EVERETT J. MODING, MD, PhD

CURRICULUM VITAE

Updated 5/15/23

PERSONAL INFORMATION

Current Position	Assistant Professor, Radiation Oncology Stanford University Medical Center, Stanford, CA
Work Address	875 Blake Wilbur Dr. MC 5847 Stanford, CA 94305
Phone	(650) 498-1625
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Email	emoding@stanford.edu
EDUCATION	
8/2004-5/2008	Bachelor of Arts, Biochemistry, Summa Cum Laude The Colorado College, Colorado Springs, CO
8/2008-5/2015	Doctor of Medicine, Medical Scientist Training Program Duke University School of Medicine, Durham, NC
10/2010-5/2014	Doctor of Philosophy, Molecular Cancer Biology Duke University School of Medicine, Durham, NC
POSTDOCTORAL A	ND CLINICAL TRAINING
7/2015-6/2016	Internship, Internal Medicine

- 7/2016-6/2020 Moses H. Cone Memorial Hospital, Greensboro, NC Residency, Radiation Oncology Stanford University Medical Center, Stanford, CA
- 7/2018-6/2020 Postdoctoral Scholar, Laboratories of Drs. Maximilian Diehn and Ash Alizadeh Stanford University, Stanford, CA
- 7/2019-6/2020 Chief Resident, Radiation Oncology Stanford University Medical Center, Stanford, CA

EMPLOYMENT HISTORY

- 7/2020-10/2020 Clinical Instructor, Radiation Oncology Stanford University Medical Center, Stanford, CA
- 11/2020-Present Assistant Professor, Radiation Oncology Stanford University Medical Center, Stanford, CA

LICENSES AND CERTIFICATIONS

- 7/2016-Present Physician's License Medical Board of California
- 9/2021-Present Board Certified American Board of Radiology

1/2021-Present	Radiology X-ray Supervisor and Operator Certificate
	California Department of Public Health, Radiologic Health Branch

HONORS AND AWARDS

9/2003	City of Colorado Springs Mayor's 100 Teens
5/2004	Manitou Springs High School Valedictorian
8/2004	Mother Moon Service Scholarship
8/2004-5/2008	Barnes Chemistry Full Tuition Scholarship
5/2005-5/2008	Colorado College Dean's List
5/2005	Alpha Lambda Delta Honor Society
5/2005	First Year Chemistry Award
3/2006-5/2006	Biology in Chinese Culture Program Scholar
5/2006	William C. Champion Prize in Organic Chemistry
5/2007	American Chemistry Society Analytical Chemistry Award
6/2007-8/2007	University of California San Francisco Amgen Scholar
5/2008	Alpha Lambda Delta Book Award
5/2008	Frank Henry John Figge Award
5/2008	Merck Index Award in Biochemistry
5/2008	Phi Beta Kappa Honor Society
8/2008-5/2015	National Institutes of Health Medical Scientist Training Program Fellowship
6/2011	NASA Space Radiation Summer School Scholar
9/2011	Travel Support for NASA Space Radiation Investigators' Workshop
7/2012	Travel Support for NASA Space Radiation Investigators' Workshop
7/2012	NASA Space Radiation Graduate Student Poster Contest 2 nd Place
9/2012	Pharmacology and Cancer Biology Retreat Poster Contest Winner
3/2013	Fitzgerald Academic Achievement Award
9/2013	Radiation Research Society Scholars-in-Training Travel Award
9/2014	ASTRO Basic Science Abstract Award
10/2014	Best of ASTRO Meeting Abstract Selection
7/2018-3/2020	B. Leonard Holman Research Pathway
7/2019-6/2020	Stanford Radiation Oncology Kaplan Fellowship
11/2019	Radiation Research Society Scholars-in-Training Travel Award
1/2020	Society for Translational Oncology Fellows' Forum Participant
10/2021	Radiation Research Society Early Career Investigator Travel Award
11/2021	Connective Tissue Oncology Society Young Investigator Award

PUBLICATIONS

Peer-Reviewed Original Research Articles

- Moding EJ, Hellyer J, Rank K, Lostroh P, Brasuel M, Characterization of PEBBLEs as a Tool for Real-Time Measurement of *Dictyostelium discoideum* Endosomal pH. Journal of Sensors, 2009, 235158 (2009).
- Lee CL*, Moding EJ*, Huang X, Li Y, Woodlief LZ, Rodrigues RC, Ma Y, Kirsch DG, Generation of primary tumors with Flp recombinase in FRT-flanked p53 mice. Disease Models & Mechanisms, 5, 397-402 (2012).

*These authors contributed equally to this work.

- 3. Lee CL, **Moding EJ**, Cuneo KC, Li Y, Sullivan JM, Mao L, Washington I, Jeffords LB, Rodrigues RC, Ma Y, Das S, Kontos CD, Kim Y, Rockman HA, Kirsch DG, p53 Functions in Endothelial Cells to Prevent Radiation-Induced Myocardial Injury in Mice. **Science Signaling**, 5, ra52 (2012).
- 4. **Moding EJ**, Clark DP, Qi Y, Li Y, Ma Y, Ghaghada K, Johnson GA, Kirsch DG, Badea CT, Dual energy micro-computed tomography imaging of radiation-induced vascular changes in primary

mouse sarcomas. **International Journal of Radiation Oncology, Biology, and Physics**, 85, 1353-9 (2013).

- 5. Subashi E, **Moding EJ**, Cofer GP, MacFall JR, Kirsch DG, Qi Y, Johnson GA, A comparison of radial keyhole strategies for high spatial and temporal resolution 4D contrast-enhanced MRI in small animal tumor models. **Medical Physics**, 40, 22304 (2013).
- Clark DP, Ghaghada K, Moding EJ, Kirsch DG, Badea CT, In vivo characterization of tumor vasculature using iodine and gold nanoparticles and dual energy micro-CT. Physics in Medicine and Biology, 58, 1683-1704 (2013).
- Ashton JR, Clark DP, Moding EJ, Ghaghada K, Kirsch DG, West JL, Badea CT, Dual-Energy Micro-CT Functional Imaging of Primary Lung Cancer in Mice Using Gold and Iodine Nanoparticle Contrast Agents: A Validation Study. PLoS One, 9, e88129 (2014).
- 8. **Moding EJ**, Lee CL, Castle KD, Oh P, Mao L, Zha S, Min HD, Ma Y, Das S, Kirsch DG, *Atm* deletion with dual recombinase technology preferentially radiosensitizes tumor endothelium. **The Journal of Clinical Investigation**, 124, 3325-3338 (2014).
- Schönhuber N, Seidler B, Schuck K, Veltkamp C, Schachtler C, Zukowska M, Eser S, Feyerabend TB, Paul MC, Eser P, Klein S, Lowy AM, Banerjee R, Yang F, Lee CL, Moding EJ, Kirsch DG, Scheideler A, Alessi DR, Varela I, Bradley A, Kind A, Schnieke AE, Rodewald HR, Rad R, Schmid RM, Schneider G, Saur D, A next-generation dual-recombinase system for time- and host-specific targeting of pancreatic cancer. Nature Medicine, 20, 1340-1347 (2014).
- Liu Y, Ashton JR, Moding EJ, Yuan H, Register JK, Fales AM, Choi J, Whitley MJ, Zhao X, Qi Y, Ma Y, Vaidyanathan G, Zalutsky MR, Kirsch DG, Badea CT, Vo-Dinh T, A Plasmonic Gold Nanostar Theranostic Probe for In Vivo Tumor Imaging and Photothermal Therapy. Theranostics, 5, 946-60 (2015).
- 11. **Moding EJ**, Castle KD, Perez BA, Oh P, Min HD, Norris H, Ma Y, Cardona DM, Lee CL, Kirsch DG, Tumor cells, but not endothelial cells, mediate eradication of primary sarcomas by stereotactic body radiation therapy. **Science Translational Medicine**, 7, 278ra34 (2015).
- 12. Lee CL, Castle KD, **Moding EJ**, Blum JD, Williams N, Luo L, Ma Y, Borst LB, Kim Y, Kirsch DG, Acute DNA damage activates the tumour suppressor p53 to promote radiation-induced lymphoma. **Nature Communications**, 6, 8477 (2015).
- Moding EJ, Min HD, Castle KD, Ali M, Woodlief L, Williams N, Ma Y, Kim Y, Lee CL, Kirsch DG, An extra copy of p53 suppresses development of spontaneous Kras-driven but not radiation-induced cancer. JCl Insight, 1, e86698 (2016).
- Moding EJ, Million L, Avedian R, Ghanouni P, Kunder C, Ganjoo KN, Concurrent imatinib and radiation therapy for unresectable and symptomatic desmoid tumors. Sarcoma, 2017, 2316839 (2017).
- Chin AL*, Moding EJ*, Donaldson SS, Gibbs IC, Soltys SG, Hiniker SM, Pollom EL, Survival Impact of Postoperative Radiotherapy Timing in Pediatric and Adolescent Medulloblastoma. Neuro-Oncology, 20, 1133-1141 (2018).
 *These authors contributed equally to this work.
- 16. Castle KD, Daniel AR, **Moding EJ**, Luo L, Lee CL, Kirsch DG, Mice Lacking RIP3 Kinase are not Protected from Acute Radiation Syndrome. **Radiation Research**, 189, 627-633 (2018).
- 17. Cheung PF, Neff F, Neander C, Bazarna A, Savvatakis K, Liffers ST, Althoff K, Lee CL, **Moding EJ**, Kirsch DG, Saur D, Bazhin AV, Trajkovic-Arsic M, Heikenwälder M, Siveke JT, Notch-induced myeloid reprogramming in spontaneous pancreatic ductal adenocarcinoma by dual genetic targeting. **Cancer Research**, 78, 4997-5010 (2018).

- Wu Y, Million L, Moding EJ, Scott G, Berry M, Ganjoo KN, The Impact of Post-Operative Therapy on Primary Cardiac Sarcoma. The Journal of Thoracic and Cardiovascular Surgery, 156, 2194-2203 (2018).
- Moding EJ, Advani R, Rosenberg SA, Hoppe RT, Prognostic Factors and Patterns of Failure in Advanced Stage Hodgkin Lymphoma Treated with Combined Modality Therapy. Radiotherapy and Oncology, 129, 507-512 (2018).
- 20. **Moding EJ**, Liang R, Lartey FM, Maxim PG, Sung A, Diehn M, Loo BW, Gensheimer MF, Predictors of Respiratory Decline Following Stereotactic Ablative Radiotherapy to Multiple Lung Tumors. **Clinical Lung Cancer**, 20, 461-468 (2019).
- 21. Moding EJ, Liu Y, Nabet BY, Chabon JJ, Chaudhuri AA, Hui AB, Bonilla RF, Ko RB, Yoo CH, Gojenola L, Jones CD, He J, Qiao Y, Xu T, Heymach JV, Tsao A, Liao Z, Gomez DR, Das M, Padda SK, Ramchandran KJ, Neal JW, Wakelee HA, Loo BW, Lin SH, Alizadeh AA, Diehn M, Circulating Tumor DNA Dynamics Predict Benefit from Consolidation Immunotherapy in Locally Advanced Non-Small Cell Lung Cancer. Nature Cancer, 1, 176-183 (2020).
- 22. Hellmann MD, Nabet BY, Rizvi H, Chaudhuri AA, Wells DK, Dunphy M, Chabon JJ, Liu CL, Hui AB, Arbour KC, Luo J, Preeshagul I, Moding EJ, Almanza D, Bonilla RF, Sauter JL, Choi H, Tenet M, Abu-Akeel M, Plodkowski AJ, Perez-Johnston R, Yoo C, Ko RB, Stehr H, Gojenola L, Wakelee HA, Padda SK, Neal JW, Chaft JE, Kris MG, Rudin CM, Merghoub T, Li BT, Alizadeh AA, Diehn M, Circulating tumor DNA analysis to assess risk of progression after long-term response to PD-(L)1 blockade in NSCLC. Clinical Cancer Research, 26, 2849-2858 (2020).
- 23. Chabon JJ, Hamilton EG, Kurtz DM, Esfahani MS, Moding EJ, Stehr H, Martin JS, Nabet BY, Chen B, Chaudhuri AA, Liu CL, Hui AB, Jin MC, Azad TD, Almanza D, Jeon Y, Nesselbush MC, Ting Keh LC, Bonilla RF, Yoo CH, Ko RB, Chen EL, Merriott DJ, Massion PP, Mansfield AS, Jen J, Ren HZ, Lin SH, Costantino C, Burr R, Tibshirani R, Gambhir SS, Berry GJ, Jensen KC, West RB, Neal JW, Wakelee HA, Loo BW, Kunder CA, Leung AN, Lui NS, Berry MF, Shrager JB, Nair VS, Haber DA, Sequist LV, Alizadeh AA, Diehn M, Integrating genomic features for non-invasive early lung cancer detection. Nature, 580, 245-251 (2020).
- 24. Nabet BY, Esfahani MS, Moding EJ, Hamilton EG, Chabon JJ, Rizvi H, Steen CB, Chaudhuri AA, Liu CL, Hui AB, Almanza D, Stehr H, Gojenola L, Bonilla RF, Jin MC, Jeon Y-J, Tseng D, Liu C, Merghoub T, Neal JW, Wakelee HA, Padda SK, Ramchandran KJ, Das M, Plodkowski AJ, Yoo C, Chen EL, Ko RB, Newman AM, Hellmann MD, Alizadeh AA, Diehn M, Noninvasive Early Identification of Therapeutic Benefit from Immune Checkpoint Inhibition. Cell, 183, 363-376 (2020).
- 25. Binkley MS, Jeon YJ, Nesselbush M, Moding EJ, Nabet BY, Almanza D, Kunder C, Stehr H, Yoo CH, Rhee S, Xiang M, Chabon JJ, Hamilton E, Kurtz DM, Gojenola L, Owen SG, Ko RB, Shin JH, Maxim PG, Lui NS, Backhus LM, Berry MF, Shrager JB, Ramchandran KJ, Padda SK, Das M, Neal JW, Wakelee HA, Alizadeh AA, Loo BW, Diehn M, KEAP1/NFE2L2 mutations predict lung cancer radiation resistance that can be targeted by glutaminase inhibition. Cancer Discovery, 10, 1826–1841 (2020).
- 26. Avanzini S, Kurtz DM, Chabon JJ, **Moding EJ**, Hori SS, Gambhir SS, Alizadeh AA, Diehn M, Reiter JG. A mathematical model of ctDNA shedding predicts tumor detection size. **Science Advances**, 6, eabc4308 (2020).
- 27. Tätte K, Metspalu E, Post H, Palencia-Madrid L, Luis JR, Reidla M, Rea A, Tamm E, **Moding EJ**, de Pancorbo MM, Garcia-Bertrand R, Metspalu M, Herrera RJ. The Ami and Yami aborigines of Taiwan and their genetic relationship to East Asian and Pacific populations. **European Journal of Human Genetics**, 29, 1092-1102 (2021).
- 28. Kurtz DM, Soo J, Co Ting Keh L, Alig S, Chabon JJ, Sworder BJ, Schultz A, Jin MC, Scherer F, Garofalo A, Macaulay CW, Hamilton EG, Chen B, Olsen M, Schroers-Martin JG, Craig AFM, **Moding EJ**, Esfahani MS, Liu CL, Dührsen U, Hüttmann A, Casasnovas RO, Westin JR,

Roschewski M, Wilson WH, Gaidano G, Rossi D, Diehn M, Alizadeh AA. Enhanced detection of minimal residual disease by targeted sequencing of phased variants in circulating tumor DNA. **Nature Biotechnology**, 39, 1537-1547 (2021).

- Esfahani MS, Hamilton EG, Mehrmohamadi M, Nabet BY, Alig SK, King DA, Steen CB, Macaulay CW, Schultz A, Nesselbush MC, Soo J, Schroers-Martin JG, Chen B, Binkley MS, Stehr H, Chabon JJ, Sworder BJ, Hui AB, Frank MJ, **Moding EJ**, Liu CL, Newman AM, Isbell JM, Rudin CM, Li BT, Kurtz DM, Diehn M, Alizadeh AA. Inferring gene expression from cell-free DNA fragmentation profiles. **Nature Biotechnology**, 40, 585-597 (2022).
- Gutkin PM, von Eyben R, Chin A, Donaldson SS, Oh J, Jiang A, Ganjoo KN, Steffner RJ*, Moding EJ*, Hiniker SM*. Local control outcomes using stereotactic body radiotherapy or surgical resection for metastatic sarcoma. International Journal of Radiation Oncology, Biology, and Physics, 114, 771-779 (2022).
 *Co-senior authors.
- 31. Obeid JP, Hiniker SM, Schroers-Martin J, Guo HH, No HJ, **Moding EJ**, Advani RH, Alizadeh AA, Hoppe RT, Binkley MS. Investigating and modeling positron emission tomography factors associated with large cell transformation from low-grade lymphomas. **eJHaem**, 4, 90-99 (2022).
- 32. Bui NQ, Nemat-Gorgani N, Subramanian A, Torres IA, Lohman M, Sears TJ, van de Rijn M, Charville GW, Becker H, Wang DS, Hwang GL, Ganjoo KN*, **Moding EJ***. Monitoring sarcoma response to immune checkpoint inhibition and local cryotherapy with circulating tumor DNA analysis. Clin Cancer Res. Online ahead of print. https://doi.org/10.1158/1078-0432.CCR-23-0250. *Co-senior authors.

Other Peer-Reviewed Articles

- 1. Moding EJ, Kirsch DG, Genetically Modified Mouse Models of Lung Cancer. The Health Risks of Extraterrestrial Environments, https://three.jsc.nasa.gov/articles/MouseModels.pdf (2012).
- 2. **Moding EJ**, Kastan MB, Kirsch DG, Strategies for optimizing the response of cancer and normal tissues to radiation. **Nature Reviews Drug Discovery**, 12, 526-542 (2013).
- 3. **Moding EJ**, Mowery YM, Kirsch DG, Opportunities for Radiosensitization in the Stereotactic Body Radiation Therapy (SBRT) Era. **The Cancer Journal**, 22, 267-273 (2016).
- 4. **Moding EJ**, Diehn M, Wakelee HA, Circulating Tumor DNA Testing in Advanced Non-Small Cell Lung Cancer. **Lung Cancer**, 119, 42-47 (2018).
- 5. Blomain ES, **Moding EJ**, Liquid Biopsies for Molecular Biology-Based Radiotherapy. **International Journal of Molecular Sciences**, 22, 11267 (2021).
- 6. **Moding EJ**, Nabet BY, Alizadeh AA, Diehn M, Detecting liquid remnants of solid tumors: circulating tumor DNA minimal residual disease. **Cancer Discovery**, 11, 2968-2986 (2021).

Non-Peer-Reviewed Articles

1. Lee CL, **Moding EJ**, Kirsch DG, Reining in Radiation Injury: HIF2α in the Gut. **Science Translational Medicine**, 6, 236fs20 (2014).

Book Chapters

 Qian Y, Weiner JP, Moding EJ, Kovalchuk N, Koong AC, Hong TS, Chang DT, Liver. Stereotactic Radiosurgery and Stereotactic Body Radiation Therapy. Heron, D.E., Huq, M.S., Herman, J.M., ed., Demos Medical Publishing (2018).

INVITED TALKS/ORAL PRESENTATIONS

International

- 1. "Monitoring Radiation Response Using Circulating Tumor DNA." **Princess Margaret Cancer Centre Radiation Medicine Program Seminar**, Toronto, Canada, November 2019.
- "Sarcoma Cellular Ecosystems are Associated with Prognosis and Predict Immunotherapy Response." Connective Tissue Oncology Society Annual Meeting, Virtual Meeting, October 2021.
- "Radiation Biology: Fundamental Knowledge and Recent Advances." 5th Global Center for Biomedical Science and Engineering Summer School for Molecular Biomedical Science and Engineering, Sapporo, Japan, August 2022.
- 4. "Radiation treatment planning for soft tissue sarcomas." **Global Bridges Core Lecture Series**, Virtual Lecture, Africa, February 2023.
- 5. "Combining immunotherapy and radiotherapy in soft tissue sarcomas." **Immuno-Oncology Hong Kong Conference**, Hong Kong, April 2023.

National

- 1. "Genetic Analysis of Taiwanese Aboriginals Using Short Tandem Repeats." **Pew Midstates** Science and Mathematics Consortium, St. Louis, MO, October 2005.
- "Using Mouse Genetics to Dissect the Radiobiology of SBRT: Tumor Cells, Not Endothelial Cells, Regulate Local Control." 56th Annual American Society for Radiation Oncology (ASTRO) Meeting, San Francisco, CA, September 2014.
- "Dual Recombinase Technology Defines a Therapeutic Window for ATM Inhibitors to Selectively Radiosensitize Tumors." 56th Annual American Society for Radiation Oncology (ASTRO) Meeting, San Francisco, CA, September 2014.
- 4. "From slime mold to genetically engineered mice: how CC prepared me to be a physician scientist." **Colorado College Molecular Biology Day**, Keynote Speaker, Colorado Springs, CO, April 2016.
- "Circulating Tumor DNA Changes During Chemoradiation for Lung Cancer Predict Patient Outcomes." 61st Annual American Society for Radiation Oncology (ASTRO) Meeting, Chicago, IL, September 2019.
- 6. "Monitoring Radiation Response Using Circulating Tumor DNA." **University of Alabama at Birmingham Department of Radiation Oncology Seminar**, Birmingham, AL, October 2019.
- "Circulating tumor DNA as a biomarker of lung cancer response to chemoradiation and consolidation immunotherapy." 65th Annual Radiation Research Society Meeting, San Diego, CA, November 2019.
- 8. "Combining immunotherapy and radiation therapy for soft tissue sarcoma: SU2C-SARC032 correlative studies update." **NRG Sarcoma Working Group Meeting**, Virtual Meeting, July 2021.
- 9. "Opportunities and Challenges Toward the Clinical Application of ctDNA MRD Testing in Solid Cancers." **Association for Molecular Pathology Webinar**, Virtual Meeting, September 2021.
- 10. "Combining immunotherapy and radiation therapy for soft tissue sarcoma: update of the SU2C-SARC032 clinical trial and correlative studies." NCI Immuno-Oncology Translational Network Immuno-Radiotherapy Working Group, Virtual Meeting, November 2021.
- "Combining immunotherapy and radiation therapy for soft tissue sarcoma: update of SU2C-SARC032 correlative studies." NRG Semi-Annual Meeting-Sarcoma Working Group, Virtual Meeting, February 2022.
- 12. "Deciphering Cellular Ecosystems Associated with Clinical Outcomes in Soft Tissue Sarcoma." **Duke University Cancer and Radiation Biology Symposium**, Durham, NC, April 2022.

- 13. "Predicting and tracking response to immunotherapy in sarcomas." **Duke Cancer Institute Radiation Oncology and Imaging Program Annual Retreat**, Virtual Meeting, May 2022.
- 14. "Radiation Therapy for Soft Tissue Sarcomas: Current State of the Art and Future Directions." **ECOG-ACRIN Fall Group Meeting**, Washington, DC, October 2022.
- 15. "Evolutionary Pressures Shape Soft Tissue Sarcoma Development and Response to Radiotherapy." **NCCN Annual Conference**, Orlando, FL, March 2023.

Local

- "Knockdown of unfolded protein response sensor Ire1α via retrovirus and adenovirus delivered siRNA." Undergraduate Summer Research Program Poster Session and Oral Presentations, San Francisco, CA, August 2007.
- 2. "Dual recombinase technology defines a therapeutic window for ATM inhibitors during radiation therapy." **Duke MSTP Symposium**, Durham, NC, April 2014.
- 3. "Safety and Efficacy of SABR to Multiple Lung Tumors." **2017 Malcolm Bagshaw Visiting Professorship and Research Seminar**, Stanford, CA, March 2017.
- 4. "CNS Case Discussions." **Stanford Symposium on Contemporary Topics in Radiation Oncology**, Stanford, CA, September 2017.
- "Prognostic Factors and Patterns of Failure in Advanced Stage Hodgkin Lymphoma Treated with Stanford V and Radiotherapy." 2018 Malcolm Bagshaw Visiting Professorship and Research Seminar, Stanford, CA, March 2018.
- "Circulating Tumor DNA Analysis for Personalization of Consolidation Immunotherapy in Localized Non-small Cell Lung Cancer." 2019 Malcolm Bagshaw Visiting Professorship and Research Seminar, Stanford, CA, May 2019.
- 7. "Monitoring Radiation Response Using Circulating Tumor DNA." **Stanford University Department of Radiation Oncology Seminar**, Stanford, CA, November 2019.
- 8. "Resolving the radiation response of human cancers with circulating tumor DNA analysis." **Stanford Radiation Oncology Faculty Seminar Series**, Stanford, CA, November 2020.
- 9. "Radiation Cardiotoxicity." Cardio-Oncology Group Meeting, Stanford, CA, March 2021.
- 10. "New insights into solid cancers with circulating tumor DNA analysis." **T32 Chats**, Stanford, CA, May 2021.
- 11. "Non-invasive insights into human sarcoma biology." **Stanford Cancer Biology Journal Club**, Stanford, CA, November 2021.
- 12. "Predicting sarcoma response to immunotherapy." **Stanford Sarcoma Program Research Meeting**, Virtual Meeting, March 2022.
- 13. "Deconstructing evolutionary pressures during soft tissue sarcoma development and radiotherapy." **Radiation Oncology Department Retreat**, Stanford, CA, November 2022.
- 14. "Genomic biomarkers for precision therapy in soft tissue sarcomas." **Stanford Bass Center Grand Rounds**, Stanford, CA, March 2023.
- 15. "Deconstructing the role of the sarcoma microenvironment in prognosis and treatment response." **Stanford Radiation Oncology Faculty Seminar Series**, Stanford, CA, March 2023.

POSTER PRESENTATIONS

- 1. **Moding EJ**, Nguyen M, Garcia-Bertrand R, Genetic STR Analysis of the Bunun and Tsou Aboriginals of Taiwan, **Pew Midstates Science and Mathematics Consortium**, Chicago, IL, October 2004.
- 2. Moding EJ, Brasuel M, Coumarin 343 PEBBLEs selectively monitor intracellular magnesium ion concentrations inside *Dictyostelium discoideum*, 233rd American Chemical Society National Meeting, Chicago, IL, March 2007.
- Moding EJ, Lee CL, Blum JM, Sullivan JM, Jeffords LB, Rodrigues RC, Ma Y, Kim Y, Kirsch DG, Temporary knockdown of the tumor suppressor p53 during total-body irradiation prevents radiationinduced lymphomagenesis, 22nd Annual NASA Space Radiation Investigators' Workshop, League City, TX, September 2011.
- Moding EJ, Lee CL, Huang X, Kirsch DG, A p53^{FRT} mouse to generate tumors by FIp recombinase to allow for manipulation of the tumor microenvironment by Cre recombinase, AACR Tumor Microenvironment Complexity Special Conference, Orlando, FL, September 2011.
- 5. **Moding EJ**, Woodlief LZ, Lee CL, Ma Y, Kirsch DG, Role of p53 in Lung Carcinogenesis after Exposure to Space Radiation. **23rd Annual NASA Space Radiation Investigators' Workshop**, Durham, NC, July 2012.
- Moding EJ, Lee CL, Kirsch DG, Using dual recombinase technology to study the response of primary cancers to radiation therapy. 58th Annual Radiation Research Society Meeting, San Juan, PR, September 2012.
- Moding EJ, Min HD, Lee CL, Williams N, Woodlief LZ, Ma Y, Kirsch DG, Dissecting the Function of p53 in Lung Carcinogenesis Following Fractionated Exposure to X-rays and ⁵⁶Fe. Heavy Ion in Therapy and Space Radiation Symposium 2013, Chiba, Japan, May 2013.
- Moding EJ, Loss of ATM preferentially sensitizes proliferating tumor endothelial cells to radiation. 28th Annual National MD/PhD Student Conference, Keystone, CO, July 2013.
- Moding EJ, Lee CL, Min HD, Ma Y, Kirsch DG, Endothelial cell-specific deletion of ATM preferentially sensitizes proliferating tumor endothelial cells to radiation. 59th Annual Radiation Research Society Meeting, New Orleans, LA, September 2013.
- Moding EJ, Lee CL, Castle KD, Kirsch DG, Tumor cells, but not endothelial cells, mediate the eradication of primary cancers by radiation therapy. 60th Annual Radiation Research Society Meeting, Las Vegas, NV, September 2014.
- Moding EJ, Maxim PG, Diehn M, Loo BW, Gensheimer M, Safety and Efficacy of Stereotactic Ablative Radiotherapy (SABR) to Multiple (Three or More) Lung Tumors. 59th Annual American Society for Radiation Oncology (ASTRO) Meeting, San Diego, CA, September 2017.
- Moding EJ, Ranjana RH, Rosenberg SA, Hoppe RT, Prognostic Factors and Patterns of Failure in Advanced Stage Hodgkin Lymphoma Treated with Stanford V and Radiotherapy. 60th Annual American Society for Radiation Oncology (ASTRO) Meeting, San Antonio, TX, October 2018.
- 13. Moding EJ, Liu Y, Nabet BY, Chabon JJ, Chaudhuri AA, Hui AB, He J, Qiao Y, Heymach JV, Tsao A, Liao Z, Gomez DR, Ramchandran KJ, Neal JW, Wakelee HA, Loo BW, Lin SH, Alizadeh AA, Diehn M, ctDNA analysis for personalization of consolidation immunotherapy in localized non-small cell lung cancer. American Society of Clinical Oncology (ASCO) Annual Meeting, Chicago, IL, June 2019.
- 14. Moding EJ, Esfahani MS, Nabet BY, Liu Y, Chabon JJ, He J, Qiao Y, Xu T, Yao L, Gandhi S, Liao Z, Das M, Ramchandran KJ, Padda SK, Neal JW, Wakeless HA, Loo BW, Lin SH, Alizadeh AA, Diehn M, A mid-chemoradiation dynamic risk model integrating tumor features and ctDNA analysis for lung cancer outcome prediction. American Society of Clinical Oncology (ASCO) Annual Meeting, Virtual Meeting, May 2020.

- 15. Moding EJ, Liu Y, Hui AB, He J, Qiao Y, Xu T, Yao L, Gandhi S, Liao Z, Das M, Ramchandran KJ, Padda SK, Neal JW, Wakelee HA, Loo BW, Lin SH, Alizadeh AA, Diehn M, Circulating tumor DNA kinetics to identify genomic predictors of rapid response to chemoradiation in non-small cell lung cancer. American Association for Cancer Research (AACR) Radiation Science and Medicine Meeting, Virtual Meeting, March 2021.
- Moding EJ, Hui AB, Murciano-Goroff YR, Nabet BY, Schultz A, Qiao Y, Li BT, Lin SH, Alizadeh AA, Diehn M. Non-invasive identification of emergent mutations following cytotoxic therapy for lung cancer. American Society of Clinical Oncology (ASCO) Annual Meeting, Virtual Meeting, June 2021.
- 17. Sears TJ, Nemat-Gorgani N, Ballman KV, Mowery YM, Brigman BE, Riedel RF, Kirsch DG, Moding EJ. Digital cytometry reveals pro-inflammatory effects of radiation therapy on the sarcoma microenvironment. 67th Annual Radiation Research Society Meeting, Virtual Meeting, October 2021.
- 18. Nemat-Gorgani N, Subramanian A, Torres IA, Sears TJ, van de Rijn M, Wang DS, Hwang GL, Bui NQ, Ganjoo KN, Moding EJ. Monitoring soft tissue sarcoma response to immune checkpoint inhibition and cryotherapy with circulating tumor DNA analysis. Connective Tissue Oncology Society Annual Meeting, Vancouver, Canada, November 2022.
- 19. Subramanian A, Nemat-Gorgani N, Ellis-Caleo TJ, van IJzendoorn DGP, Sears TJ, Somani A, Luca BA, Zhou MY, Bradic M, Torres IA, Oladipo E, New C, Kenney DE, Avedian RS, Steffner RJ, Binkley MS, Mohler DG, Tap WD, D'Angelo SP, van de Rijn M, Ganjoo KN, Bui NQ, Charville GW, Newman AN, Moding EJ. Identification and validation of sarcoma cellular ecosystems associated with prognosis and predictive of immunotherapy response. American Association for Cancer Research Annual Meeting, Orlando, FL, April 2023.

GRANTS

Current Funding

7/2021-6/2023	Young Investigator Award National Comprehensive Cancer Network Foundation "Resolving sarcoma evolution during tumor development and radiation therapy" Role: PI
4/2022-4/2025	Career Development Award W81XWH-22-1-0161 Congressionally Directed Medical Research Program, Department of Defense "Tracking sarcoma response and resistance to radiation therapy" Role: PI
8/2022-6/2026	Mentored Clinical Scientist Research Career Development Award K08 CA255425 National Cancer Institute, National Institutes of Health "Non-invasive characterization of human soft tissue sarcoma response to radiation therapy" Role: PI
10/2022-9/2026	Research Project Grant 80ARC022CA003 National Aeronautics and Space Administration "Assessing Long-Term Effects of Radiation Exposure in Engineered Heart & Vascular Tissues" Role: Co-Investigator

Completed Funding

4/2013-5/2015	Predoctoral Fellowship F30 CA177220 National Cancer Institute, National Institutes of Health "Defining the cellular target of radiotherapy in primary mouse models of cancer" Role: PI
7/2018-6/2019	Research Resident Grant Radiological Society of North America "Circulating tumor DNA kinetics during radiation therapy as a prognostic biomarker for non-small cell lung cancer" Role: PI
7/2018-6/2019	Resident Seed Grant American Society for Radiation Oncology "Circulating tumor DNA kinetics during radiation therapy as a prognostic biomarker for non-small cell lung cancer" Role: PI
7/2020-6/2021	Conquer Cancer-GO ₂ Foundation for Lung Cancer Young Investigator Award American Society of Clinical Oncology "Identification of chemoradiation response mediators in non-small cell lung cancer via circulating tumor DNA analysis" Role: PI
3/2021-2/2022	Cancer Innovation Award Stanford Cancer Institute "A Multi-tiered Genomic and Transcriptomic Predictor of Response to Immunotherapy in Sarcomas" Role: Co-PI
8/2021-7/2022	SQIMM Award Stanford Cancer Center "Validation of sarcoma ecotypes as predictors of response to immune checkpoint inhibition" Role: PI

SERVICE

Professional Memberships

American Association for Cancer Research
Radiation Research Society
American College of Radiology
Radiological Society of North America
American Society for Radiation Oncology
American Society of Clinical Oncology
Northern California Radiation Oncology Society
Stanford Cancer Institute
Connective Tissue Oncology Society
Stanford Maternal & Child Health Research Institute

Administrative Roles

2009	Duke MSTP Science Advisory Committee Member
2010-2011	Duke School of Medicine Admissions Interviewer
2010-2013	Duke MSTP Davison Council Representative
2011-2012	Duke MSTP 2012 Symposium Planner

2017	Stanford Radiation Oncology MRI Simulation Workflow Committee
2020	Stanford Cancer Center South Bay Clinical Educator Interview Panel
2020	Stanford Radiation Oncology Residency Applicant Selection Committee
2020-2021	Stanford Cancer Biology Program Admissions Committee
2021	Stanford Cancer Biology Preview Program Faculty Mentor
2021-2022	Stanford Radiation Oncology Physician Scientist Search Committee
2020-Present	Stanford Cancer Institute Sarcoma Research Task Force
2020-Present	Stanford Radiation Oncology Residency Clinical Competency Committee
2022-Present	Stanford Radiation Oncology Computational Biologist Search Committee Chair

Ad Hoc Peer Review

2013-Present	International Journal of Radiation Oncology, Biology, and Physics
2020-Present	Molecular Cancer Therapeutics
2020-Present	Oncogene
2021-Present	Cancer Research
2021-Present	PLOS ONE
2021-Present	Journal of Molecular Diagnostics
2022-Present	British Journal of Cancer
2022-Present	Clinical Cancer Research
2022-Present	Nature Medicine
2023-Present	Genome Medicine

Grant Review

2021 Cancer Research Trust New Zealand

Abstract Review

2022	Radiation Research Society Annual Meeting
2023	American Association for Cancer Research Annual Meeting
2023	American Society for Radiation Oncology Annual Meeting

EDUCATIONAL ACTIVITIES

Clinical Lectures

- 1. "Unexpected Death in a Patient Undergoing Whole Brain Radiation Therapy." Morbidity and Mortality Conference, Stanford Department of Radiation Oncology, October 2016.
- 2. "Prostate Cancer Adjuvant and Salvage Radiation Therapy Case Discussion." Resident Lecture, Stanford Department of Radiation Oncology, November 2016.
- 3. "Genitourinary Cancer In-Service Question Review." Resident Lecture, Stanford Department of Radiation Oncology, November 2016.
- 4. "Soft Tissue Sarcoma Radiation Therapy Case Discussion." Resident Lecture, Stanford Department of Radiation Oncology, June 2017.
- 5. "Radiation Myelopathy After Post-Operative Spine Radiation Therapy." Morbidity and Mortality Conference, Stanford Department of Radiation Oncology, August 2017.
- 6. "Brain Metastases Radiation Therapy Case Discussion." Resident Lecture, Stanford Department of Radiation Oncology, August 2017.
- 7. "Genitourinary Cancer Anatomy and Overview." Resident Lecture, Stanford Department of Radiation Oncology, November 2017.

- 8. "Bladder Cancer Radiation Therapy Case Discussion." Resident Lecture, Stanford Department of Radiation Oncology, December 2017.
- 9. "Indolent Lymphoma Radiation Therapy Case Discussion." Resident Lecture, Stanford Department of Radiation Oncology, January 2018.
- 10. "Radiation Therapy for Hemoptysis." Morbidity and Mortality Conference, Stanford Department of Radiation Oncology, February 2018.
- 11. "Early Stage Invasive Breast Cancer." Resident Lecture, Stanford Department of Radiation Oncology, March 2018.
- 12. "Radiation Therapy for Non-Metastatic Rectal Cancer." Resident Lecture, Stanford Department of Radiation Oncology, August 2018.
- 13. "Craniospinal Irradiation Practical." Resident Lecture, Stanford Department of Radiation Oncology, August 2018.
- 14. "Vulvar Cancer Radiation Therapy Case Discussion." Resident Lecture, Stanford Department of Radiation Oncology, November 2018.
- 15. "Lung Cancer." Clinical Lecture Series for Physicists, Dosimetrists, and Therapists, Stanford Department of Radiation Oncology, November 2018.
- 16. "Lymphoma Anatomy and Overview." Resident Lecture, Stanford Department of Radiation Oncology, January 2019.
- 17. "Anorectal Cancer." Clinical Lecture Series for Physicists, Dosimetrists, and Therapists, Stanford Department of Radiation Oncology, January 2019.
- 18. "Meningioma and Schwannoma Radiation Therapy Case Discussion." Resident Lecture, Stanford Department of Radiation Oncology, August 2019.
- 19. "Mesothelioma and Thymoma Radiation Therapy Case Discussion." Resident Lecture, Stanford Department of Radiation Oncology, October 2019.
- 20. "Cervical Cancer Radiation Therapy Case Discussion." Resident Lecture, Stanford Department of Radiation Oncology, October 2019.
- 21. "Bladder Cancer Radiation Therapy Case Discussion." Resident Lecture, Stanford Department of Radiation Oncology, December 2019.
- 22. "Intact Prostate Cancer Radiation Therapy Case Discussion." Resident Lecture, Stanford Department of Radiation Oncology, December 2019.
- 23. "Contemporary Sarcoma Management." Resident Lecture, Stanford Department of Radiation Oncology, June 2021.
- 24. "Sarcoma Journal Club and Case Discussion." Resident Lecture, Stanford Department of Radiation Oncology, June 2022.
- 25. "Current sarcoma management and role of radiotherapy." Resident Lecture, Stanford Department of Radiation Oncology, April 2023.

Mentees/Advisees

2012-2015 Patrick Oh (Undergraduate Student): Supervised his undergraduate research teaching him mouse work, cell culture, and immunohistochemistry. Mentored him during his applications to medical school and radiation oncology residency.
 2016-2017 Duy Tran (Medical student): Mentored him during his second-year coursework and transition to clinical rotations through the Stanford Mentorship Academy for Resident Training.

2019-2020	Sophia Fay (Undergraduate Student): Taught her wet laboratory techniques and helped with her successful application for the Bio-X Undergraduate Fellowship
2020-2021	Max Devine (Assistant Clinical Research Coordinator): Mentored his research on genomic predictors of patterns of recurrence in sarcomas which he presented at the 2021 ASTRO Annual Meeting and helped with his successful application to medical school.
2020-2021	TJ Sears (Bioinformatician): Supervised multiple genomic and transcriptomic projects. Advised his successful application to Bioinformatics PhD Programs.
2020-Present	Fred Wu (Radiation Oncology Resident): Served as his faculty mentor and provided guidance on clinical training, research, and professional development.
2020-Present	Erik Blomain (Radiation Oncology Resident and Postdoctoral Scholar): Research mentor for his Holman Pathway project on sarcoma evolution during radiation therapy
2021-Present	Ziwei Wang (Postdoctoral Scholar): Research mentor for her postdoctoral research on rapid functional validation of cancer therapeutic targets in mice.
2021-Present	James Jahng (Postdoctoral Scholar): Research mentor for his postdoctoral fellowship Translational Research Institute for Space Health (TRISH) award.
2021-Present	Timothy Ellis-Caleo (Medicine Resident): Research mentor for his project on transcriptomic predictors of sarcoma response to immunotherapy.
2021-Present	Anish Somani (Undergraduate Student Intern): Research mentor for his project on computational approaches to evaluate tumor clonal evolution.
2021-Present	Eniola Oladipo (Assistant Clinical Research Coordinator): Research mentor for her project on sarcoma patterns of local recurrence.
2022	Mike Tsai (Graduate Student): Research mentor for rotation project studying the role of macrophage populations in sarcoma immunotherapy response and gualifying exam committee member.
2022	Allie Cheung (Undergraduate Student Intern): Research mentor for her summer project on genomic mediators of radiation response.
2022-Present	Agnes Ewongwo (Radiation Oncology Resident): Research mentor for her clinical project on sarcoma patterns of local recurrence.
2022-Present	Shaghayegh Soudi (Research Scientist): Research mentor for her projects exploring sarcoma evolution.
2022-Present	Stefano Testa (Medicine Resident): Research mentor for his project on microenvironment predictors of response to immune checkpoint inhibition.
2022-Present	Claire Johns (Pediatric Oncology Fellow): Research mentor for her project developing new circulating tumor DNA assays for pediatric sarcomas.

Training and Certifications

2009-Present	Collaborative Institutional Training Initiative (CITI) Biomedical Research Program
2020	Advancing Communication Excellence at Stanford (ACES) Workshop
2021	ACES 2.0 Workshop: Mastering Clinician-Clinician Communication through
	Relationship-Centered Skills