# Developing Novel Child-friendly Health Assessments



Shreyas Vasanawala Associate Professor

### **CURRENT RESEARCH**

Creating flexible MRI technology for children enables improved pediatric care for a broad range of diseases

When children are ill, it's often difficult for them to communicate the symptoms they're experiencing. Though medical diagnostics play a critical role in their care, it's also difficult for children to undergo conventional tests—especially imaging tests—which are primarily optimized for adults. Dr. Shreyas Vasanawala develops safe, definitive, and quantitative diagnostic tests for children. He is particularly focused on making magnetic resonance imaging (MRI) tests child-friendly. Dr. Vasanawala is exploring ways to make MRI fast, tolerant of patient motion, and quantitative in its output. His work will enable a safe technology that is more accessible, cost-effective, and valuable for children, leading to improved pediatric care for a broad range of diseases, including those of the heart, lung, and kidneys, as well as cancers of various organ systems.

Currently, MRI is a lengthy exam with no ionizing radiation that requires a patient to remain motionless in a confined environment. These factors work against a clinician as they attempt to assess a child's health. The most common solution used to help children cooperate is to perform this otherwise very safe test under anesthesia. To circumvent this issue, Dr. Vasanawala and his interdisciplinary research group, which comprises a research associate, three graduate students, and collaborating researchers at Stanford in Electrical Engineering and at University of California, Berkeley, are exploring innovative ways to improve these exams. They want to make the assessment faster and more tolerant to patient motion and lack of cooperativity, as well as enhance the quantitative value of these exams. Dr. Vasanawala and his team have a strong.

#### **AFFILIATION**



Stanford University

#### **EDUCATION**

• MD/PhD in Biophysics 2001, Stanford University

#### **AWARDS**

Academy of Radiology Research Distinguished Investigator Award, 2016

#### **RESEARCH AREAS**

Life Science, Oncology / Cancer, Oncology / Cancer, Pediatric

## **FUNDING REQUEST**

Your contributions will help fund Dr. Vasanawala's continued research in improving diagnostic tests for children that will lead to improved pediatric care for a broad range of diseases. Costs include \$150K/year for one research associate, and \$50K/year for computational expenses, which include developing very compute intensive image reconstruction and processing algorithms. Play a role developing safe and MRI and imaging tests that are more accessible, cost-effective, and valuable for children; fund Dr. Vasanawala.

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