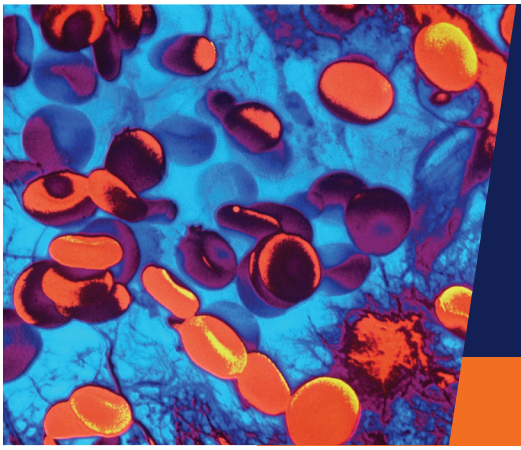


OCTOBER 2023
Issue 7

UVA Health

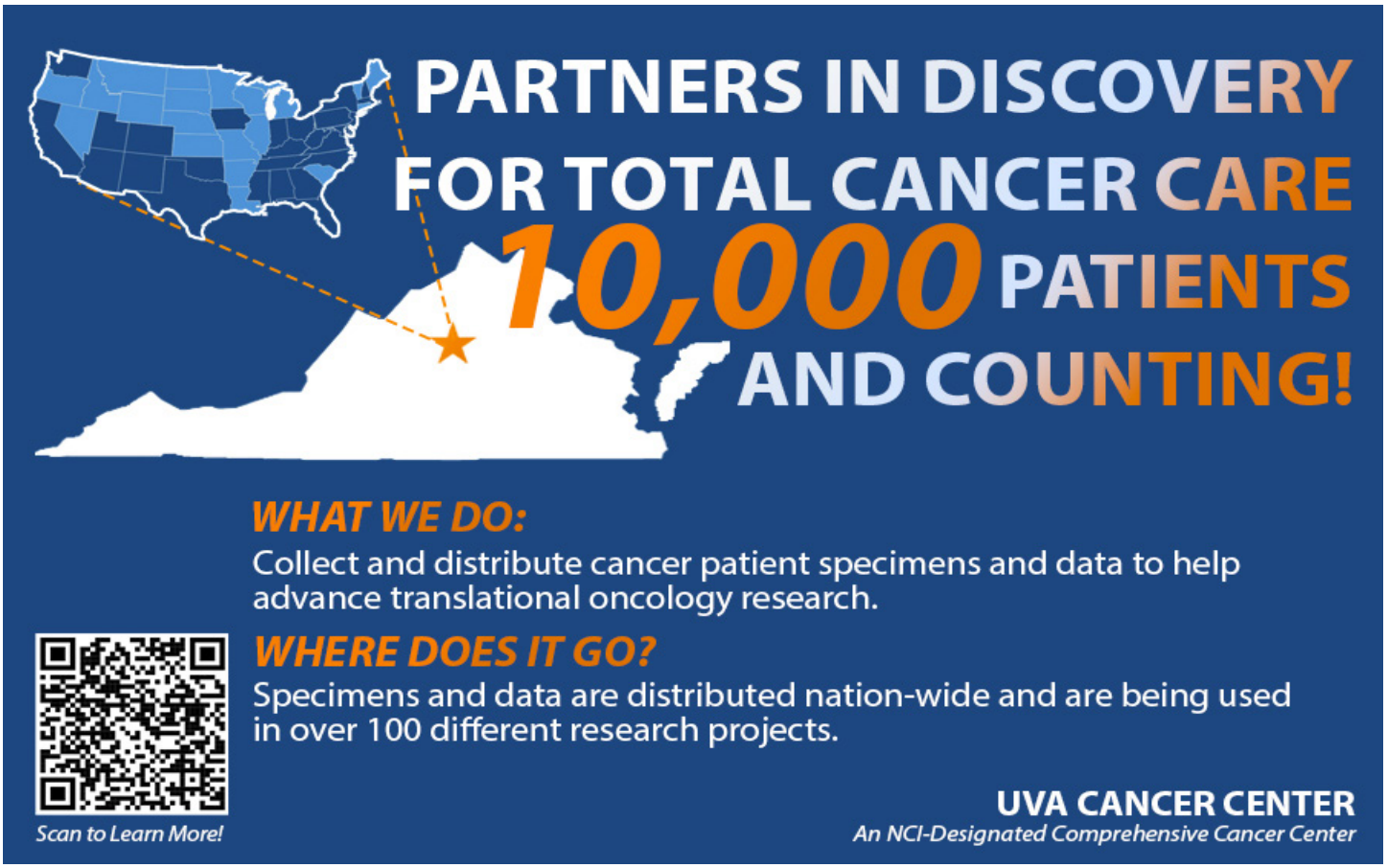
Partners in Discovery News

UVA CANCER CENTER An NCI-Designated Comprehensive Cancer Center

Dear Partner,

You are receiving this letter because you are a member of Partners in Discovery for Total Cancer Care at The University of Virginia (UVA), working together with our doctors and scientists to find new ways to detect, treat and cure cancer. Over the years, you have provided our researchers with immensely useful data by consenting to and signing the Partners in Discovery for Total Cancer Care informed consent. In addition to supporting research here at UVA, you are also partnered through us with three national research organizations that support cancer research across the country. They are the Oncology Research Information Exchange Network (ORIEN), a consortium of 18 cancer centers across the United States, the Cooperative Human Tissue Network (CHTN), sponsored by the National Cancer Institute, and the Applied Proteogenomics and Learning Outcomes (APOLLO) program supported by the federal Cancer Moonshot initiative.

In This Issue

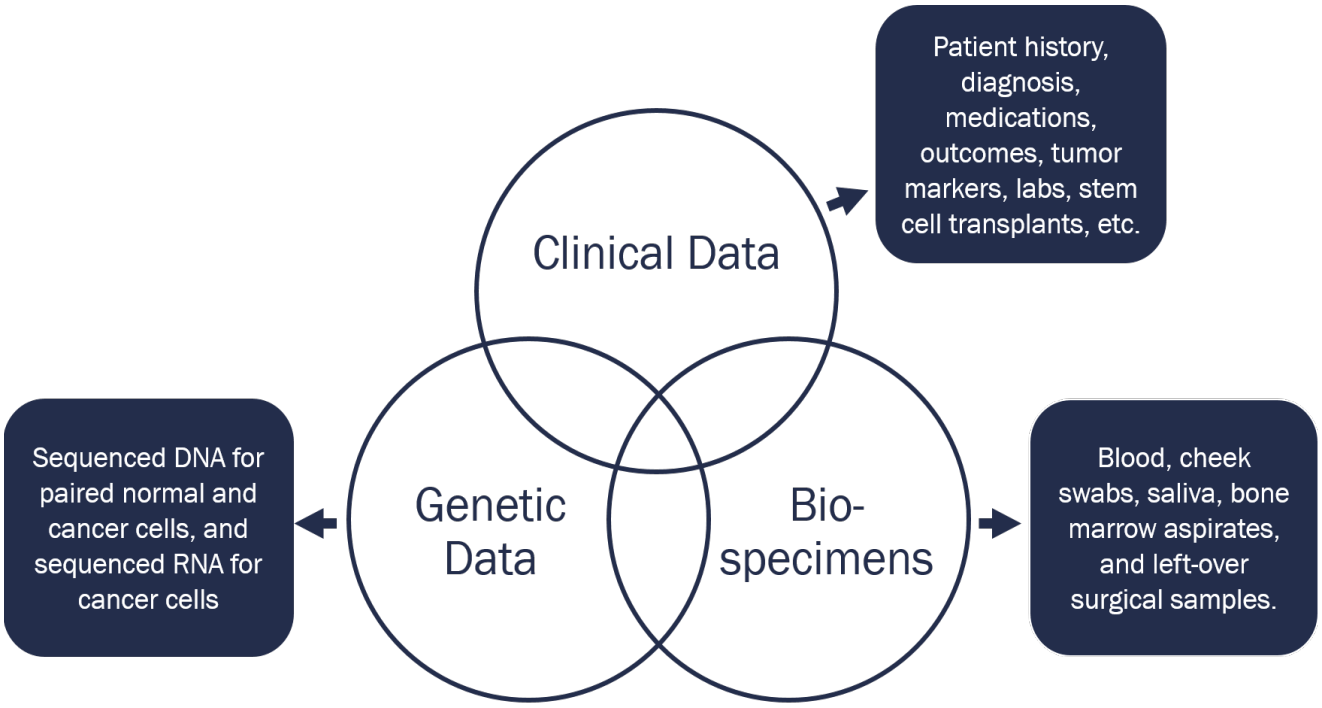


In this letter, we will share what you have contributed to our research efforts, and highlight a couple of recent discoveries researchers have made using the biospecimens and data you provided. Thank you!

Since 2015, when UVA first started this program, we have amassed an enormous amount of clinical data, biospecimens, and genetic data from our patient partners. **Clinical data** is collected when you come to UVA for your appointments, diagnosis, treatments, and surgeries. This data allows our researchers to study risks for cancer considering factors such as demographics, locations, and pre-existing conditions, to name a few. Clinical data is also important for understanding which cancers respond (or not) to various medications and treatments as well as for tracking survival. Tumor markers, a specific type of clinical data, can help doctor choose more tailored treatments. **Biospecimens** may be collected when your blood is drawn, when your cheeks are swabbed, and when there is tissue leftover from surgery. **Genetic data** is collected when paired biospecimens, which consist of both a patient's normal and cancer cells, are processed and their DNA sequenced. Paired biospecimens are especially valuable because they allow researchers to perform controlled experiments using both normal and cancerous cells, which is the gold standard in scientific research. Our goal is to ultimately collect paired biospecimens for all of our patient partners.

Thanks to you, the Partners in Discovery program reached two major milestones this year: the **10,000th** UVA patient partner joined the Partners in Discovery for Total Cancer Care protocol, and of them nearly **1,000** have contributed genetic data. Having such a large dataset for so many patients with different cancer types gives our researchers the opportunity to observe and understand cancer at every level, from specific gene mutations to population statistics.

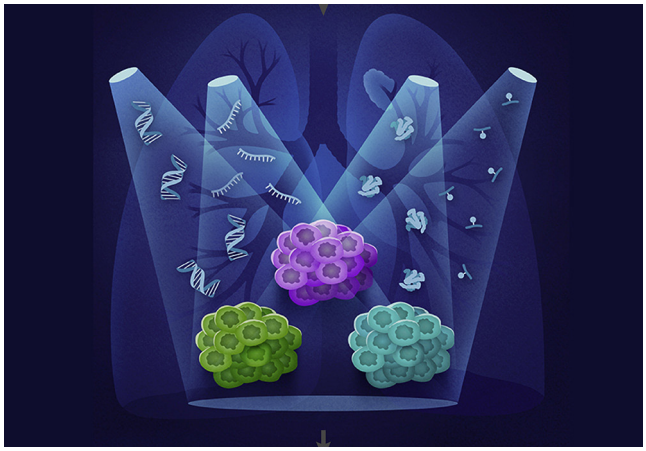
This dataset is helping researchers both at UVA as well as across the country study cancer to figure out better treatments for future patients.



Resources for researchers – cancer patient data

Deep Probe of the Cellular Machinery that Drives Lung Cancer Progression[1]

Lung cancer is one of the leading causes of cancer-related deaths in the US. It is often hard to treat because it is what researchers call “heterogeneous,” meaning there are millions of different types of lung cancer cells, each with unique strengths and weaknesses. To administer better treatments, researchers need to understand these different strengths and weaknesses.



Using the specimens you contributed to the Partners in Discovery for Total Cancer Care at UVA, the APOLLO program, including UVA researchers and partners across the country, took a close look at the proteins that drive the actions of individual cancer cells. Cancer cells were broken open to release proteins, which were then counted and categorized into different types. Using these results in combination with clinical data, researchers discovered new connections between the protein types found in the lung cancer cells and patient characteristics such as smoking history, including number of packs per year, race, and gender. This information will help doctors choose treatments for individual patients based on their specific characteristics.

Administering COVID Vaccine to Patients with Lymphoma or Leukemia[2]

Lymphoma and leukemia are cancers that can impair the ability of the body to produce antibodies, which fight viruses. Little is known about how patients with lymphoma or leukemia react to COVID vaccines. Using your consent and specimens, UVA researchers looked at the antibody responses in 56 patients who also received COVID vaccines. They measured the types of antibodies and cells the body produced in response to the vaccine. They found that despite having an impaired immune system, after receiving the vaccines patients were still able to increase their body’s supply of T cells, which help fight off infections. This evidence supports the importance of vaccination for these cancer patients.

These discoveries would not have been possible without the clinical data, biospecimens, and genetic data you provided. Thank you so much!

1. *Proteogenomic analysis of lung adenocarcinoma reveals tumor heterogeneity, survival determinants, and therapeutically relevant pathways*
Soltis et al, **Cell Reports Medicine**
2. *In-depth cellular and humoral dynamics of the response to COVID-19 vaccine booster in patients with chronic B-cell neoplasms*
Ayers et al, **Blood Cancer Journal**

If you get melanoma, which treatment is better suited for your lifestyle?

UVA Cancer Center researchers are interested in learning how to help people prevent melanoma, detect it early if it occurs, and better understand how to help patients recover from their treatment and regain their quality of life. Some of you may be contacted by mail or email in the near future because you've had personal experience with this cancer. The goal of these studies is to help researchers determine which programs and treatments lead to better quality of life so they can be applied more generally.

Stay tuned for this upcoming study!

Thank you so much for your participation and donations of time, specimens, and data. We could not have accomplished any of this without your generous involvement.

Any questions, concerns about the program, or to opt-out of the newsletter email:

ORIEN@uvahealth.org.

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