Macrophage Delivery.” **American Chemical Society** Northeast Regional Discussion (NERD), Worcester, MA, Nov. 2025.
- Lee J., Simpatico F., **Raimondo T.M.** “A Quantitative Optimization of Benchtop Protein Labelling That Preserves Protein Biological Activity.” **American Institute of Chemical Engineers** annual meeting, Boston, MA, Nov. 2025.
- Guan L., Holmes-Farley S., **Raimondo T.M.** “Machine learning Model Comparison and Validation for Lipid nanoparticle Optimization.” **Biomedical Engineering Society** annual meeting, San Diego, CA, Oct. 2025.
- Pamudurthy A.R., Gonzalez J.A., Raimondo T.M. “Design and Optimization of STING – Activating Lipid Nanoparticles to deliver siRNA for SFK Silencing in Tumor Associated Macrophages.” **Biomedical Engineering Society** annual meeting, San Diego, CA, Oct. 2025.
- Schorr A., Delesky J., Gonzalez J.A., Holmes-Farley S., **Raimondo T.M.** “siRNA-LNP driven macrophage checkpoint silencing to promote anti-tumor immune cell activation in invasive breast cancer.” **Biomedical Engineering Society** annual meeting, San Diego, CA, Oct. 2025.
- Gonzalez J.A., Pamudurthy A.R., Holmes-Farley S, Schorr A., **Raimondo T.M.** “STING-Activating Lipid Nanoparticles Deliver siRNA for Nonreceptor Tyrosine Kinase Silencing in Macrophages to Suppress Migration and Enhance Immune Cell Recruitment.” **Biomedical Engineering Society** annual meeting, San Diego, CA, Oct. 2025.
- Holmes-Farley S., **Raimondo T.M.** “Multikinase Targeting siRNA with Optimized Lipid Nanoparticles for Restoring Chemosensitivity and Solid Tumor Penetration.” **Biomedical Engineering Society** annual meeting, San Diego, CA, Oct. 2025.
- **Raimondo T.M.**, Pamudurthy A.R., Schorr A., Gonzalez J.A., Holmes-Farley S “The Raimondo Lab Research Group: Development of Lipid Nanoparticle Delivery Systems and RNA Therapeutics.” **Biomedical Engineering Society** annual meeting, San Diego, CA, Oct. 2025.
- Acosta González J., Holmes-Farley S., Schorr A., **Raimondo T.M.** “Engineered Lipid Nanoparticles for Efficient siRNA Delivery and Silencing of Tyrosin Kinase in Macrophages.” **Dr. Samuel M. Nabrit Conference for Early Career Scholars** at Brown University, Providence, RI, June 2025.
- Holmes-Farley S., Schorr A., Acosta González J., **Raimondo T.M.** “Multikinase Targeting siRNA with Optimized Lipid Nanoparticles for Restoring Chemosensitivity and Solid Tumor Penetration.” **Dr. Samuel M. Nabrit Conference for Early Career Scholars** at Brown University, Providence, RI, June 2025.
- Purcell C., Rajendran K., El-Deiry W., **Raimondo T.M.** “Optimization of miRNA-6883 lipid nanoparticles for targeted CDK4/6 and HIF1a inhibition in colorectal and breast cancer cells.” **American Association for Cancer Research**, Chicago IL, April 2025.
- **Raimondo T.M.**, Shi D., Toyonaga S., Anderson D.G. “In vivo Natural Killer Cell Activation with siRNA-LNPs for Cancer Immunotherapy.” **Society for Biomaterials Annual Meeting**, Chicago, IL, April 2025.
- Holmes-Farley S., Schorr A., Acosta González J., **Raimondo T.M.** “Kinase-Selective siRNAs, and Optimized Lipid Nanoparticles, for Therapeutic Silencing in Ovarian Cancer.” **Biomedical Engineering Society, Cellular and Molecular Bioengineering** Special Interest Group (BMES CMBE) conference, Carlsbad, CA, Jan. 2025.

**Recipient of the 2025 BMES CMBE Poster Award, in recognition of outstanding research in the field*

- Holmes-Farley S., **Raimondo T.M.** “Development of Kinase-Selective siRNA for Therapeutic Silencing Using Lipid Nanoparticles in Ovarian cancer.” **Biomedical Engineering Society** annual meeting, Baltimore, MD, Oct. 2024.
- **Raimondo T.M.**, Shi D., Toyonaga S., Anderson D.G. “In vivo Natural Killer Cell Activation with siRNA-LNPs for Cancer Immunotherapy.” **Drug Carriers in Medicine and Biology Gordon Research Conference**, University of Southern Main, ME, Aug. 2024.
- **Raimondo T.M.**, Shi D., Toyonaga S., Anderson D.G. “Therapeutic Macrophage-gene Silencing Using siRNA-LNPs in Metastatic Ovarian Cancer.” **Dr. Samuel M. Nabrit Conference for Early Career Scholars** at Brown University, Providence, RI, June 2024.
- **Raimondo T.M.**, Shi D., Toyonaga S., Anderson D.G. “Therapeutic Macrophage-gene Silencing Using siRNA-LNPs in Metastatic Ovarian Cancer.” **Biomedical Engineering Society** annual meeting, Seattle, WA, October 2023.
- **Raimondo T.M.**, Shi D., Toyonaga S., Anderson D.G. “Therapeutic Macrophage-gene Silencing Using siRNA-LNPs in Metastatic Ovarian Cancer.” **Immune Modulation & Engineering Symposium**, Philadelphia, PA, Dec. 2022.
- **Raimondo T.M.**, Shi D., Toyonaga S., Anderson D.G. “Therapeutic Macrophage-gene Silencing Using siRNA-LNPs in Metastatic Ovarian Cancer.” **Annual Koch Institute for Integrative Cancer Research at MIT Retreat**, Boston, MA, Oct. 2022.
- **Raimondo T.M.**, Shi D., Toyonaga S., Anderson D.G. “Therapeutic Macrophage-gene Silencing Using siRNA-LNPs in Metastatic Ovarian Cancer.” **Drug Carriers in Medicine and Biology Gordon Research Conference**, Mount Snow, VT, Aug. 2022.
- Li B., Jiang A.Y., Raji I., Atyeo C., **Raimondo T.M.**, Gordon A.G.R., Rhym L.H., Samad T., Bhatia S., Alter G., Langer R., Anderson D.G. “Engineering dually-adjuvanted mRNA vaccines for SARS-CoV2.” **Marble Center for Cancer Nanomedicine Poster Symposium**, Cambridge, MA, May 2022.
**Recipient of the 2022 Koch Institute Nanomedicine poster symposium*
- **Raimondo T.M.** and Mooney D.J. “Functional Muscle Recovery with Nanoparticle-Directed M2 Macrophage Polarization.” **Biomaterials & Tissue Engineering Gordon Research Conference**, Holderness, NH, July 2017.
**Recipient of the 2017 GRC Biomaterials & Tissue Engineering Poster Award*
- **Raimondo T.M.**, McCalla S.E., and Tripathi A. “Desorption of DNA Decorated Beads Via Conformation Change.” **American Institute of Chemical Engineers** annual student conference, Salt Lake City, UT, November 2010.
- **Raimondo T.M.**, Puckett S., and Webster T.J., “Greater osteoblast and endothelial cell adhesion on nanostructured polymers.” **Biomedical Engineering Society** annual meeting, Pittsburgh, PA, October 2009.

TEACHING AND ADVISING

Courses Taught (*new course developed, indicated for first semester taught)

Student evaluations: 5=“strongly agree”, 1=“strongly disagree”

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|--|-------------|
| • ENGN 1945: Immunoengineering
<i>(14 undergraduate, 17 graduate; instructor is effective 4.41; course is effective: 4.24)</i> | Fall 2025 |
| • ENGN 1945: Immunoengineering*
<i>(11 undergraduate, 12 graduate; instructor is effective 4.35; course is effective: 4.18)</i> | Spring 2025 |
| • ENGN 1491: Biomaterials
<i>(50 undergraduate, 5 graduate; instructor is effective: 4.10; course is effective: 4.09)</i> | Fall 2024 |
| • ENGN 0/1931L: Biomedical Engineering Design and Innovation II
<i>(35 undergraduate, 1 graduate; instructor is effective: 4.50; course is effective: 3.83)</i> | Spring 2024 |

Doctoral Theses Directed

- | | | |
|-----------------|------------------------|----------------|
| • Dennis Frazer | (Therapeutic Sciences) | 2025 – present |
|-----------------|------------------------|----------------|

- ShuLan Holmes-Farley (Biomedical Engineering) 2025 – present
- Isaac Diaz Becdach* (Biomedical Engineering) 2025 – present
*National Science Foundation Graduate Research Fellowship
*David and Susan Hibbitt Engineering Graduate Fellowship (2025-26), Brown University
- Angelina Schorr* (Biomedical Engineering) 2024 – present
*National Science Foundation Graduate Research Fellowship
*Hsu Engineering Fellowship, Brown University
- Joshua Acosta González* (Biomedical Engineering) 2024 – present
*IMSD@Brown T32 recipient
*GEM Fellowship
*Two-year Diversity Fellowship through Brown University

Master's Theses Directed

* thesis honors received

- Kevin Travieso# (Biotechnology) 2025 – present
*Recipient of the Biotechnology Summer Research Fellowship
- Aarya Reddy Pamudurthy (Biomedical Engineering) 2024 – present
Thesis title: Dual Functional siRNA Lipid Nanoparticles Targeting Tumor Associated Macrophages for HCK Silencing and STING Activation in Breast Cancer
- Francis Simpatico (Biomedical Engineering) 2024 – present
Thesis title: Engineering Macrophages in Regeneration and Degeneration
- Yaunghyun (Hailey) Kim (Biotechnology) 2024 – present
Co-advisor: Dr. Jeffrey Morgan
Thesis title: A 3D *In Vitro* Ring Model with Macrophage and Fibroblast Co-culture: A Platform for Preclinical Fibrosis Studies as an Alternative to Animal Testing
- ShuLan Holmes-Farley* (Biomedical Engineering) 2023 – 2025
Thesis title: Development of Multikinase Targeting siRNA with Optimized Lipid Nanoparticle Vehicle
*Master's Outstanding Thesis or Paper Award, Brown University School of Engineering
- Kadhambari Rajendran (Biomedical Engineering) 2023 – 2025
Thesis title: Optimization of Lipid Nanoparticles for miRNA Delivery to Breast and Colorectal Cancer

Graduate Rotation Students Advised

- Dennis Frazer (Ph.D. student, Therapeutic Sciences, Brown) Spring 2025

Undergraduate Honors Theses Advised

- Kyanna Barros, Biomedical Engineering, Class of 2026 2025 – present
Thesis title: An Agent-Based Modeling Framework for Simulating Immunoengineering Strategies in Intervertebral Disc Disease

Undergraduate Researchers Advised (Brown University, unless otherwise indicated)

* UTRA recipient

- Joseph Kelly#, Biomedical Engineering, Class of 2027 Summer 2025
#Byrant University, RI-INBRE SURF program
- Luke Guan*, Mathematics, Class of 2027 2025 – present
- Anneliese Baum*, Biomedical Engineering, Class of 2027 2025 – present
- Jake Delesky*, Cell and Molecular Biology, Class of 2027 2025 – present

- Connor Purcell, Biomedical Engineering, Class of 2024 2024 – present
- James (Jimmy) Lee, Biomedical Engineering, Class of 2027 Spring 2025, present
- Eric Yang, Applied Mathematics: Biology, Class of 2028 Spring 2025
- Lizeth Sanchez*, Biomedical Engineering, Class of 2025 2024 – 2025
- Adelaide Poulson*, Health and Human Biology, Class of 2026 Summer/Fall 2024

Ph.D. Thesis Committees Served On

- Angelica Salaverria (Therapeutics Sciences) Committee meeting: Dec, 2025
(Thesis Advisor: Dr. Nicole James)
- Alexxa Cruz-Bonilla (Biomedical Engineering) Qualifying exam: July, 2025
(Thesis Advisor: Dr. Ian Wong)
- Jean J. Jerome (Therapeutic Sciences) Qualifying exam: June, 2025
(Thesis Advisor: Dr. Tejal Desai)
- Audrey McCarthy (Biomedical Engineering) Qualifying exam: June, 2025
(Thesis Advisor: Dr. Tejal Desai)
- Sarah Planchak (Biomedical Engineering) Qualifying exam: March, 2025
(Thesis Advisor: Dr. Anubhav Tripathi)
- Zhaowei (Zoey) Jiang (Biomedical Engineering) Thesis defense: Nov., 2024
(Thesis Advisor: Dr. Anita Shukla)
- Isabelle Nagle (Chemistry) Qualifying exam: March 2025
(Thesis Advisor: Dr. Megan Kizer)
- Lily Cordner (Biomedical Engineering) Qualifying exam: June 2024
(Thesis Advisor: Dr. Ian Wong)
- Carolina Gomez Casas (Biomedical Engineering) Qualifying exam: June 2024
(Thesis Advisor: Dr. Anita Shukla)
- Camila Carvalho (Biomedical Engineering) Qualifying exam: June 2024
(Thesis Advisor: Dr. Anita Shukla)

Master's Theses Committees Served On

- Siddhi Tamaneekar (Biomedical Engineering) 2024 – 2026
(Thesis Advisor: Dr. Jonghwan Lee)
- Kruti Savani (Biomedical Engineering) 2024 – 2026
(Thesis Advisor: Dr. Michelle Dawson)
- Yiyin Chen (Biomedical Engineering) 2024 – 2026
(Thesis Advisor: Dr. Anubhav Tripathi)
- Brendan Knittle (Biomedical Engineering) 2023 – 2025
(Thesis Advisor: Dr. Tejal Desai)
- Edward Freeman (Biomedical Engineering) 2023 – 2025
(Thesis Advisor: Dr. Anubhav Tripathi)
- Jennifer Piserchia (Biomedical Engineering) 2022 – 2024
(Thesis Advisor: Dr. Anubhav Tripathi)
- Jennifer Figueroa-Cruz (Biomedical Engineering) 2022 – 2024
(Thesis Advisor: Dr. Anubhav Tripathi)

Undergraduate Theses Served as a Reader For

- Alejandra Hernandez Moyers (Biomedical Engineering & Neuroscience) 2022 – 2026
(Thesis Advisor: Dr. Anubhav Tripathi)
- Erica Sahin (Biomedical Engineering) 2022 – 2026

- (Thesis Advisor: Dr. Kareen Coulombe)
- Roberto Serrano-Pomales (Biomedical Engineering) 2022 – 2026
(Thesis Advisor: Dr. Anita Shukla)
- Albert Wu (Biomedical Engineering) 2020 – 2024
(Thesis Advisor: Dr. Qian Chen)

Exploratory Advisees

- Isabella Popescu 2025 – 2027
- Jack Curran 2025 – 2027
- Koray Kokturk 2025 – 2027
- Nora Nisson 2025 – 2027
- Sarah Shaw 2025 – 2027
- Victoria Lu 2025 – 2027
- Albert Bai 2024 – 2026
- Maximilian Bean-Tierney 2024 – 2026
- Roy Michaeli 2024 – 2026
- Theo Meyer 2024 – 2026
- Selena Enoch 2024 – 2025

Inclusive Teaching & Mentorship Training / Working Groups

- Advance RI-CTR Mentorship Training Certificate Program Feb. 27 – Mar.20, 2026
- “Proposal Development and Leadership” Workshops with AtKisson Training Group, LLC Mar. 11-12, 2026
Advance RI-CTR
- “Mentor Training: Supporting Well-Being & Fostering Work Life Integration” Feb. 27, 2026
Instructor Dr. Melissa Walsh, Pathobiology faculty mentor workshop, *Brown University*
- “The Leader as Coach: Moving Beyond Giving Advice to Real Impact” Feb. 25, 2026
Instructor Dr. Erin Hutchins, *Brown University*
- Mentorship Workshop “The Importance of Cultivating a Mentoring Tree” Feb. 19, 2026
Instructor Dr. Michele Grimm, University of Albany, *virtual*
- “Lessons in Leadership: Responsible AI: What Every Leader Needs to Know in 2026” Jan. 22, 2026
Instructor Dr. Baba Prasad, *virtual*
- “How to Help Someone in a Mental Health Crisis” Jan. 20, 2025
Instructor Personify Health and BCBS RI, *virtual*
- “OGS Mentor Training: Introduction and Maintaining Effective Communication” Sept. 22, 2025
Instructor Melissa Walsh, *Brown University*
- “AI in the Classroom: What Educators Need to Know - A Panel Discussion” Aug. 21, 2025
Moderated by Dr. Ishani Chandrasekara and Dr. Vincent Liardi, *virtual*
- “Game-Based Learning: Engaging Students in Higher Ed” webinar by Dr. Paul Darvasi Aug. 20, 2025
- Leader as Coach webinar by Mike Hutchins Aug. 6, 2025
“Leading through Complexity,” *virtual*
- Disability Literacy 101, Dr. Mariah Arral July 23, 2025
Disabilities Outreach & Inclusion an AIChE Community, *virtual*
- Applied Inclusive Leadership Seminar, Prof. Jarvis Sam, *Brown University* July 16, 2025
“Conscious Inclusion: How to Address and Overcome Implicit Bias”
- School of Engineering DEI Luncheon, Dr. Megan Dansby Russell Nov. 19, 2024
Working group for DEI initiatives within Engineering, *Brown University*
- Inclusive Mentoring Workshop: Building Equity-Minded Lab Environments, April 10, 2024
Dr. Bryan Dewsbury, *Brown University*
- Maximizing your Mentoring, Dr. Melissa Walsh, *Brown University* March 5, 2024

- Inclusive Pedagogy in Engineering, Dr. Stacey Lawrence, Engineering Faculty Retreat, *Brown University* Jan. 22, 2024
- Learning Equity and Diversity (LEADer) Certificate, *Massachusetts Institute of Technology* Winter 2023
- Kaufman Teaching Certificate, Teaching & Learning Laboratory, *Massachusetts Institute of Technology* Fall 2021

OUTREACH AND SERVICE

To the University

- Faculty Exploratory Advisor for Sophomore Engineering undergraduates 2025 – present
- Faculty Exploratory Advisor for First-year Engineering undergraduates 2024 – present
- I-BEAM BME Seminar Series Faculty Lead, *Brown University* 2024 – present
- Biomedical engineering PhD admissions Committee, *Brown University* 2024 – present
- Panelist/mentor, AIChE Alumni Panel – Career Paths, *Brown University* April 29, 2026
- Invited panelist, Engineering Board of Governors Meeting, *Brown University* April 23, 2026
- Therapeutic Sciences Graduate Program PhD admissions interviewer, *Brown University* Spring 2026
- Faculty panelist/mentor, Society of Women Engineers: Female Professors in Engineering Mentorship event for Freshman, *Brown University* Mar. 19, 2026
- Faculty mentor, Design x Health Careers in Healthcare and Design event, *Brown University* Nov. 13, 2025
- Faculty panelist, Brown Biomedical Engineering webinar for prospective graduate students Nov. 12, 2024
- Faculty mentor, Women in Science & Engineering (WiSE) Networking Gala, *Brown University* April 26, 2024

To the Profession

- Track chair for the annual 2026 BMES national conference "Nano and Micro Technologies" track 2026
- Invited Guest Editor, *BMC Cancer* "mRNA Vaccines for Cancer" 2026
- Early Career Board, *ACS Applied Bio Materials* 2025 – 2027
- DEI Chair, Society for Biomaterials Young Scientist Group (SFB YSG) 2025 – 2026
- Invited Guest Editor, *BMC Cancer* "mRNA Vaccines in Cancer" Journal Collection 2026
- Discussion Moderator, Career Planning room Association of MIT Alumnae (AMITA) Annual Women's Mentoring & Networking Event, *virtual* Jan. 28, 2026
- Poster Judge, American Chemical Society Northeast Regional Discussion, *Worcester, MA* 2025
- Reviewer, Women in Chemical Engineering (WIC) Travel Award, *AIChE* 2025
- Session Chair, Engineering Innate Immune Cells for Immunotherapy, I-BEAM Anti-Cancer Immunoengineering Symposium, *Brown University* 2025
- Invited Guest Editor, *JoVE Methods Collection* "Current Methods for the Development and Assessment of Nucleic Acid-Based Regenerative Immunotherapies" 2025
- Session Chair, RNA Biology: new challenges & new opportunities, Mini-Symposium: Exploring the Interface of RNA & Cancer Biology, *Brown University* Nov. 13, 2024
- Session Chair, AI/ML-guided Biomaterials Design and Synthesis, *BMES annual conference* 2024
- Abstract Reviewer, *BMES annual conference* 2024
- Reviewer, *Drug Delivery* 2026 – present
- Proposal Reviewer, *RI-INBRE* 2025 – present
- Reviewer, *Nature Nanotechnology* 2025 – present
- Reviewer, *Cell Cycle* 2025 – present
- Reviewer, *Molecular Therapy Nucleic Acids: Cell Press* 2024 – present

- Reviewer, *Nature Communications* 2023 – present

To the Community

- Invited researcher, *Annual American Cancer Society-Cancer Action Network, RI State House Cancer Action Day* to speak to local politicians about cancer funding and coverage in RI Mar. 26, 2026
- Invited speaker, *Laurelmead Cooperative*, an Independent Senior Living Center Nov. 19, 2025
- Invited researcher, *12th Annual American Cancer Society-Cancer Action Network Rhode Island Research Breakfast* for cancer survivors, politicians, and scientist Sept. 30, 2025
- Invited panelist, *Brown + Beyond: Advances in RNA research, Seattle, WA* With Christina Paxson, and Juan Alfonzo May 8, 2025
- Invited panelist, *Brown + Beyond: Advances in RNA research, San Fransico, CA* With Preetha Basaviah, and Juan Alfonzo May 6, 2025
- Invited panelist, *The next global pandemic: Are we ready?, Brown University School of Public Health , the Pandemic Center, and the Warren Alpert Medical School Joint event* March 5, 2025
- Faculty speaker, *Brown in Focus: Medicine A half-day immersion experience for local legislative constituents* Nov. 8, 2024
- Invited researcher, *11th Annual American Cancer Society-Cancer Action Network Rhode Island Research Breakfast* for cancer survivors, politicians, and scientist Oct. 2, 2024

AFFILIATIONS

- American Society of Cell and Gene Therapy (ASCGT) 2025 – present
- Biomedical Engineering Society (BMES) 2024 – present
- American Institute of Chemical Engineers (AIChE) 2024 – present
 - Society for Biological Engineering (SBE) 2025 – present
 - Women in Chemical Engineering (WIC) 2024 – present
 - Early Career Community (ECC) 2024 – present
- Society for Biomaterials (SFB) 2024 – present
 - Drug Delivery, Specific Interest Group of SFB 2024 – present