# *i*Bio: A Center for Innovation and Commercialization of Industrial Biomanufacturing

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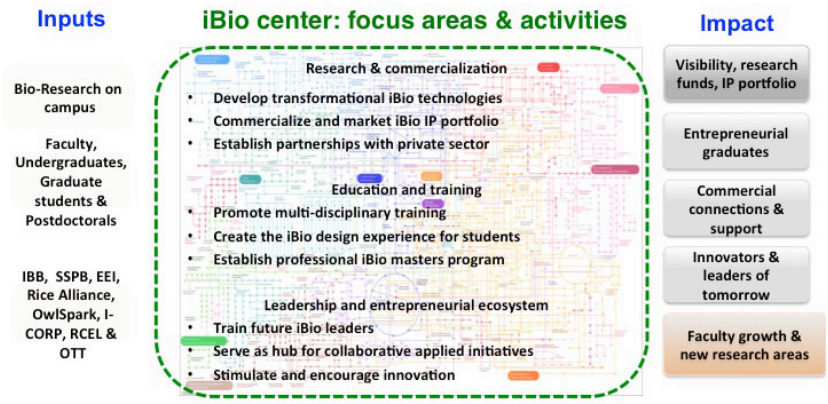


The *i*Bio center will be established by a team of Rice faculty leveraging on proven leadership in industrial biotechnology, success in attracting research funding from private and public sources, and experience in technology commercialization. *i*Bio will conduct transformational research to enable the **development of biobased products and processes ranging from production and discovery of healthcare products to manufacture of valuable chemicals, materials and applications to the energy industry**. This center will leverage Rice's extensive portfolio of patented technologies in this field and established success in licensing these technologies and thus is uniquely positioned to have significant impact on our economy, society, environment and medicine. To enable rapid transition from basic research and development to effective platforms for discovery and production and, ultimately, commercial deployment, we aim to seize upon recent advances in the following areas: i) Synthetic biology-genome & control circuit designs; ii) Systems biology- "omics" approaches, big data, and computational tools; iii) Genomics & molecular biology-based knowledge and genetic manipulation across many organisms; and iv) Metabolic engineering-network design & protein engineering. The *i*Bio Center will build on previous success and existing infrastructure on bioconversion of raw materials to biologically active molecules and industrial chemicals. This high-tech field promises both long-term potential and broad impact, fostering bonds with the energy & chemical industry, pharmaceutical & medical interests, and environmental initiatives.

**Rice Current Strengths**

Rice is well positioned to create an effective, focused interdisciplinary center that will advance the frontiers of knowledge, innovation and commercialization in the biomanufacturing space. The new Rice *i*Bio Center aligns with Rice's long-term vision, including a focus on transformational research, engagement with the Houston business community, and encouraging entrepreneurial activities of students and faculty. The Center involves faculty members across departments in recent research and equipment proposals in this theme, builds upon recent faculty hires & the establishment of the SSPB graduate program and the Energy and Environment Initiative (EEi), and supports the interest in entrepreneurial and leadership culture typified by growth in Rice Advance, OwlSpark, I-CORPS and RCEL programs.

**Value Proposition and Potential Impact**

The proposed *i*Bio Center is envisioned to operate using a self-sustainable business model that would result in a total income of $5 MM/year after a 5-year prove-out phase. The Center fits nicely into the goal of advancing Rice's position in bioscience and bioengineering. It strengthens emerging areas at Rice that emphasize our distinctive expertise in complementary areas and builds on a solid foundation of interactions among multiple departments at Rice, including BIOE, ChBE, BioSciences, CS, Chem, CAAM, CEVE, ECE & ESCI. These educational efforts would integrate disciplines and enable students to be prepared for leadership in the new industry. Connections with Rice Alliance, I-CORPS, & Owlspark entrepreneurial activities and RCEL leadership programs will enable to center to be uniquely positioned to prepare our technically trained students for leadership roles in the biotech industry.

**Investment Needed to Support Growth**

Personnel: one executive director, one manager, and continued faculty recruiting to strengthen the *i*Bio expertise portfolio; Funds for Center startup would target: matching funds for certain grants, and kicking-off multi-investigator initiatives; equipment acquisition to enhance research capability. Space: office for Executive Director and Director of Operations and space for new faculty and the educational efforts of the center.

**In summary**, the the *i*Bio center will: Enable commercialization of *i*Bio through transformational bio-research; Stimulate & encourage innovation and leadership by entrepreneurial graduates; Strengthen & expand existing programs of IBB; Add new programs in the educational sector-a Professional Masters Program in *i*Bio; and Serve as hub for collaborative research & technology development through stimulating new interdisciplinary bio-related research areas.