



Foundation for the NIH to Support Worldwide Competition Focused on Improving the Accuracy of Lung Cancer Screenings

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The Foundation for the National Institutes of Health (FNIH) has been awarded a \$2.4 million grant from the Laura and John Arnold Foundation (LJAF) to support a worldwide Coding for Cancer™ competition focused on improving the accuracy of lung cancer screenings.

One of the competitions will ask coders to create the best computer algorithm that can identify a person as having lung cancer based on two sets of images taken 1 to 2 years apart—when the scans may show the growth of a tumor. Another challenge will be more difficult: It will ask coders to create algorithms that can spot lung cancer based on one set of images taken from a single scan or study.

Screenings often produce false-positives, meaning, in this case, that the observed finding was not due to lung cancer. In the landmark National Cancer Institute (NCI) National Lung Screening Trial, which compared low-dose helical CT scans to standard X-rays, initial positive screening results were incorrect about 95 percent of the time.

“The NCI has validated helical CT scanning as an effective way to reduce lung cancer mortality by about 20 percent in high-risk patients, and this method has now been approved for reimbursement; further, it can be combined with tobacco cessation programs to further reduce death rates,” said NCI Director Harold Varmus, M.D. “But the procedure remains marred by many false positive readings. We hope that the generous gift from the Laura and John Arnold Foundation will attract people from many disciplines to look for new methods to read the scans more accurately, thereby reducing costs, complications and anxiety.”

Inaccurate results cause a considerable amount of stress for patients and may require them to spend money on costly follow-up screenings. FNIH is working to address the problem through its support of the Coding for Cancer Lung Cancer Challenges. The competition will be designed and coordinated by the NCI’s Cancer Imaging Program and will offer up to \$1.8 million in prizes.

“Providing incentives for intellectual challenges like Coding for Cancer is an intriguing way of moving science forward, especially in a case where the answer may come from the biological, the physical or the computational sciences,” said FNIH President and Executive Director Maria Freire, Ph.D.

The challenges are part of the broader Coding for Cancer initiative, which seeks to attract researchers from other fields, such as facial recognition or satellite imagery, to spur innovation in cancer detection methods. A second imaging competition, to which LJAF has committed \$1.8 million, will be held by Sage Bionetworks and will focus on reducing false negatives in breast cancer screening.

LJAF's funding support is part of its broader effort to improve the reliability and validity of scientific research. The Foundation is a lead funder of initiatives focused on strengthening research integrity, and it has committed more than \$72 million to such projects.

"Misinterpretation of cancer screenings can cause patients to miss out on critical treatments or can lead others to undergo unnecessary biopsies or imaging," LJAF Vice President of Research Integrity Stuart Buck explained. "To reduce the human and economic costs of misdiagnosis, we must find solutions to improve computer recognition of cancer indicators."

The challenges are expected to be opened early next year. Details of the registration process and rules for the competition will be announced at a later date.

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About the Foundation for the NIH

The Foundation for the National Institutes of Health creates and manages alliances with public and private institutions in support of the mission of the NIH, the world's premier medical research agency. The Foundation, also known as the FNIH, works with its partners to accelerate key issues of scientific study and strategies against diseases and health concerns in the United States and across the globe. The FNIH organizes and administers research projects; supports education and training of new researchers; organizes educational events and symposia; and administers a series of funds supporting a wide range of health issues. Established by Congress in 1996, the FNIH is a not-for-profit 501(c)(3) charitable organization. For additional information about the FNIH, please visit www.fnih.org.

About the Laura and John Arnold Foundation (LJAF)

LJAF is a private foundation committed to producing substantial, widespread, and lasting reforms that will maximize opportunities and minimize injustice in our society. Its strategic investments are currently focused in criminal justice, education, public accountability, and research integrity. LJAF has offices in Houston and New York City. www.arnoldfoundation.org.