

Chapter 10

An Effective Model for University–Industry Research Collaboration

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ABSTRACT

This chapter describes the Maryland Industrial Partnerships (MIPS) program, its genesis, operations, record, and impact. Founded in 1987, MIPS provides funding, matched by participating companies, for university-based research projects that help Maryland companies develop new products. Startup companies find the program attractive in leveraging their scarce resources in a non-dilutive, non-debt manner and effective in enlisting expert faculty and students in developing their company products. The State of Maryland finds the MIPS program attractive because of its significant economic impact and its high-multiple return of tax dollars to the State. The University System of Maryland faculty have embraced the program for the industry collaborations created and research funding provided. The effectiveness of the MIPS program is greatly enhanced by Maryland's robust innovation and entrepreneurship ecosystem built up over decades, a build-up whose acceleration coincided with the 1983 creation of MIPS' parent organization, now known as the Maryland Technology Enterprise Institute.

INTRODUCTION

In designing a program for promoting university-industry research and development (R&D) collaborations, prime consideration was given to creating long-term, sustainable jobs through the strategic application of state funding. In this chapter we describe the Maryland Industrial Partnerships (MIPS) program, which was established in 1987 and has proven to be a highly effective approach to leveraging the resources, both the human capital and the facilities, of Maryland's public universities in support of the state's economy. Maryland companies are drawn to the MIPS program as a source of non-dilutive, non-debt funding for their product R&D and as a way to obtain university expertise and effort that would otherwise be beyond their reach. By presenting the genesis, methods, record, and economic impacts

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of the MIPS program, this chapter provides a guide to universities, governments, and private sector organizations interested in advancing the economy of their region by university-industry collaborations accessible to startup companies.

Accessibility by startup companies is a key factor. Many university-industry collaborations involving startups are restricted to companies that originate in the university, founded by faculty or students, or to companies that license technologies originating from universities. This is certainly an important source of advancement for regional economies, but it misses all the startups that have no connection with a university. Yet the latter can benefit from university collaborations fully as much as those whose founders or founding innovations come from a university. MIPS supports both types of startups: the university spinouts and those originating outside universities. Many other university-industry collaborations depend on full funding from the company partner, putting such collaborations out of reach of many startups. MIPS enables startups to tread into R&D domains formerly affordable only by large, established firms. MIPS funding is also available, on a sliding scale basis, for collaborations with larger firms who might otherwise not consider a university R&D partnership, introducing such firms to the robust expertise and facilities available, and thereby enhancing those firms' competitive positions.

BACKGROUND

Mission

The mission of the Maryland Industrial Partnerships program is to support the creation of long term, technology-based, sustainable jobs in Maryland. MIPS accelerates the commercialization of technology in Maryland by jointly funding collaborative R&D projects between Maryland companies and the faculty and graduate students of Maryland's public universities: the University System of Maryland, plus Morgan State University and St. Mary's College of Maryland.

MIPS provides funding, matched by participating companies, for university-based research projects that help companies develop new products. MIPS and company funds both go to the university researchers. Although MIPS works with all of Maryland's public universities, it is situated within the Maryland Technology Enterprise Institute of the A. James Clark School of Engineering at the University of Maryland College Park. (See Figure 1)

Other Programs with Similarities to MIPS

We have found two programs in other states similar to MIPS, namely Florida High Tech Corridor's Matching Grants Research Program (currently active) and the University of California UC Discovery Grants program (no longer active).

- **Florida High Tech Corridor, Matching Grants Research Program:** Provides matching funds to leverage research collaborations between industry and member universities. Matching grants totaling \$57M have been awarded since the program began in 1996, with \$943M in downstream impacts. The required ratio of industry match (cash and in-kind) ranges from 1:1 to 1:3 (University: Industry Partner). Awards range up to \$250,000. (Florida High Tech Corridor, 2014)

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