



Science Advancement & Outreach
A DIVISION OF PETA

1536 16th St. N.W., Washington, DC 20036

March 18, 2026

Dear Clinical Trials & Translational Research Advisory Committee members:

On behalf of Science Advancement and Outreach, the biomedical science policy division of People for the Ethical Treatment of Animals, we request that the Clinical Trials and Translational Research Advisory Committee (CTAC) advise the National Cancer Institute (NCI) to prioritize translational cancer research that focuses exclusively on non-animal methods, and to end the conduct and funding of research that uses other animals. As CTAC evaluates the effectiveness of NCI's translational research enterprise and identifies opportunities with the greatest clinical value, prioritizing human-based approaches offers an important opportunity to improve the predictive value and clinical relevance of NCI-funded research.

Despite over 50 years of significant investment in cancer therapy research, the success rate for oncology drugs remains below 10%¹ and cancer continues to be the second leading cause of death in the U.S.^{2,3} A key explanation for this high failure rate is the continued conduct of and investment in cancer research and drug testing that uses animals. Genetic, molecular, immunological, and cellular differences between humans and other animals prevent experiments on animals from accurately identifying effective cancer therapies for humans.⁴ In addition, the methods used to create animal models of cancer—particularly xenografted and genetically engineered animals—fail to replicate the sporadic, heterogeneous nature of human tumors, producing results that do not translate to cancer patients.⁵

Human-based methods are offering powerful, translationally meaningful insights—often using a patient's own cancer cells—in a physiologically relevant environment.⁶ 3D human tissue models are being used to test potential cancer therapeutics,^{7,8,9,10,11} predict treatment response,^{12,13,14} identify biomarkers,^{15,16} and study the tumor microenvironment.^{17,18,19,20} Additionally, cancer genomics^{21,22,23} and machine-learning tools^{24,25,26,27,28,29} are transforming diagnosis and enabling real-time predictions of therapeutic response.

These recommendations and others are expanded on in our policy roadmap, [Research Modernization NOW](#), including an appendix relevant to Cancer on page 25.

By encouraging NCI to prioritize human-relevant research approaches, CTAC can align with NIH's Unified Strategy, which includes developing, validating, and scaling human biology-based, non-animal methods, and help strengthen the clinical value and efficiency of the translational cancer research pipeline.

Thank you for considering these recommendations.

Sincerely,

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- ¹ Wong CH, Siah KW, Lo AW. Estimation of clinical trial success rates and related parameters. *Biostatistics*. 2019;20(2):273-286. doi:10.1093/biostatistics/kxx069
- ² National Cancer Institute. Cancer statistics. Cancer.gov. May 9, 2024. Accessed March 11, 2026. <https://www.cancer.gov/about-cancer/understanding/statistics>
- ³ National Center for Health Statistics. Leading causes of death. Cdc.gov. September 17, 2025. Accessed March 11, 2026. <https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm>
- ⁴ Mak IW, Evaniew N, Ghert M. Lost in translation: animal models and clinical trials in cancer treatment. *Am J Transl Res*. 2014;6(2):114-118
- ⁵ Cheon DJ, Orsulic S. Mouse models of cancer. *Annu Rev Pathol*. 2011;6:95-119. doi:10.1146/annurev.pathol.3.121806.154244
- ⁶ Jean-Quartier C, Jeanquartier F, Jurisica I, Holzinger A. In silico cancer research towards 3R. *BMC Cancer*. 2018;18(1):408. doi:10.1186/s12885-018-4302-0
- ⁷ Dey M, Kim MH, Dogan M, et al. Chemotherapeutics and CAR-T cell-based immunotherapeutics screening on a 3D bioprinted vascularized breast tumor model. *Adv Funct Mater*. 2022;32(52):2203966. doi:10.1002/adfm.202203966
- ⁸ Raffo-Romero A, Ziane-Chaouche L, Salomé-Desnoullez S, et al. A co-culture system of macrophages with breast cancer tumoroids to study cell interactions and therapeutic responses. *Cell Rep Methods*. 2024;4(6). doi:10.1016/j.crmeth.2024.100792
- ⁹ Tavakoli N, Fong EJ, Coleman A, et al. Merging metabolic modeling and imaging for screening therapeutic targets in colorectal cancer. *NPJ Syst Biol Appl*. 2025;11(1):12. doi:10.1038/s41540-025-00494-1
- ¹⁰ Nguyen HT, Tirpakova Z, Peirsman A, et al. Embolization-on-a-chip: novel vascularized liver tumor model for evaluation of cellular and cytokine response to embolic agents. *Biofabrication*. 2025;17(4):10.1088/1758-5090/adfbc3. doi:10.1088/1758-5090/adfbc3
- ¹¹ Adnan D, de Barros NR, Santovito LS, et al. A patient-derived organ-on-chip platform for modeling the tumor microenvironment and drug responses in pancreatic cancer. *Adv Sci (Weinh)*. 2026:e08934. doi:10.1002/advs.202508934
- ¹² Sun H, Sun L, Ke X, et al. Prediction of clinical precision chemotherapy by patient-derived 3D bioprinting models of colorectal cancer and its liver metastases. *Adv Sci (Weinh)*. 2024;11(2):2304460. doi:10.1002/advs.202304460
- ¹³ Zhang W, Wu C, Huang H, et al. Enhancing chemotherapy response prediction via matched colorectal tumor-organoid gene expression analysis and network-based biomarker selection. *Transl Oncol*. 2025;52:102238. doi:10.1016/j.tranon.2024.102238
- ¹⁴ Oyama S, Matsuda A, Murakami R, et al. Pancreatic cancer organoids derived from EUS-guided fine needle aspiration specimens can be used to predict chemotherapy resistance. *Sci Rep*. 2025;15(1):23818. doi:10.1038/s41598-025-09395-z
- ¹⁵ Millen R, De Kort WWB, Koomen M, et al. Patient-derived head and neck cancer organoids allow treatment stratification and serve as a tool for biomarker validation and identification. *Med*. 2023;4(5):290-310.e12. doi:10.1016/j.medj.2023.04.003
- ¹⁶ Goluba K, Parfejevs V, Rostoka E, et al. Personalized PDAC chip with functional endothelial barrier for tumour biomarker detection: a platform for precision medicine applications. *Mater Today Bio*. 2024;29:101262. doi:10.1016/j.mtbio.2024.101262
- ¹⁷ Polidoro MA, Ferrari E, Soldani C, et al. Cholangiocarcinoma-on-a-chip: a human 3D platform for personalised medicine. *JHEP Rep*. 2024;6(1). doi:10.1016/j.jhepr.2023.100910
- ¹⁸ Deipenbrock A, Wilmes BE, Sommermann T, et al. Modelling of the multicellular tumor microenvironment of pancreatic ductal adenocarcinoma (PDAC) on a fit-for-purpose biochip for preclinical drug discovery. *Lab Chip*. 2025;25(9):2168-2181. doi:10.1039/d4lc01016g
- ¹⁹ Lacombe J, Dunn SE, Layac M, et al. A human 3D culture-organ-on-chip platform for investigating the tumor microenvironment response to ionizing radiation. *iScience*. 2025;29(1):114236. doi:10.1016/j.isci.2025.114236
- ²⁰ Ravi K, Zhang Y, Sakala L, et al. Tumor microenvironment on-a-chip and single-cell analysis reveal synergistic stromal-immune crosstalk on breast cancer progression. *Adv Sci (Weinh)*. 2025;12(16):e2413457. doi:10.1002/advs.202413457
- ²¹ Chen MM, Gao Q, Ning H, et al. Integrated single-cell and spatial transcriptomics uncover distinct cellular subtypes involved in neural invasion in pancreatic cancer. *Cancer Cell*. 2025;43(9):1656-1676.e10. doi:10.1016/j.ccell.2025.06.020
- ²² Regner MJ, Garcia-Recio S, Thennavan A, et al. Defining the regulatory logic of breast cancer using single-cell epigenetic and transcriptome profiling. *Cell Genom*. 2025;5(2):100765. doi:10.1016/j.xgen.2025.100765
- ²³ Lee MR, Kang S, Lee J, et al. Organoid morphology-guided classification for oral cancer reveals prognosis. *Cell Rep Med*. 2025;6(5):102129. doi:10.1016/j.xcrm.2025.102129
- ²⁴ Acanda De La Rocha AM, Berlow NE, Fader M, et al. Feasibility of functional precision medicine for guiding treatment of relapsed or refractory pediatric cancers. *Nat Med*. 2024;30(4):990-1000. doi:10.1038/s41591-02402848-4
- ²⁵ Tan CL, Lindner K, Boschert T, et al. Prediction of tumor-reactive T cell receptors from scRNA-seq data for personalized T cell therapy. *Nat Biotechnol*. 2024;1-9. doi:10.1038/s41587-024-02161-y
- ²⁶ Valanarasu JMJ, Xu H, Usuyama N, et al. Multimodal AI generates virtual population for tumor microenvironment modeling. *Cell*. 2026;189(2):386-400.e19. doi:10.1016/j.cell.2025.11.016
- ²⁷ Shadman H, Gomrok S, Litle C, et al. A machine learning-based investigation of integrin expression patterns in cancer and metastasis. *Sci Rep*. 2025;15(1):5270. doi:10.1038/s41598-025-89497-w
- ²⁸ Zhang H, Yang F, Xu Y, et al. Multimodal integration using a machine learning approach facilitates risk stratification in HR+/HER2- breast cancer. *Cell Rep Med*. 2025;6(2):101924. doi:10.1016/j.xcrm.2024.101924
- ²⁹ Zhao J, Li L, Wang Y, et al. Identification of gene signatures associated with lactation for predicting prognosis and treatment response in breast cancer patients through machine learning. *Sci Rep*. 2025;15(1):13575. doi:10.1038/s41598-025-98255-x