

American Rescue Plan State Fiscal Recovery Fund Recommendation Cover Sheet

Please submit this document with any recommendations for funding from Rhode Island’s allocation of federal fiscal recovery funds available through the American Rescue Plan Act. This information will be made available to the public along with any detailed documents submitted that describe the proposal. It is encouraged that such documents identify clear goals and objectives and quantifiable metrics.

This is not a formal request for funds, and submission of recommendations does not guarantee a response, public hearing, or appropriation from the General Assembly.

Name of Lead Agency: _Legorreta Cancer Center at Brown University _____

Additional agencies making recommendation (if applicable): ___N/A_____

Contact Person / Title: Wafik S. El-Deiry, MD, PhD, FACP - Cancer Center Director Phone: 610-800-2443

Address: __70 Ship Street, Room 537, Providence , RI 02912_____

Email Address (if available) _____wafik@brown.edu_____

Brief Project Description (attachments should contain details) Funds are requested to support cancer research, recruitment of researchers to Rhode Island and infrastructure (\$20M per year for 10 years, renewable), funds to build a new 200,000 square foot cancer research building (\$150M), and funds to support cancer research space renovations (\$24M for 40,000 square feet)

Total request: \$ __374 million_____

One-time or Recurring Expense? \$194 million one time including \$20 million/year for 10 yrs, renewable

ARPA Eligibility Category (check all that apply) – See link for further information
<https://www.rilegislature.gov/commissions/arpa/commdocs/Treasury%20-%20Quick-Reference-Guide.pdf>

- Respond to the public health emergency and its economic impacts ___XX_____
- Premium pay to eligible workers _____
- Government services/state revenue replacement _____
- Water/sewer/broadband infrastructure _____



Wafik S. El-Deiry, MD, PhD, FACP

Director, Legorreta Cancer Center at Brown University
American Cancer Society Research Professor
Director, Joint Program in Cancer Biology
Brown University and Lifespan Cancer Institute (LCI)
Attending Physician, Hematology/Oncology, LCI
Mencoff Family University Professor, Brown University
Associate Dean, Oncologic Sciences
Warren Alpert Medical School, Brown University

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Department of Pathology and Laboratory Medicine
Campus Box G-E5
70 Ship Street, Room 537
Providence, RI 02912
Phone: 401-863-9687
wafik@brown.edu

Senate President Dominick Ruggerio
Speaker of the House Joseph Shekarchi
Rhode Island State House
82 Smith Street
Providence, RI 02903

Re: Recommendation for Rhode Island ARPA funding investment in cancer research to reduce the burden from cancer in Rhode Island that has been adversely affected by COVID epidemic

Dear Senate President Ruggerio and Speaker Shekarchi:

I am writing to recommend consideration and discussion of **Rhode Island state support for the Legorreta Cancer Center at Brown University: Building a world-class cancer center for NCI designation to serve the people of Rhode Island**. There is a great opportunity for the people of Rhode Island to improve the lives of all Rhode Islanders by improving how we prevent, diagnose, and treat cancer in Rhode Island and in the process, we will also bring the latest innovations to the underserved and disadvantaged who have not benefited from the best possible prevention, screening and treatment options.

Need for a cancer center in pursuit of NCI designation in Rhode Island: Rhode Island is one of few states in the US that does not in 2022 have an NCI-designated cancer center. There are currently 71 NCI-designated cancer centers in the US that have met standards of excellence and rigor in basic, clinical, and population research to prevent, diagnose early, and treat cancers that are relevant to their communities and to address disparities in cancer care in their underserved and under-resourced communities. It is well-documented that patient outcomes are better when they seek care at major cancer centers such as at academic University cancer hospitals or NCI-designated cancer centers. While there are NCI-designated clinical cancer centers in New England, such as Dana Farber/Harvard Cancer Center in Boston, the Yale New Haven Hospital/Smilow Cancer Center in Connecticut, or the Norris Cotton Cancer Center/Dartmouth in New Hampshire, none are located conveniently to serve the population of Rhode Island with innovative basic and clinical research providing the latest prevention and treatment approaches.

While patients with cancer receive excellent clinical care in Rhode Island, the pursuit of NCI designation will ensure that Rhode Island contributes to new knowledge to prevent and fight cancer even as its researchers understand cancer within Rhode Island and work to bring the best care and clinical trials to all Rhode Islanders, including the under-served communities. Rhode Island has a significant cancer burden and significant health disparities and like the rest of the US, COVID has contributed to delayed cancer screening, early detection and delayed treatment that is predicted to add to cancer mortality and this particularly affects under-represented minorities and those who already experience the greatest harm from health care disparities. Support for the effort to pursue NCI designation will address these gaps and will allow Rhode Islanders to have a leading nationally recognized cancer center to improve quality and prolong life for its people.

The cancer burden in Rhode Island: According to the American Cancer Society, in Rhode Island in 2022, there will be 7,030 new cases of cancer including 1,020 female breast, 490 colon and rectum cancers, 260 uterine corpus, 240 leukemia, 980 lung and bronchus, 320 melanoma of the skin, 300 non-Hodgkin's lymphoma, 1,030 prostate, 360 urinary bladder cancers, 270 kidney and renal pelvis cancer, 220 pancreas cancers, 300 oral cavity and pharynx cancers, 170 thyroid cancers, 150 liver and intrahepatic bile duct cancers, 120 myeloma cancers, 90 brain and other nervous system cancers, 90 stomach cancers, 70 esophagus cancers, 60 ovarian cancers, 50 larynx cancers, and 50 testis cancers with data unavailable on cervix cancer and Hodgkin lymphoma. Rhode Island has among the highest rates of bladder cancer and breast cancer in the country, and increased rates of lung, prostate cancer, endometrial cancer, thyroid cancer, cholangiocarcinoma (bile duct cancer), and brain cancer.

Cancer Deaths in Rhode Island in 2022: In 2022, it is estimated by the ACS that Rhode Island will have 480 deaths from lung and bronchus cancer, 190 deaths from pancreatic cancer, 160 deaths from colorectal cancer, 140 deaths from liver and intrahepatic bile duct cancer, 130 deaths from female breast cancer, 100 deaths from prostate cancer, 90 deaths from leukemia, 70 deaths from brain and other nervous system cancers, 70 deaths from non-Hodgkin lymphoma, 60 deaths from myeloma, 60 deaths from bladder cancer, 50 deaths from uterine cancer with data unavailable on other cancers.

Need to study cancer among different Rhode Island demographics/geographies: The reasons for the cancer burden in Rhode Island and increased rates of certain cancers are complex and most likely represent contribution of genetic factors among various racial and ethnic groups (genetic susceptibilities, variations in immune system), environmental factors including exposures to carcinogens from the environment (cigarette smoke, toxic waste, pollutants, heavy metals, chemicals, radon), dietary factors, and health care disparities (lack of screening colonoscopies, mammograms, CT scans, and various logistical and socioeconomic factors that prevent access to health care).

Deaths from tobacco in Rhode Island: According to data from toabccofreekids.org there are 1,800 deaths each year in Rhode Island from smoking, and there are 16,000 kids now under 18 and alive in Rhode Island who will ultimately die prematurely from smoking. The tobacco industry has significant influence in Rhode Island with \$23.0 million

spent on marketing each year. Annual health care costs in Rhode Island from smoking directly caused by smoking are \$640 million, Medicaid costs caused by smoking in Rhode Island are \$216.8 million and smoking-caused productivity losses in Rhode Island are \$458.9 million. These statistics do not include effects of second-hand smoke, smokeless tobacco use, or cigar and pipe smoking. In Rhode Island 4.2% of high school students smoke, and 30.1% use e-cigarettes which are way above the national average of 11.3%. Among kids under 18, 200 become daily smokers in Rhode Island each year. A major toll of 28.3% of cancer deaths in Rhode Island are attributable to smoking.

Healthcare disparities: Healthcare disparities are a high priority for the Legorreta Cancer Center and indeed for all who care about inequities and injustices. We worked in collaboration with the American Cancer Society's Cancer Action Network in Rhode Island for 3 years and were delighted that the Maryellen Goodwin Colorectal Cancer Screening Bill was passed and signed into law by Governor McKee in May, 2021. This new law ensures that the people of Rhode Island will not have additional out of pocket costs when they've had a stool test for colon cancer and then get the gold-standard colonoscopy test. This will help find colon cancer early in Rhode Island and will help reduce morbidity and mortality from colon cancer which is curable when caught early.

Recent developments towards an NCI-designated cancer center in Rhode Island: Five years of developments (2018-2022) at Brown University and affiliated health systems of Lifespan and Care New England have led to an unprecedented opportunity for a world-class cancer center for the people of Rhode Island. A number of high-profile clinical recruitments have occurred in the last 5 years and the pace has been escalating along with new program development. I was recruited to Rhode Island in late 2018 and have worked to develop the Cancer Center at Brown University. Some of the recent recruitments in the area of cancer at the greater academic center and health systems include Dr. Don Dizon, Dr. Benedito Carneiro, Dr. Rishi Lulla, Dr. Jasjit Ahluwalia, Dr. Christopher Azzoli, Dr. Khaldoun Almahanna, Dr. Bess Marcus, Dr. Ziya Gokaslan, Dr. Steven Toms, Dr. Nikos Tapinos, Dr. Paul Bertone, and Michael Henderson. Other notable junior faculty recruitments include Drs. Wen-I Chang, Lorin Crawford, Andre DeSousa, Christopher Elco, Pamela Egan, Joshua Honeyman, Hina Khan, Aaron Maxwell, Thomas Ollila, Orestid Panagiotou, Alexander Raufi, Alexander Sokolovsky, Xiaobing Tian, Ian Wong, Shengliang Zhang and Lanlan Zhou. With newly organized cancer research programs, progress in clinical trial oversight and some national recognition we convened a national External Advisory Board in 2020 that provided feedback and input into strategic plans as we work to pursue NCI designation for a cancer center in Rhode Island. In 2021, we were fortunate to recruit Drs. Sheldon Holder, Sean Lawler, Stephanie Graff, Abbas Abbas, Galina Lagos, and Eric Wong.

We were incredibly fortunate and grateful to receive a transformational \$25 million gift from Pablo G. Legorreta and Almudena Legorreta to name the Legorreta Cancer Center at Brown University. Support from this major gift will go towards endowments for new faculty to be recruited, start-up packages for new laboratories, equipment, pilot studies, translational research, core facilities, education, community outreach efforts, and administration. This is very exciting progress here in Rhode Island and bodes very well

as we work to pursue NCI designation. None of the existing support addresses laboratory space renovation or new cancer research building costs and there is a major need here in Rhode Island to address sustainability of cancer research operations as well as significantly augment the existing resources towards the pursuit of NCI designation. In this regard, the recommendations below address current needs in the state of Rhode Island towards addressing the cancer burden and current efforts to develop world-class cancer research efforts for the people of Rhode Island.

Recommendations for the State of Rhode Island to support the Legorreta Cancer Center in building a world-class Rhode Island cancer center for NCI designation

Cancer research space renovations: \$24M for renovation of 40,000 square feet at the Lifespan Coro Research Building to support new labs for hired basic, clinical, and population cancer researchers who are part of the Legorreta Cancer Center at Brown. One of the major problems currently at the greater academic center in Providence in 2022 is lack of available space for recruiting new cancer researchers to Rhode Island. As the cancer center grows and develops more collaborative interdisciplinary research there is a need for contiguous space and renovation offers an interim solution through 2024/2025 until progress can be made on new building space to support cancer research.

Needed new cancer research building space: \$150M for a new cancer research building at the academic cancer center in Providence. It will take 4-5 years to complete the project (2026-2027) and this is viewed as essential to describe going into a federal application for NCI designation for the Legorreta Cancer Center at Brown University in the next 3-4 years. These costs will support development of a 200,000 square foot state-of-the-art facility with laboratory space, office space, specialized biomedical research core facilities to support cancer research, vivarium, various meeting spaces, and cancer center administrative space. Contiguous space is fundamental to bring researchers and clinicians together to focus on the problem of cancer and there are numerous examples of exceptional facilities all around the US where this has been accomplished. Some space will be used as incubator space for Rhode Island cancer start-ups that will collaborate with researchers at the cancer center and take advantage of research infrastructure.

There are currently various options for the location of the space within the jewelry district in Providence where it needs to be in close proximity to the Warren Alpert Medical School, other Brown, Lifespan, and Care New England research facilities and the two health systems (Lifespan and Care New England) where the clinical cancer research is conducted. The new space will house hundreds of researchers and staff with new jobs in the state of Rhode Island. A cancer center research building is expected in the pursuit of NCI designation to bring researchers and other stake-holders together to interact across disciplines in focused basic and clinical research programs.

Cancer research support, recruiting and infrastructure: \$20M per year for 10 years, renewable in the future. These funds will complement other sources of support from federal grants, foundations, institutional funds and philanthropy. The level of state support

is consistent with what has been done at other states in the US that have exceptional cancer research programs that serve their people.

Recruitments: Funds will be used to recruit new cancer researchers to Rhode Island at senior and junior levels and will support research operations including cancer research core facilities that the labs depend on. Recruitment packages include laboratory start-up costs, lab staff, equipment, and research operating costs. The goal of new faculty recruits includes providing support for lab operations that will complement funding from competitive federal and other grants.

Core facilities and tumor tissue bank: Core facilities will house advanced research technologies and will be led by highly skilled directors and a staff including new hires into the state of Rhode Island. Funds will support tumor tissue bank growth and operations.

The importance of state support in light of limited federal funding in Rhode Island:

In the last two decades since 2002 with the end of the doubling of the NIH budget for biomedical research, the pay-lines at the NCI for biomedical research grants have hovered around 10% and a bit higher with resubmission with a process that can take 2-3 years. This has made it very difficult to conduct and sustain cancer research and many talented biomedical researchers have chosen other career paths. Those who persisted benefitted from various institutional funds, philanthropy, foundations and state support. This is particularly important for Rhode Island that is still building world-class facilities in order to be much more competitive for federal funds that support research.

Pilot projects, collaboration, and clinical translation: Funds will support pilot projects that develop innovative approaches, involve collaboration across disciplines or between basic scientists and clinicians and have potential for translation and future external funding. Rhode Island state support for the Legorreta Cancer Center will allow for needed growth to further the building of a world-class center to serve the people of Rhode Island and includes funding for sustainability in the functioning of research programs.

Cancer risk factors: According to the ACS, Rhode Island can be proud of being at the forefront of successful efforts nationally with HPV vaccination in recent years (#1 ranking nationally for HPV vaccination coverage among boys 13-17 years in 2016 and among girls 13-17 years, 2016) due to state-mandated programs. On the other hand, Rhode Island ranks nationally at #44 for obesity prevalence, 18 years and older, 2018, #37 nationally in excess body weight, 18 years and older, 2018, #33 nationally in current cigarette smoking, high school students, 2017, and #36 nationally for current cigarette smoking, 18 years and older, 2018.

Research on cancer risks and interventions in Rhode Island: Essential activities to be supported by the state of Rhode Island at the Legorreta Cancer Center include basic research into cancer causes in Rhode Island with attention to environmental exposures, toxic waste, geographical factors, heavy metals, radon, pollution, diet and other factors that contribute to cancer development. Among these are genetic susceptibilities among the different diverse populations within the state of Rhode Island. Efforts to modify

behaviors, nutrition and efforts to address obesity and alcohol and work to reduce tobacco and radon exposure as well as other environmental agents are areas where the cancer center will have impact in Rhode Island. Skin cancer prevention, HPV vaccination to prevent cervical cancer and head and neck cancer will continue as important priorities. Continued efforts to maximize screening with mammography, screening for colon and lung cancer with attention to disparities are in area of focus for the Legorreta Cancer Center.

Focus on disparities in Rhode Island: Improving on disparities in breast, prostate and other cancers is a priority as is addressing quality of life for cancer survivors. Support for genetic counseling, patient navigation, palliative care, physical activity interventions, community outreach efforts and clinical research are areas where the cancer center adds value through new knowledge, research methodologies and by recruiting relevant expertise to build programs in Rhode Island. Language barriers, socioeconomic factors, cultural differences, and logistical problems with access to care and clinical trials are areas of effort.

Innovation and disparities: It is part of the vision at the Legorreta Cancer Center to bring and develop innovative research technologies and apply them for early detection and treatment of cancer. New treatments developed in research labs will be advanced to clinical trials and offered to patients in Rhode Island. The people of Rhode Island will have access to a greater number of cancer clinical trials that offer them opportunity for living longer healthier lives. These trials will have a focus on recruiting more women and minorities within the state of Rhode Island and will focus on offering clinical trials within the full lifespan of individuals including the elderly and children and those with other underlying conditions.

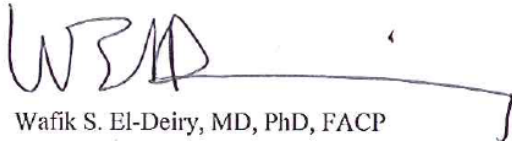
Education: In addition to research and community outreach, the Legorreta Cancer Center is pursuing educational activities as part of its mission in the pursuit of NCI designation. This is a critical component required for the NCI designation and includes efforts to increase diversity among trainees who will make up the future workforce in cancer research in Rhode Island. Efforts will include working with partners such as the American Cancer Society to advocate for health equity in clinical care and access to the latest diagnostic technologies and cancer treatments. There will be efforts to strengthen collaborations with University of Rhode Island in the area of cancer, collaboration with the Rhode Island Quality Institute, and national precision medicine efforts that are already underway through the Legorreta Cancer Center in Rhode Island.

Cancer, COVID, and health literacy: A major problem is healthcare disparities that are widening during the COVID epidemic. Community outreach efforts to address the fundamental causes of poor access to care, improved cancer screening, and to conduct research to bring advanced technologies to the entire population including the underserved are high priorities. Increasing health literacy, trust and access to knowledge and advances are all parts of the goal.

Summary of impact: Advancing research on cancer in Rhode Island is good for the state economy and can in the future reduce cancer care costs due to earlier detection of cancer at a stage when in many cases it is curable and superior more personalized treatments available to all the people of the state. Focus on risk factors to modify behavior will go a long way to reducing the burden of cancer by 50% as has been estimated by the American Cancer Society. There is a huge economic burden from different types of cancers when they are diagnosed late at a stage when they are no longer curable. Scientific advances offer personalized treatment options that offer the right treatments to the right patients and this saves people from unnecessary toxic treatments with little chance of benefit. The impact of a world-class cancer center in Providence will go well beyond the state of Rhode Island in improving the lives of Rhode Islanders and is expected to have global impact.

Thank you for considering these recommendations.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. El-Deiry', with a long horizontal line extending to the right from the end of the signature.

Wafik S. El-Deiry, MD, PhD, FACP