PRODUCT
DESIGN + INNOVATION
creating innovative designers for the future
INTRODUCTION

CHALLENGE

The lack of innovative educational opportunities preparing the next generation of product design graduates with a bold entrepreneurial spirit.

SOLUTION

Create a quality educational program devoted to preparing the next generation of product designers, that achieves the goal of balancing the three-legged stool of form, function, and manufacturing, while addressing the objective of a seamless interface of human beings with technology.
“…the things we interact with are leaving the simple and physical world and becoming virtual and complex…Today, industrial design is as much about designing systems and software and applications as it is about designing objects. We are designing machines, but also the ghosts that live inside them.”

Tim Brown, CEO/President
IDEO
THE IDEA:
Western Michigan University proposes to create a highly innovative PD+I program to meet current and future global Manufacturing needs.

PRODUCT DESIGN + INNOVATION PROGRAM

- WMU uniquely qualified to meet challenge of seamlessly interfacing with humans and technology
- WMU proposes creation of highly innovative industrial design program to meet global manufacturing needs, in SW Michigan
- Graduates able to work in many areas of design, helping meet current/future needs of regional companies and beyond
- Kalamazoo possesses ideal qualifications and area market to maximize industrial design community to connect grads with world-class regional employers
WHY NOW?

The mission of the College of Fine Arts (CFA) is to foster, integrate, and promote the academic and artistic excellence of its departments and schools.

The CFA vision is to be a national leader in the preparation of artists, practitioners, teachers, and scholars through educational and creative excellence.

Western Michigan University will create a highly innovative industrial design program to meet the current and future design and manufacturing needs of the Midwest centered in Southwest Michigan. As Michigan recovers from the great recession, manufacturing jobs and the industrial center that were once a vital part of the Michigan economy are growing again. It is predicted that between 2012 and 2022, this sector will grow by at least 4 percent a year, and the median salary for jobs in this field are currently $64,620. Currently, there are dozens of jobs that cannot be met in the job market and this gap will grow each year. Western Michigan University is committed to addressing this challenge and reversing that trend.

WMU is uniquely qualified to meet these challenges. Nationally-ranked programs in the colleges of Fine Arts, Engineering, and Business combine to form an unrivaled talent base that will allow the delivery of this new cutting-edge program. Graduates will be able to work in many areas of the design field helping to meet the current and future needs of industrial design companies in the region and beyond.

"At Stryker Medical, design increases the creative capacity of our company leading to better solutions to product and business issues. We need design professionals who can contribute to teams with their core skills while leading the company in new methods for thinking strategically to define our future."

-Bill Fluharty, Director of Design
Stryker Medical
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WHY IT MAKES SENSE

It is projected that the PD+I program expenses and revenue will be budgeted in the following manner:

**Expenses**

**Human Resources**

- Four (4) full-time faculty, including the program coordinator:
  - Program coordinator: $70,000 + fringe = $104,040
  - Three (3) faculty: $62,000 - $65,000 + fringe = $289,710
- Two to three (2-3) part-time faculty drawn from industry partners in the area: $35,000
- One (1) full-time office associate that would assist with both day-to-day operations and advising systems: $64,260 including fringe
- Two (2) shop/lab technicians (Faculty Specialists) with expertise in rapid prototyping, 3D printing, and related operations: $153,000 including fringe

Salary + Fringe: $645,470 annually

Annual program operating expenses: $121,000 ($43,500 office expenses; $27,500 faculty/staff support; $50,000 equipment replacement and repair)

Total program costs (salaries and operating): $766,470 annually
WHY IT MAKES SENSE

Income

Tuition — 80 students

CFA has upwards of 20% out-of-state students and we expect PD+I to exceed that, but using a conservative 85% in-state to 15% out-of-state ratio produces the following calculations:

- $1,037,544 annual tuition income based on 2015/16 rates for lower and upper-class credit hours at 15 credits per semester
- $129,120 in annual differential tuition income based on 15 credit hours and 2015/16 rates
- Total new annual tuition income to the University: $1,166,664

- Less annual operational expenses of $766,470 = $400,194 of new annual income to WMU. This does not include income from room, board, fees, etc.

- Allowing for annual expenses for facility upkeep, utilities, and maintenance allocated at $15 a square foot for 25,000 square feet, equates to $375,000 annually. This still leaves the University with a positive return on investment of at least $25,000 annually after all expenses based on tuition alone.

Physical Facilities — Renovate existing third and first floors of Middle Kohrman Hall for PD+I program Expenses:

- 4,300 sq. ft. of studio-based learning spaces by cohort level (3-4)
- 5,000 sq. ft. of "Flexlab" fabrication space

- 720 sq. ft. of office space
- 1,200 sq. ft. of multi-purpose studio for critique, project-based learning, and related clean space classwork
- Wood and Metals shops to augment existing spaces in the Frostic School of Art to meet safety and accreditation standards
- Renovation costs estimated at approximately $300 per sq. ft. x 25,000 sq. ft. = $7,500,000 in onetime expenses

Equipment expenses — To be determined through program design (rough estimates)

- Digital 3D printers, color laser printer, black and white laser printer, vinyl cutter
- Analog prototyping equipment
- Laser cutters, CNC routers
- Oversized exhaust system
- Equipment totals: $625,000 one-time and $50,000 annually

PD+I program expense totals:

- $8,125,000 in one-time renovation and start-up costs
- $766,470 annually for salaries and operating expenses
| Western Michigan University | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Carnegie Mellon University | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Rhode Island School of Design | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Massachusetts Institute of Technology | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| University of Cincinnati | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Kendall College of Art and Design | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Ohio State University | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| California Institute of the Arts | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Georgia Institute of Technology | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Cranbrook Academy of Art | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Pratt Institute | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| ArtCenter College of Design | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Philadelphia University DEC Center | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| University of Michigan School of Art & Design | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Savannah College of Art and Design | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
THE HOW

Based on the desired program and structure of the PD+I program, we have developed a proposed space definition which is tailored to the cohort model envisioned for the program.

The spatial definition consists of the following key elements:

- Main Entry
- “Commons + Gallery” Social Spaces
- Design Studios (4 Years)
- Innovation Lab
- Fabrication Lab
- Technology Lab
- Prototype + Print Lab
- Wood Lab
- Metals Lab
- Critique + Ideate Room
- “Client” Presentation Room
- Project Team Rooms (Huddle space)
- Conference Room
- Vending and student Lounge
- Offices + Support Space

The detailed space analysis of these elements totals approximately 28,000 gross square feet of building area desired for the PD+I program. The initial conceptual plans illustrate a proposed layout for the program within Middle Kohrman Hall building on the First and Third Level of the building. The intent is to create a dynamic, open, and collaborative environment that leverages the assets of the existing building as well as the adjacencies of classrooms and other design space housed within South Kohrman Hall and the Richmond Center for Visual Arts.

In addition, we have completed a preliminary analysis of the site and suggested ideas to activate, access and highlight the PD+I program within the re-imagined facility. The following pages present the initial conceptual design for the future of the PD+I program at Western Michigan University.

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- Mike Roeder, President/CEO
  Fabri-Kal

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The chosen area for the program, Middle Kohrman Hall, sits in a transitional area between the recently completed areas for the Arts programs and the larger general classroom building of Kohrman Hall.

The portion of the building that the PD+I program would occupy has some campus exposure on the east side, fronting towards a connector to the main east-west axis of pedestrian movement thru campus. The west exposure faces the “back-of-house” functions of building services and utilities, as well as parking access to the south. The Middle Kohrman building does not encourage cross traffic between these sides and offers non-descript entry access points on each side.

Part of the energy of the PD+I program is activity, innovation, and collaboration, and to enhance this building with student experiences. The design for the site will encourage crossing through the common areas of the program, and will situate internal gathering and social spaces (gallery, café, collaboration areas) and external offerings (outdoor seating, outdoor product display) along this route.
CONCEPT PLANS – First Level

- OFFICES
- VENDING & STUDENT LOUNGE
- PROTOTYPE + PRINT LAB
- EXISTING MECHANICAL
- LARGE CONFERENCE
- HUDDLE
- HUDDLE
- STOR.
- "COMMONS" GALLERY
- SPRAY BOOTH
- HUDDLE
- "CLIENT" ROOM
- WOOD LAB
- METALS LAB
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EXTERIOR CONCEPT
INTERIOR CONCEPT
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