

A POST-PANDEMIC ROAD MAP FOR CARE

America's emergence from the Covid-19 crisis has positioned health systems and other care providers with a better understanding of – and a renewed focus on – where to direct resources in the fight against cancer

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Mayo Clinic is never going back. ¶ Covid-19 didn't just interrupt medicine. It fundamentally upended how the institution's cancer care center runs, fast-tracking changes that had been percolating since well before the pandemic. It's caused organizations like Mayo to throw out their old playbooks in favor of new crisis-era approaches, from prevention to diagnosis to treatment, that are poised to become permanent ways of business. ¶ "We had directions we wanted to go as an institution 10 years down the road, and we're a heck of a lot closer than we ever thought we would be at this point," said Dr. Robert McWilliams, a medical oncologist at Mayo Clinic in Rochester, Minnesota.

Many care providers now face a turning point as they recalibrate their models based on lessons from the crisis and invest more dollars in both facilities and telehealth to increase access, improve outcomes and make cancer care more equitable for patients. It's hard to measure the full financial impact of this reset of a billions-dollar cancer care industry, but experts say it will both benefit patients and help lower costs long term.

"There have been unprecedented changes in cancer care and cancer research with the pandemic," said Dr. Robert Vonderheide, director of the University of Pennsylvania Abramson Cancer Center. "Part of that was not beneficial, and we are recovering. But part of it was eye-opening, and we found new opportunities."

The demand has surely not ebbed. The cancer death rate continues to drop, but the U.S. is projected to see an estimated 1.9 million new cancer diagnoses and 609,360 deaths in 2022 alone, according to the American Cancer Society.

Fortunately, ACS CEO Karen Knudsen said, "breakthroughs are coming at a faster



ROBERT MCWILLIAMS,
Mayo Clinic



KAREN KNUDSEN,
American Cancer Society



CRAIG BUNNELL,
Dana-Farber Cancer Institute

rate than ever." And the cancer care industry discovered a new research prototype from the private sector's rapid development of Covid-19 vaccines, bolstered by unprecedented federal dollars. Add in some momentum from the White House's relaunched Cancer Moonshot, and the opportunity quotient is high.

"The bad news is that business is good," said Dr. Louis Weiner, director of Washington, D.C.'s Georgetown Lombardi Comprehensive Cancer Center and MedStar Georgetown Cancer Institute. "We have no shortage of patients who want to see us."

A CHANGED SYSTEM OF CARE

Cancer care providers had to learn how to protect their patients from Covid as fast as the virus initially tore through their communities.

They limited volumes in waiting rooms, restricted visitors, implemented new infection control protocols, set up antibody therapy clinics and added drive-thru testing. They leaned on technology more than they ever could before as reg-

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ulators loosened restrictions, temporarily giving doctors the license to see patients virtually across state lines. Above all, cancer centers realized unexpected benefits, from safety to efficiency to convenience.

Now, they say, many of these approaches could and should translate to a post-pandemic world.

But the coronavirus affected cancer centers differently than other medical providers: Their patients are disproportionately vulnerable to Covid infection and its adverse side effects. So, while many patients continued receiving treatments during coronavirus surges, many more than before put off screenings for breast, colorectal, prostate, cervical and other cancers – and now return with more advanced tumors. Experts don't yet know the full health impact, but early estimates suggest the drop in early detection could mean thousands of additional deaths in years to come.

When patients did start returning for mammograms, colonoscopies and other preventive measures in the last year-plus, many clinics lacked the capacity or ready machinery to handle them, creating a logjam. "It's like you've closed down all of the lanes on a toll-booth, and now you open it," said Dr. William Nelson, director of the Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins. But even with the backlog easing lately, he said, "the amount of screening hasn't fully caught back up."

The lag has sparked efforts to grow screening volumes, through education about home-based early detection kits and data-driven outreach with community partners, especially in underserved communities that were hit harder by Covid, said Dr. Michael Teitell, director of the UCLA Jonsson Comprehensive Cancer Center. "The best thing we can hope for is we can get them in as quickly as we can and catch up as fast as we can."

CLINICAL RESEARCH'S HURDLES

Clinical trials help bring new treatments to market, but they also give cancer patients early access to the most advanced therapies. Studies are also vital to a health center's business model, by pulling in

patients and generating revenue themselves.

Some organizations such as Dana-Farber Cancer Institute in Boston and New York University Langone Health's Perlmutter Cancer Center stayed on enrollment schedules throughout the pandemic, while others, including UCLA and Cleveland Clinic, actually saw hikes in enrollment. But many initially were forced to close parts of their research enterprises, whether because of infection risk, dwindling staff or limited resources. Early reports showed enrollment for some dropped as much as 40% before bouncing back.

And everyone had to adjust how they ran research without requiring frequent visits, in some cases, across hundreds of miles to their campuses. They had to figure out how to ship drugs, enable electronic consent and facilitate lab tests closer to home. Decentralized trials, which move more standardized elements of the process like bloodwork and imaging to local sites, enabled more people to stay on board.

"If we're able to retain some of those changes moving forward," said Dr. Grzegorz Nowakowski, a Mayo Clinic hematologist, "we could actually get more people on the clinical trials that benefit from the clinical trials in the first place."

It's unclear how much longer we'll see this emergency easing of trial regulations – a disconcerting thought to Dr. Craig Bunnell, Dana-Farber's chief medical officer. "We learned a lot in the last two years, and I fear that we may squander what little good could have come of this."

Labor challenges don't help. Trials have become increasingly complex in the past decade, requiring more training. Covid squeezed bandwidth, pulling away nurses and navigators involved in studies, while the Great Resignation drove a mass exodus from medical centers to higher-paying contract research organizations. And that has made both starting and enrolling for trials that much tougher.

"There's not a steady stream of folks coming back in," said Dr. Aaron Gerds, deputy research director at the Cleveland Clinic Taussig Cancer Institute, of available staffing. "So, the people who remain are

POINTS OF CARE: GREATER WASHINGTON'S EXAMPLES



JOANNE S. LAWTON / WBJ

Inova Saville Cancer Screening and Prevention Center

Location: Fairfax

Cost: \$14 million

Inova Health System's new cancer screening center opened in early May at its Inova Schar Cancer Institute at 8081 Innovation Park Drive. Inova funded half of the 24,000-square-foot center, with the other half backed by a \$20 million donation in November 2020 from Paul Saville – now executive chairman of Reston homebuilder NVR Inc. – and his wife, Linda. Their remaining funds will support operations.



GEORGETOWN UNIVERSITY

Ralph Lauren Center for Cancer Prevention

Location: Southeast D.C.

Cost: Declined to disclose

The Georgetown Lombardi Comprehensive Cancer Center will receive some of a \$25 million commitment from the Ralph Lauren Corporate Foundation for its Capital Breast Care Center. The practice at 1000 New Jersey Ave. SE offers transportation and navigation for breast cancer patients and will expand that to colorectal, lung and prostate cancers, which disproportionately affect the region's most vulnerable patients.



UM CAPITAL REGION HEALTH

University of Maryland Capital Region Health Regional Cancer Center

Location: Largo

Cost: \$67 million

The year-old UM Capital Region Medical Center broke ground on its regional cancer center in April with plans to deliver in spring 2024. The center, which is the regional arm of the larger University of Maryland Medical System based in Baltimore, will provide comprehensive cancer care services starting with breast, colorectal, lung and prostate cancers. The total state funding includes a \$27 million commitment from Gov. Larry Hogan.

stretched even thinner trying to do the same job that multiple people were doing before."

THE FUTURE OF CANCER CARE

Medicine today must meet patients where they are, experts agree. The cancer space is no exception.

Regional health systems across the country are increasingly standing up their own cancer centers and practices, crucial for patients with straightforward cases in more rural and underserved areas. It's also good business: The drugs are costly and can be well-reimbursed, making oncology one of the top revenue-producing service lines nationally.

With an aging population, demand is rising for more care closer to home. Even the country's largest National Cancer Institute-designated medical centers are looking to more permanently allow patients to get blood tests or imaging outside of their vaunted campuses.

UCLA's ambulatory care network has been expanding its footprint, now with 19 clinical oncology practices north and south of Los Angeles County, and the institution's Clinical Research Unit, for example, expects to have a roughly \$20 million budget for fiscal year 2023 – to help open and operate new and ongoing trials across its network. Meanwhile, Dana-Farber just launched a pilot to bring oncology care to patients' homes.

"We think it's the right thing to do," said Bunnell of Dana-Farber. "We're hoping the financial models will catch up or we'll be able to help create them."

The push to reshape care mirrors similar efforts in clinical research. There's renewed interest in simplifying clinical trial design and eligibility criteria given that the regulatory burdens on participants can often exacerbate health disparities between the haves and have-nots. Streamlining studies not only helps bolster recruitment and get treatments to patients faster, it also "would make clinical trials much cheaper, and then the cost of developing a drug would be much lower," said Dr. Antoni Ribas, past president of the American Association for Cancer Research and chair of its Covid-19 and Cancer Task Force.

Cancer centers are already working differently with the

Food and Drug Administration to meet requirements more in parallel to speed up the regulatory process. And with health equity as a priority, the FDA has introduced guidelines to include more underrepresented populations in trials to ensure the products being tested benefit the people who need them.

"We have to be really holistic in the way that we look at patients, that we address all of the barriers, including non-medical barriers, to cancer care and clinical trial participation," said Dr. Michael Ybarra, an emergency medicine physician and vice president of medical affairs and strategic alliance at Pharmaceutical Research and Manufacturers of America, the D.C. trade association for the biopharmaceutical industry.

Many health systems are carrying those teachings forward from the pandemic – notifying patients when they're due for appointments via personalized methods, using remote monitoring devices to record patient vitals and predict side effects, rethinking how they offer flexibility to employees, and working to close the digital divide so telehealth doesn't perpetuate the cancer disparity.

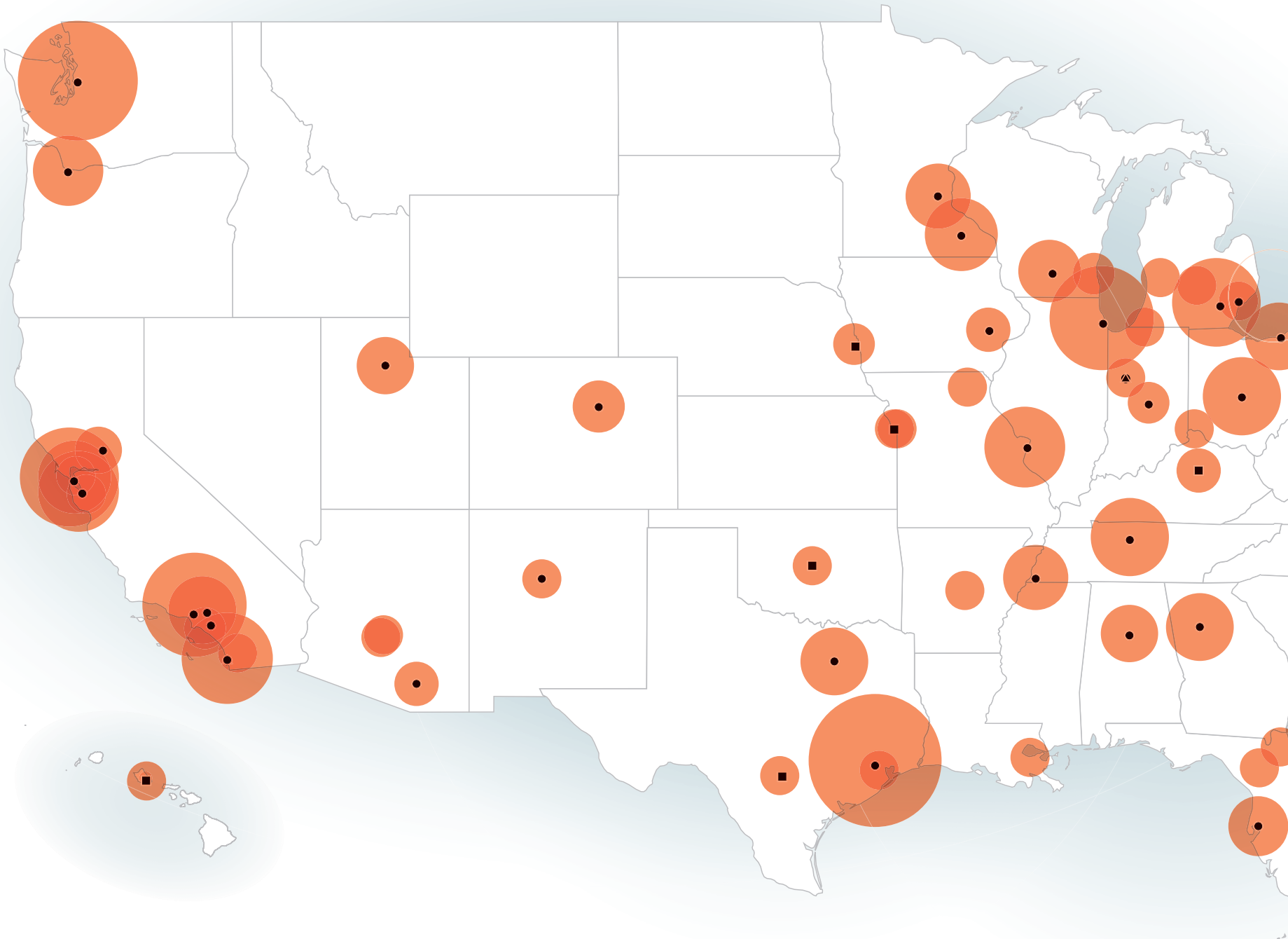
"When the scientific community and the industry join forces and aggressively try to do something, you have quick outcomes. I personally think this should happen in cancer, too" said Dr. Leonidas Platanius, director of Northwestern University's Robert H. Lurie Comprehensive Cancer Center. But compared to Covid, he added, "cancer is much more complicated."

For Mayo Clinic, it starts with making medical care more scalable "so not everything is a face-to-face, one-on-one, individual visit," McWilliams said – think broader screening capabilities, case management through telehealth, virtual lab results, and greater genomic and molecular advancements in imaging. Such changes, which could lower costs, will require more collaboration between regulators, payers, providers, industry and government – an often elusive goal, until now.

The pandemic "clarified where we need to go as a health care system," McWilliams said. "I think if you can take something positive away from a worldwide tragedy, that would be it." ❧

THE (INCOMPLETE) STATE OF CANCER FUNDING

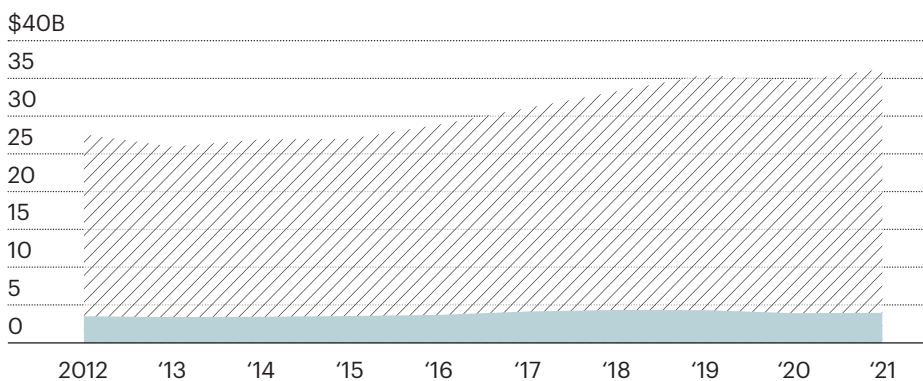
This map illustrates the 100 locations to receive the most federal funding for cancer research from the National Cancer Institute, part of the National Institutes of Health, in fiscal years 2019 through 2021. NCI's own budget totaled \$6.9 billion in fiscal 2022, including \$194 million allotted for President Joe Biden's revived Cancer Moonshot. It delivered money to 71 NCI-designated cancer centers, more than 5,000 grant recipients and 2,500 clinical trial sites across the U.S., among other initiatives. Much of those resources, not to mention additional federal funding for cancer-related research from the Department of Defense and other NIH branches, are concentrated in major cities in the Northeast, West Coast and Midwest — with swaths of the country getting little to no funding from those sources. ¶ Those gaps present new opportunities for care providers, particularly in light of the health sector's lessons learned coming out of the Covid-19 pandemic. To be sure, the vast majority of cancer-related funding stems from private sources — health systems, research colleges and universities, foundations, nonprofits, philanthropy and the pharmaceutical industry, just to name a few, making it difficult to quantify total spending on cancer research and treatment. The American Cancer Society alone has invested \$3.1 billion since 1991, while member companies of pharmaceutical trade industry group PhRMA collectively invested \$91.1 billion in overall research in 2020, although the group does not break out cancer research specifically.



NEW-PROJECT FUNDING BY NIH AND NCI, BY FISCAL YEAR

Total dollar value of unique awards to NCI and NIH recipients

☐ Total NIH funding* ■ NCI funding

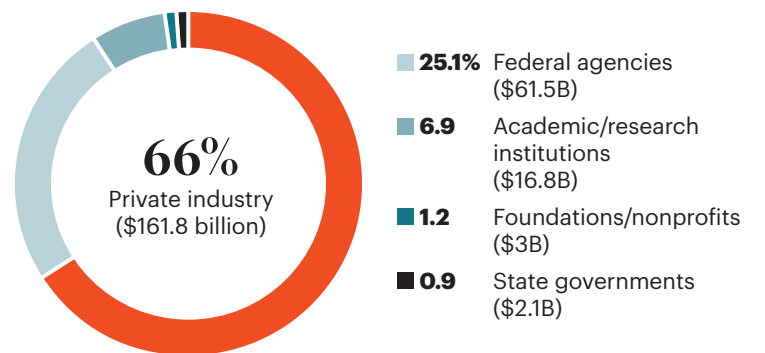


* Includes funding to "Unique Projects Funded" and does not include supplemental funding for existing projects

SOURCE: NIH

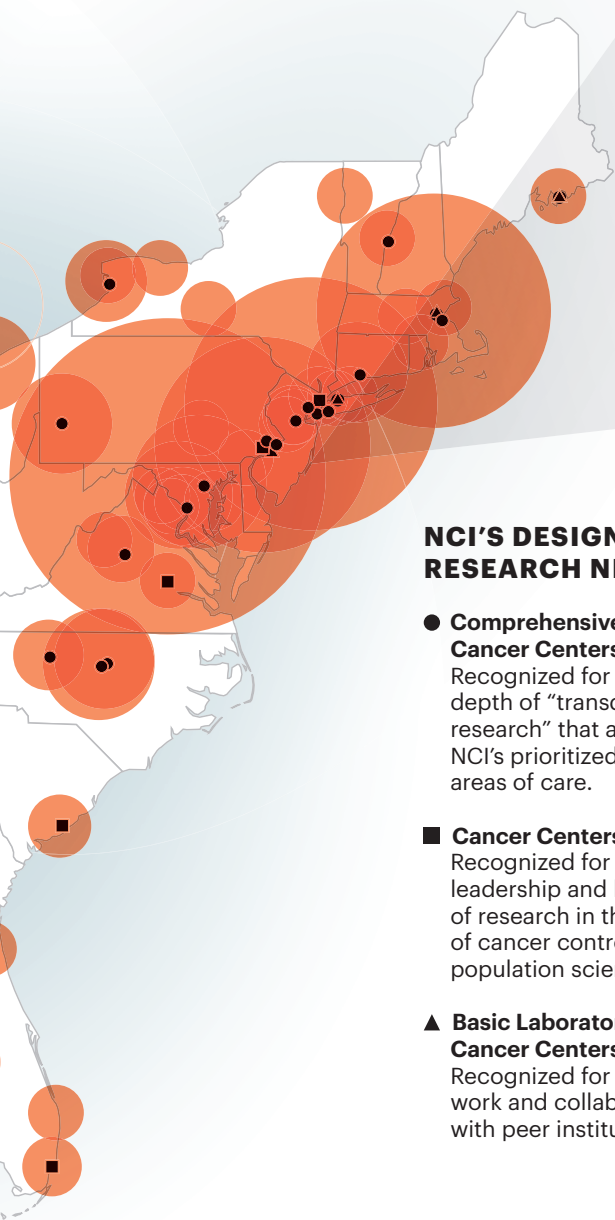
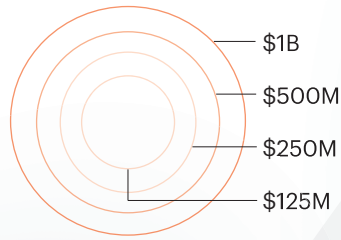
HEALTH CARE'S R&D BREAKDOWN

U.S. medical and health research and development investments totaled \$245.1 billion in 2020. That total was not specific to cancer, nor did it stem solely from government sources. Below is a summary of investments by funding source.



SOURCE: Research!America

NCI FUNDING BY CITY, FISCAL YEARS 2019-2021



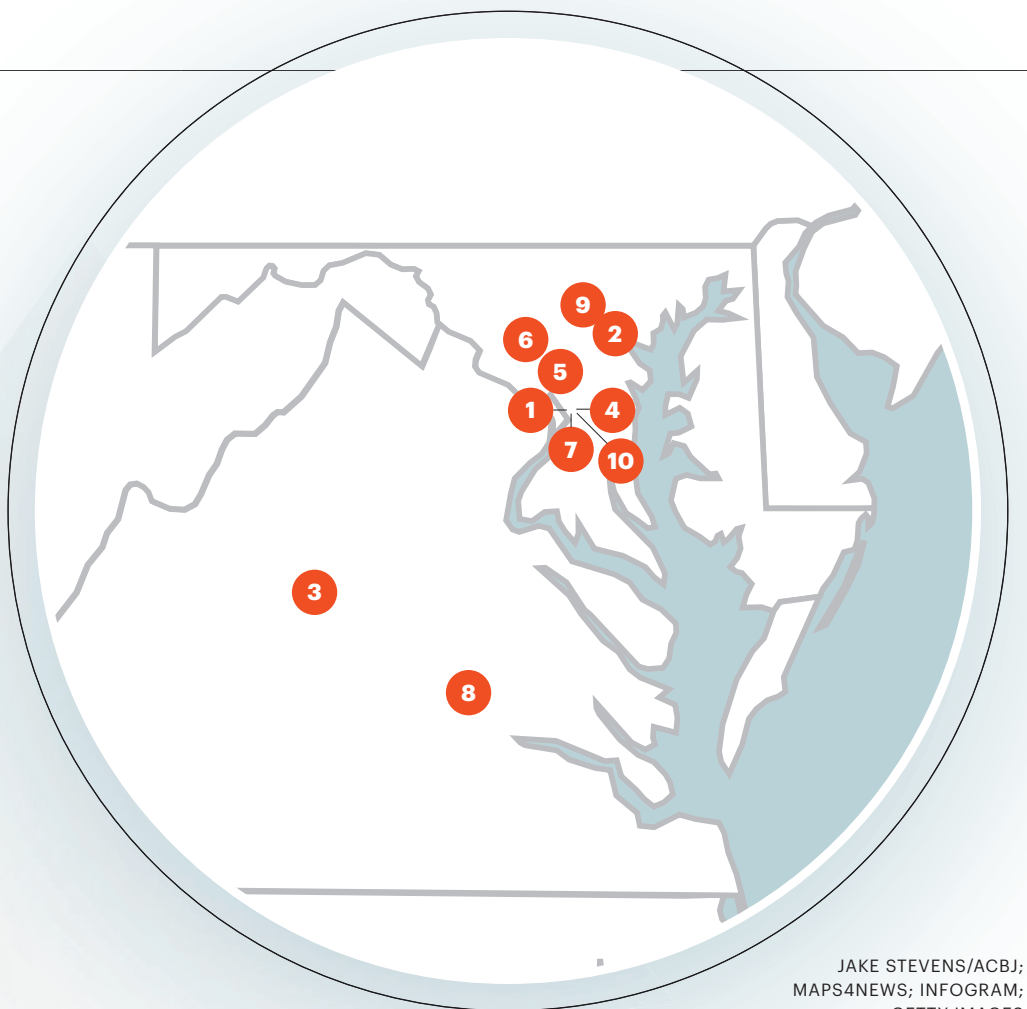
NCI'S DESIGNATED RESEARCH NETWORK

- **Comprehensive Cancer Centers (52)**
Recognized for scale and depth of "transdisciplinary research" that addresses NCI's prioritized areas of care.
- **Cancer Centers (12 total)**
Recognized for leadership and breadth of research in the fields of cancer control and population science.
- ▲ **Basic Laboratory Cancer Centers (7)**
Recognized for preclinical work and collaboration with peer institutions.

TOP 10 U.S. CITIES TO RECEIVE NCI FUNDING (FISCAL YEARS 2019-2021)

| City, state | Amount |
|---------------|---------|
| Frederick, MD | \$1.58B |
| New York | 1.02B |
| Boston | 1B |
| Philadelphia | 731M |
| Houston | 570M |
| Seattle | 459M |
| Chicago | 346M |
| Los Angeles | 346M |
| San Francisco | 317M |
| Baltimore | 283M |

SOURCE: NIH



JAKE STEVENS/ACBJ; MAPS4NEWS; INFOGRAM; GETTY IMAGES

A CLOSER LOOK

WHO IS LEIDOS BIOMEDICAL?

The Frederick National Laboratory for Cancer Research, sponsored by the National Cancer Institute, dates back about 50 years to the Nixon administration. The lab — operated by contractor Leidos Biomedical Research Inc., which is part of the \$2.5 billion health arm that contributed 19% of Reston parent Leidos Holdings Inc.'s total 2021 revenue — employs 2,400 and works with about 1,000 subcontractors in a public-private partnership. It's the only national lab exclusively focused on biomedical research.

In that vein, it aims to combat cancer, HIV, AIDS and emerging health threats like malaria, Ebola and Zika virus — and, now, Covid-19. The goal is not to duplicate work in industry or academia, "but to work on problems that are not readily accomplished" by those other areas independently, said Dr. Ethan Dmitrovsky, lab director and president of Leidos Biomedical Research.

Exhibit A: The lab led an international clinical trial of antiviral drug remdesivir as a Covid treatment, ultimately leading to its federal approval, all in just a few months, Dmitrovsky said. "As scientists, we were compelled to work together in a sense of shared public service like never before," he said.

Now, he said, it's teaming with others to push forward their Accelerating Therapeutics for Opportunities in Medicine, or ATOM, a 5-year-old public-private partnership "to do all we can to accelerate the preclinical drug development." — Sara Gilgore

LARGEST NCI RECIPIENTS IN D.C. AREA (FISCAL YEARS 2019-2021)

Ranked by total dollar value of awards

| Organization | Amount |
|--|---------|
| 1 Leidos Biomedical Research Inc. | \$1.58B |
| 2 Johns Hopkins University | 230M |
| 3 University Of Virginia | 64M |
| 4 Westat Inc. | 56M |
| 5 Information Management Services Inc. | 55M |
| 6 Ctis Inc. | 53M |
| 7 Georgetown University | 48M |
| 8 Virginia Commonwealth University | 43M |
| 9 University of Maryland Baltimore | 41M |
| 10 George Washington University | 39M |

SOURCE: NIH

NCI FUNDING IN THE D.C. AREA, BY CITY (FISCAL YEARS 2019-2021)

| City, state | Amount |
|---------------------|---------|
| Frederick, MD | \$1.58B |
| Baltimore | 283M |
| Rockville | 185M |
| District | 98M |
| Charlottesville, VA | 67M |
| Calverton, MD | 55M |
| Richmond | 45M |
| Bethesda | 37M |
| Reston | 33M |
| Fairfax | 27M |

SOURCE: NIH