Attachment 1: Background and Rationale of the IMAT Program

The NCI Innovative Molecular Analysis Technologies (IMAT) program issues both atypical R21 (up to $500k over 3 years) and standard R33 (up to $900k over 3 years) awards to support highly innovative technology platforms and approaches focused on either of two thematic areas: 1) Innovative and emerging molecular and cellular analysis technologies with the potential for having a transformative impact in cancer research and/or clinical applications; and 2) Innovative and emerging cancer-relevant biospecimen science technologies to improve the quality and utility of biospecimens used in cancer research. Applications to the latter must offer novel capabilities to procure, process, and/or preserve human biospecimens and derivatives, or offer means to assess the biological integrity of broad categories of analytes for cancer research. Awards for either theme support establishment of feasibility (R21) through validation (R33) of the technology for application in basic, clinical, and/or epidemiological research settings. To date, the program has issued 603 R21 and R33 awards and 183 SBIR & STTR awards, supporting over 500 unique technology platforms.

Examples of successfully developed and commercialized products include Illumina bead-based DNA sequencing platforms, Quantum Dot labeling, MuDPIT (multi-dimensional protein identification technology), ICAT (isotope-coded affinity tag) technology, MPIVI (multiphoton intravital imaging), Raindance technology, and ONIX cytotoxicity screening (from CellASIC). All were considered high-risk ideas at the time they were proposed and gained initial funding through the IMAT program. The program serves NCI in a variety of ways beyond what is mentioned above. Cost-savings are anticipated by virtue of the program's focus on providing a "launch pad" for innovative technologies with the potential for providing a transformative impact. If successful, these platforms should either catalyze new research directions or overcome persistent research barriers that have hindered progress. By the same rationale, these tools largely enable greater research productivity and efficiency for the fields in which they apply. The trans-divisional program structure itself provides efficiencies by ensuring the various priorities and activities of the institute are brought to bear on every program decision; from solicitation through award selection and grant management. With regards to transparency, a comprehensive record of all awards made and reports of the annual PI meetings are available to the public from the program website (http://innovation.cancer.gov). Further, the authority to issue solicitations associated with the program is based on approval from the NCI Board of Scientific Advisors, which is an external oversight committee with publicly broadcasted meetings.