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## Training the Oncology Workforce: An Indispensable Role of NCI-Designated Cancer Centers

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### Commentary Overview

- Through dedicated support of cancer research, coordinated interdisciplinary teams, and access to cutting-edge technologies and treatments, NCI-Designated Cancer Centers are well positioned to achieve the goals of cancer prevention and increased quality and quantity of life for people with cancer.
- The Cancer Research Training and Education Core is an integral component of NCI designation. Two partners in cancer education are the NCI Center for Cancer Training and the Cancer Biology Training Consortium (CABTRAC).
- CABTRAC proposes to partner with AACI to advocate for maintaining and expanding the priority of cancer education as part of NCI designation to halt "brain drain" and maintain American leadership in cancer research.

Since 1900, the overall five-year survival rate for cancers has risen from under 10 percent to nearly 70 percent in 2025. Outcomes are even better at National Cancer Institute (NCI)-Designated Cancer Centers, where patients experience survival rates that are 9 to 25 percent higher than those treated at community hospitals. What explains these statistics? No single factor can account for those improvements nor the differential by treatment location. But dedicated support of cancer research, coordinated interdisciplinary teams, and access to cutting-edge technologies and treatments are critical.

Successes with patient care have been progressive, enabled by novel discoveries and

subsequent cures that were made possible by educating successive generations of trainees. Cancer centers are the focal point for educating oncology physicians, researchers, nurses, and other cancer caregivers. Each cancer center trains all these specialties, the confluence of which has accelerated the pace of discovery and delivery of care improvements to patients.

Today, 73 NCI-Designated Cancer Centers are spread across the country. We assert that NCI cancer centers provide the best model for achieving the goals of cancer prevention and increased quality and quantity of life for people with cancer. There is no better place to prepare, educate, train, and equip the people who will discover new cures and deliver them to patients than an NCI-Designated Cancer Center. Therefore, it is essential that the Cancer Research Training and Education Core (CRTEC) component remain an integral part of NCI designation.

## Partners in Cancer Education

Two partners in cancer education are the NCI Center for Cancer Training (NCCT) and the Cancer Biology Training Consortium (CABTRAC). NCCT was established over 50 years ago with a goal to "catalyze the development of a 21st century workforce capable of advancing cancer research through a scientifically integrated approach."

CABTRAC was established in 2005 by leaders of cancer education at 25 different institutions to assess how cancer biology is taught. In intervening years, more than 80 CABTRAC member institutions have exchanged best practices in cancer education and established criteria to assure competency of the cancer research workforce<sup>1, 2, 3</sup>. As importantly, CABTRAC has led efforts to re-envision funding mechanisms in cancer training by providing a platform for cancer education, training faculty and CRTEC leaders to share best practices, and successfully lobbying for changes in T32 and F-grant mechanisms at NCI.

In a recent perspective, thought leaders in cancer research described "clouds of complexity" based on progress made in recent decades and proposed at least 19 building blocks of cancer, from initiation to metastasis<sup>4</sup>. Unfortunately, the trainees needed to unravel this complexity are increasingly expressing despair in day-to-day conversations and are leaving the field or failing to join the cancer workforce altogether. If this alarming trend continues, a generation of cancer researchers will be lost. The result will be devastating. New discoveries and breakthroughs in cancer genomics, immunology, and drug resistance mechanisms will not happen – and neither will new diagnostic/prognostic tools and treatments.

CABTRAC proposes to partner with AACI to advocate for maintaining and expanding the priority of cancer education as part of NCI designation. We hope this partnership will halt the "brain drain" and maintain American leadership in cancer research, both tangible outcomes that are consistent with priorities of the public and lawmakers.

## Training the Oncology Workforce of the Future

With an aging population, the need for oncology trained caregivers is growing. The momentum of improved cancer outcomes can only accelerate if the workforce is trained, equipped, and deployed. Patients depend on all of us.

The model for cancer centers is a three-legged stool – basic research; clinical research; and prevention, control, and population-based research. The underpinnings of all three types of research require the high-quality education and training that have been integral to cancer centers since the beginning, even before they were formalized in Cancer Center Support Grant reviews. Maintaining the CRTEC component with all cancer centers is paramount to ensuring that progress against cancer will continue apace.

### References:

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<sup>2</sup>Welch DR, Antalis TM, Burnstein K, Vona-Davis L, Jensen RA, Nakshatri H, Riegel AT, Spitz DR, Watson DK, Weiner GJ, Cancer Biology Training C. Essential Components of Cancer Education. *Cancer Res.* 2015;75(24):5202-5. Epub 20151201. doi: 10.1158/0008-5472.CAN-15-2077. PubMed PMID: 26627010; PMCID: PMC4681646.

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<sup>4</sup>Swanton C, Bernard E, Abbosh C, Andre F, Auwerx J, Balmain A, Bar-Sagi D, Bernards R, Bullman S, DeGregori J, Elliott C, Erez A, Evan G, Febbraio MA, Hidalgo A, Jamal-Hanjani M, Joyce JA, Kaiser M, Lamia K, Locasale JW, Loi S, Malanchi I, Merad M, Musgrave K, Patel KJ, Quezada S, Wargo JA, Weeraratna A, White E, Winkler F, Wood JN, Vousden KH, Hanahan D. Embracing cancer complexity: Hallmarks of systemic disease. *Cell*. 2024;187(7):1589-616. Epub 2024/03/30. doi: 10.1016/j.cell.2024.02.009. PubMed PMID: 38552609; PMCID: PMC12077170.

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