

IMAT INNOVATIVE MOLECULAR ANALYSIS TECHNOLOGIES

Developing Innovative Technologies in the Fight Against Cancer

Innovative methods and technologies are essential for translating today's basic research discoveries to tomorrow's patient care. With the goals of strengthening this stream of innovation, the National Cancer Institute (NCI) created the Innovative Molecular Analysis Technologies (IMAT) Program to support the development of next-generation analytical methodologies and tools that have the potential to revolutionize the way that research can be pursued.

The IMAT Program accomplishes these goals by:

- Soliciting and supporting the maturation of highly innovative, high-risk but also potentially high-payoff technologies from the scientific and clinical communities.
- Fostering cross collaborations between the life sciences and non-life science disciplines by taking risks needed to overcome technical barriers to cancer research.
- Focusing solely on the development of a technology through a pipeline that aims to demonstrate technical feasibility.

IMAT's DEVELOPMENT PIPELINE

IMAT's focus is on the early stage technical development of innovative tools that have the potential to revolutionize the state-of-the-science in cancer care and research. Through a suite of investigator-initiated funding opportunities, innovators are provided the infrastructure to support their development pipeline – starting with the pursuit of an idea to its technical validation for a specific use.

Many technologies developed through the IMAT pipeline were considered as high-risk concepts at the time of inception. By allowing the individual investigator to take the risks necessary for early stage optimization and testing of feasibility, these technologies obtained the scientific and technical evidence to be confidently used in support of hypothesis-based research, or to be further developed for dissemination to the commercial market.

TECHNOLOGY DEVELOPMENT AREAS

The IMAT Program seeks to fund technologies in the following areas:

- 1. Innovative and Applied Emerging Technologies in Biospecimen Science** centers on the development of novel and transformative technologies to assess, evaluate, and/or reduce the pre-analytical variability of biospecimens or analytes, with the intent of maximizing the quality and utility of samples analyzed for cancer research.
- 2. Innovative Technology Development for Cancer Research** emphasizes research projects focused on the inception and preliminary development of very early stage, highly innovative, but also high-impact technologies for cancer research.
- 3. Development and Application of Emerging Technologies in Cancer Research** supports projects that develop and validate emerging technologies ready for initial application or use in a clinical or laboratory setting, or in a relevant field of cancer research.

For more information on the scope of IMAT-supported technologies, please visit: <http://innovation.cancer.gov>



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MECHANISMS OF SUPPORT

The IMAT Program uses NIH's R21 and R33 Request for Applications (RFA) mechanisms to fund investigator-initiated projects proposing the development of highly innovative technologies that have the potential to revolutionize cancer research. IMAT solicits applications under these funding mechanisms for three rounds of review each year.

IMAT R21s: Constitute the exploratory/pilot phase of a research project grant, focused on the earliest stage of a technology development project for a period of two or three years (dependent on the RFA's theme). This RFA requires an innovative technology or approach and appropriate quantitative milestones. While preliminary data is not required, it is allowed.

IMAT R33s: Constitute the developmental phase of a research project grant, focused on the validation and advanced development of a technology development project for a period of three years. Preliminary (proof-of-concept) data is required.

For more information on funding opportunities and mechanisms of support, please visit: <http://innovation.cancer.gov>

UNIQUE ASPECTS OF IMAT

Multidisciplinary Portfolio

Technologies are solicited and drawn from a variety of disciplines and fields.

Investigator-Initiated Support

IMAT utilizes investigator-initiated research project grant mechanisms, relying on the individual investigator to identify the unmet need and to propose their technological solution.

Technology-Focused, Not Hypothesis-Driven Research

IMAT does not support traditional hypothesis-driven research. IMAT's scope covers the development of tools and platforms from inception to validation for a specific use.

Commitment to New or First-Time Investigators

IMAT encourages new investigators, with approximately one-third of the program's portfolio comprised of new or first-time investigators.

Commitment to Diversity

In collaboration with NCI's Center to Reduce Cancer Health Disparities, IMAT offers its investigators opportunities to provide educational and training support for high school to young investigator-level scientists from underrepresented populations, in the field of emerging technologies.

Unique Review Structure and Process

IMAT utilizes and commissions panels comprised of scientific experts representing the interdisciplinary nature of innovative technology development. These Special Emphasis Panels are coordinated by the NCI Division of Extramural Activities and allows IMAT to customize the review panels to better fit the applications under review. This also ensures that each study section is focused on the development of a technology and allows flexibility to the breadth and depth of the constantly evolving science being reviewed.

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