Brendan Reardon

Contact information

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Education

University of Limerick, Limerick, Republic of Ireland
Doctor of Philosophy in Cancer Genomics, 2023 - present

Brandeis University, Waltham, MA
Bachelors of Science in Physics, 2014

Research experience

Scientist II, March 2022 - present
Computational Biologist III, June 2019 - March 2022
Computational Biologist II, November 2017 - June 2019
Associate Computational Biologist, June 2015 - November 2017
Van Allen Laboratory, Dana-Farber Cancer Institute, Boston, MA

Associated Scientist, June 2015 - present
Cancer Program, Broad Institute of MIT & Harvard, Cambridge, MA

Undergraduate Research Assistant, May 2012 - May 2014
Radio Astronomy Group, Brandeis University, Waltham, MA

Visiting Summer Researcher, Summer 2013
Radio Astronomy & AGN Group, University College Cork, Cork, Ireland

Undergraduate Research Assistant, Summer 2011
Astronomy Group, University of Massachusetts Lowell, Lowell, MA

Professional experience

Visiting Software Developer, April 2016
Data Science & Data Engineering, Broad Institute, Cambridge, MA

Manager and Desktop Computing Specialist, May 2014 - May 2015
Library & Technology Services, Brandeis University, Waltham, MA

Student Manager & Help Desk Technician, April 2012 - May 2014
Library & Technology Services, Brandeis University, Waltham, MA

Technical skills

Languages: Python, SQL, Bash, R, HTML, CSS, LaTeX
Tools and Frameworks: Git, Docker, Google Cloud Platform

Peer reviewed publications

Jun, H., et al. A context-augmented large language model for accurate precision oncology medicine recommendations. *Cancer Cell* (2026).

Reardon, B., Culhane, A.C. & Van Allen, E.M. Convergence of machine learning and genomics for precision oncology. *Nat Rev Cancer* (2026).

Waks et al. Efficacy, safety, and predictive biomarkers of neoadjuvant nab-paclitaxel and pembrolizumab in hormone receptor-positive breast cancer: A randomized pilot trial. *Nat Commun* 16, 10705 (2025).

Tarantino et al. Genomic heterogeneity and ploidy identify patients with intrinsic resistance to PD-1 blockade in metastatic melanoma. *Sci Advances* (2025).

van de Haar, J. et al. ESMO Recommendations on clinical reporting of genomic test results for solid cancers. *Annals of Oncology* (2024).

Conway, J. R. et al. Somatic structural variants drive distinct modes of oncogenesis in melanoma. *Journal of Clinical Investigation* (2024).

Han, S., et al. Integrative Analysis of Germline Rare Variants in Clear and Non–clear Cell Renal Cell Carcinoma. *Eur Urol Open Sci* 62, 107-122 (2024).

Sehgal, K. et al. Dual Immune Checkpoint Inhibition in Patients With Aggressive Thyroid Carcinoma. *JAMA Oncology* (2024).

Huffman BM, Singh H, Ali LR, et al. Biomarkers of pembrolizumab efficacy in advanced anal squamous cell carcinoma: analysis of a phase II clinical trial and a cohort of long-term responders. *J Immunother Cancer*. 2024;12(1):e008436.

Mossanen M., Carvalho F., Muralidhar V., et al. Genomic Features of Muscle-invasive Bladder Cancer Arising After Prostate Radiotherapy. *Eur Urol*. (2022).

Schiantarelli J., Pappa T., Conway J., et al. Mutational Footprint of Platinum Chemotherapy in a Secondary Thyroid Cancer. *JCO Precis Oncol*. (2022).

Reardon, B., Moore, N.D., Moore, N.S., et al. Integrating molecular profiles into clinical frameworks through the Molecular Oncology Almanac to prospectively guide precision oncology. *Nat Cancer* (2021).

Reardon, B., Van Allen, E. M. Molecular profile to cancer cell line matchmaking. *Protocol Exchange*. (2021).

Keenan, T.E., Guerriero, J.L., Barroso-Sousa, R. et al. Molecular correlates of response to eribulin and pembrolizumab in hormone receptor-positive metastatic breast cancer. *Nat Commun* 12, 5563 (2021).

Camp, S.Y., Kofman, E., **Reardon, B.**, et al. Evaluating the molecular diagnostic yield of joint genotyping–based approach for detecting rare germline pathogenic and putative loss-of-function variants. *Genet Med* 23, 918–926 (2021).

Gurjao, C. et al. Discovery and Features of an Alkylating Signature in Colorectal Cancer. Cancer Discov. 11, 2446–2455 (2021).

Mahadevan, N. R. et al. Intrinsic Immunogenicity of Small Cell Lung Carcinoma Revealed by Its Cellular Plasticity. Cancer Discov. 11, 1952–1969 (2021).

Conway, J. R. et al. Integrated molecular drivers coordinate biological and clinical states in melanoma. Nat. Genet. (2020).

AlDubayan, S. H. et al. Detection of Pathogenic Variants With Germline Genetic Testing Using Deep Learning vs Standard Methods in Patients With Prostate Cancer and Melanoma. JAMA 324, 1957–1969 (2020).

Crowdis, J., He, M. X., **Reardon, B.**, Van Allen, E. M. CoMut: visualizing integrated

molecular information with comutation plots. Bioinformatics 36, 4348–4349 (2020).

Dietlein, F. et al. Identification of cancer driver genes based on nucleotide context. Nat. Genet. 52, 208–218 (2020).

Bellmunt, J., Kim, J., **Reardon, B.**, et al. Genomic Predictors of Good Outcome, Recurrence, or Progression in High-Grade T1 Non-Muscle-Invasive Bladder Cancer. Cancer Res. 80, 4476–4486 (2020).

McPherson, V.*, **Reardon, B.***, et al. A phase 2 trial of buparlisib in patients with platinum-resistant metastatic urothelial carcinoma. Cancer (2020).

Rusert, J. M. et al. Functional precision medicine identifies new therapeutic candidates for medulloblastoma. Cancer Res. (2020).

Kamran, S. C. et al. Integrative Molecular Characterization of Resistance to Neoadjuvant Chemoradiation in Rectal Cancer. Clin. Cancer Res. (2019).

AlDubayan, S. H. et al. Association of Inherited Pathogenic Variants in Checkpoint Kinase 2 (CHEK2) With Susceptibility to Testicular Germ Cell Tumors. JAMA Oncol 5, 514–522 (2019).

Mouhieddine, T. H. et al. The Role of Clonal Hematopoiesis of Indeterminate Potential (CHIP) in Multiple Myeloma: Immunomodulator Maintenance Post Autologous Stem Cell Transplant (ASCT) Predicts Better Outcome. Blood 132, 749–749 (2018).

Hanna, G. J. et al. Integrated genomic characterization of oral carcinomas in post-hematopoietic stem cell transplantation survivors. Oral Oncol. 81, 1–9 (2018).

AlDubayan, S. H. et al. Inherited DNA-Repair Defects in Colorectal Cancer. Am. J. Hum. Genet. 102, 401–414 (2018).

Bailey, M. H. et al. Comprehensive Characterization of Cancer Driver Genes and Mutations. Cell 173, 371–385.e18 (2018).

AACR Project GENIE Consortium. AACR Project GENIE: Powering Precision Medicine through an International Consortium. Cancer Discov. 7, 818–831 (2017).

Liu, D., Abbosh P, Keliher D, **Reardon, B.**, et al. Mutational patterns in chemotherapy resistant muscle-invasive bladder cancer. Nat. Commun. 8, 2193 (2017).

Cancer Genome Atlas Research Network. Integrated Genomic Characterization of Pancreatic Ductal Adenocarcinoma. Cancer Cell 32, 185–203.e13 (2017).

Mouw, K.W., Cleary J.M., **Reardon B**, et al. Genomic Evolution after Chemoradiotherapy in Anal Squamous Cell Carcinoma. Clin. Cancer Res. 23, 3214–3222 (2017).

Garofalo. A., Sholl, L., **Reardon, B.**, et al. The impact of tumor profiling approaches and genomic data strategies for cancer precision medicine. Genome Med. 8, 79 (2016).

Gabuzda, D., Knuettel, S., **Reardon, B.** Transverse Faraday-rotation gradients across the jets of 15 active galactic nuclei. Mon. Not. R. Astron. Soc. 450, 2441–2450 (2015).

Suggs LS, Rots G, Jacques J, Vong H, Mui J, **Reardon B**, Team IA2SD. "I'm Allergic

to Stupid Decisions": An m-health campaign to reduce youth alcohol consumption. Cases in Public Health Communication & Marketing. 2011;5:111-135

* designates equal contribution

Invited presentations

"Authorization of and access to precision oncology treatments in Europe and the Republic of Ireland"
eHealth-Hub All Island Form on Cancer Data, University of Limerick, January 2025. Limerick, Ireland.

"Making the precision oncology approval landscape of Europe and the Republic of Ireland programmatically available"
Division of Population Sciences Scientific Symposium, Dana-Farber Cancer Institute, May 2024. Boston, MA.

"Precision oncology approvals in Europe and Ireland"
University Hospital Limerick, May 2024. Limerick, Ireland.

"Clinical interpretation across federated health networks: an opportunity"
Amazon, January 2024. Boston, MA.

"CatVar use case: evidence curation for precision oncology knowledge bases"
Categorical Variation (CatVar) Global Alliance for Genomics & Health study group, December 2023.

"Return of results from next-generation sequencing assays"
Qiagen, November 2023.

"The blossoming field of clinical computational oncology, and why you should try interdisciplinary research"
American Cancer Society, Brandeis University, October 2023. Waltham, MA.

"Overview of the Molecular Oncology Almanac for variant interpretation"
Cancer Genomics Consortium (CGC) pre-conference workshop, August 2023. St. Louis, MO.

"Computationally aided clinical interpretation with the Molecular Oncology Almanac"
Variant Interpretation for Cancer Consortium (VICC) General Call, April 2023.

"Clinical interpretation of individual patient profiles with the Molecular Oncology Almanac"
Veteran Affairs (VA), August 2022. Boston, MA.

"Expanding clinical actionability in individual patient profiles with the Molecular Oncology Almanac"
Cancer Genomics Consortium (CGC), August 2022. St. Louis, MO.

"Expanding clinical actionability in individual patient profiles with the Molecular Oncology Almanac"
American Society of Clinical Oncology (ASCO) poster discussion section, June 2022. Chicago, IL.

"Clinical Interpretation in Precision Oncology"
All-Ireland Cancer Research Institute Workshop on Digital Health, April 2022.

Limerick, Ireland.

"Molecular Oncology Almanac, clinical interpretation of integrative molecular profiles to guide precision cancer medicine"
The Immuno-Oncology Translational Network Moonshot, November 2020.

"Clinical Interpretation of individual patient whole-exome and transcriptome data"
Center for Cancer Precision Medicine (CCPM), Dana-Farber Cancer Institute, March 2018. Boston, MA.

"Clinical Interpretation of individual patient whole-exome and transcriptome data"
Cancer Program, Broad Institute, January 2018. Cambridge, MA.

"Clinical Interpretation of Individual Cancer Genomes to Guide Patient Care"
Broad Institute Data Sciences & Data Engineering, May 2016

Poster presentations

"Making the precision oncology landscape of Europe and the Republic of Ireland programmatically accessible"
European Society for Medical Oncology (ESMO) Congress, September 2024. Barcelona, Spain.

"Expanding clinical actionability in individual patient profiles with the Molecular Oncology Almanac"
American Society of Clinical Oncology (ASCO), June 2022. Chicago, IL.

"A molecular oncology almanac for integrative clinical interpretation of molecular profiles to guide precision cancer medicine"
American Association of Cancer Research (AACR) Annual Meeting, April 2019. Atlanta, GA.

"Feature-based clinical interpretation of whole exome and transcriptome data for precision cancer medicine"
American Association of Cancer Research (AACR) Annual Meeting, April 2018. Chicago, IL.

"Feature-based clinical interpretation for integrative cancer genomics"
14th Annual Broad Institute Scientific Retreat, December 2017. Boston, MA.

"Computational analysis of clinically actionable genomic features: precision heuristics for interpreting the alteration landscape (PHIAL)"
American Association of Cancer Research (AACR) Annual Meeting, April 2017. Washington, D.C.

"Investigating the Proper Motions of the Blazar 1055+018"
Brandeis University Division of Science Summer Poster Symposium, Aug. 2012

Teaching experience

Brandeis University November 2016
Guest Instructor: COSI-178a Computational Molecular Biology

Splash! November 2012 - 2016
Open Source Computational Biology (2016), Storytelling through Screenwriting and Science (2014), Screenwriting for the Scientist (2012)

Honors & awards	**2nd place, 3 Minute Thesis - Health Sciences and Education Faculty Heat**, University of Limerick April 2024 "Is personalized cancer care in the public health system falling behind?"
	Provost's Undergraduate Research Fund, Brandeis University. April 2013 "Probing the Relativistic Jets of Active Galactic Nuclei", $2,500
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