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FACULTY PERSPECTIVE

# REBUILDETROIT AND FINE FOCUS COLLABORATION TO FOSTER SUCCESSFUL STEM EDUCATION OPPORTUNITIES

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## Overview of the NIH ReBUILDDetroit Program

The Building Infrastructure Leading to Diversity (ReBUILDDetroit) NIH grant was awarded in 2014 as a Consortium-wide effort to expand and develop avenues for students from underrepresented and socio-economically disadvantaged backgrounds to experience an undergraduate education designed to expose them to biomedical research and career opportunities in STEM fields. The Consortium consists of faculty and staff from the University of Detroit Mercy (UDM) and Wayne State University, with the overarching goal to provide collaborative academic, pedagogical, and research-based opportunities for students that are accepted as ReBUILDDetroit Scholars. ReBUILDDetroit is one of only 10 NIH-funded BUILD awards in the country and has been an exciting and transforming opportunity for both students and faculty across the Consortium. The focus and timing of this grant support aligns nicely with the re-envisioning and revitalization of Detroit as a hub for urban invention and opportunity.

## Benefits of the NIH ReBUILDDetroit program at UDM and consortium institutions

The components of this NIH funded program for students and faculty at all institutions are numerous and diverse but include a pre-college summer enrichment program, cross-institutional collaborations, curricular re-design, and faculty-mentored research opportunities for ReBUILDDetroit scholars as soon as the summer after their first year. In addition, UDM students are provided stipend and tuition support and intensive mentoring to help them navigate the academic and personal struggles that may come as they progress through their undergraduate education. Educational opportunities and research based pedagogy is available to scholars interested in one of three areas of research: biology, chemistry, and health disparities. ReBUILDDetroit Scholars begin their first year with courses designed to provide hands-on

authentic research experiences in the classroom that give them the technical and theoretical skills to approach learning and data collection with critical thinking, persistence, and confidence. Students are matched to research mentors in their summer after their first year and begin a collaborative relationship with a research mentor where they are able to further develop the skills they have learned in their research based courses and begin their transformation into productive and prolific research scientists.

Intensive mentoring, cohort building, leadership roles, and exposure to opportunities for these students in the different areas of science support academic and personal goals as well as open students' eyes to the wealth of career possibilities this unique undergraduate educational experience can lead to. All of this on top of a traditional degree-granting curriculum in their academic department of choice means that the ReBUILDDetroit Scholars are immersed in a unique and supportive environment to guide them through the trials and tribulations of the college experience all the while giving them a great opportunity for experience and growth as future research scientists.

Over the last four years UDM and its ReBUILDDetroit Scholars have learned a tremendous amount. Exposure to the process of how to choose a mentor that fits your learning style and goals, how to think like a scientist, and how to identify as a contributing member of a research team are new ideas and objectives for ReBUILDDetroit Scholars. These skills are a model to ultimately build and sustain diversity in biomedical and health research professions in Detroit and around the country. Faculty have been provided mentoring training and experiences, pedagogical training for course-based undergraduate research experiences (CUREs), as well as professional training and guidance for advising and working through unique issues that students from diverse and disadvantaged groups may bring to their undergraduate education. These types of personal and professional development opportunities disseminate throughout the student body at

our university and make for stronger and more effective faculty to serve our students. Students in the ReBUILDetroit program at UDM have met with leading scientists and researchers in many fields of study from around the world. They have traveled to and presented at scientific conferences in Michigan, California, Georgia, Louisiana, and Washington DC, just to name a few. These travel and presentation opportunities are few and far between in a traditional undergraduate education so all academic institutions participating in ReBUILDetroit are excited and humbled by the opportunity to expose undergraduate researchers to as many avenues of growth as possible. Participation in the ReBUILDetroit NIH program has therefore expanded student horizons and their view of possibility.

#### UDM ReBUILDetroit/Fine Focus Collaboration

When we at UDM were approached by Dr. John McKillip, faculty mentor and Managing Editor of Ball State's *Fine Focus* publication, to collaborate on a project designed to explore and comment on diversity and its role in undergraduate educational opportunities in STEM fields, along with providing an opportunity for UDM ReBUILDetroit Scholars to gain experience in the process of double-blind peer-review and assembling a scientific publication we jumped at the opportunity. Initially the collaboration was most attractive as an avenue to expose young scientist in training at UDM to another aspect of being successful in biomedical research, peer-review and publishing of scientific manuscripts. Scholars have participated in generation and analysis of data, and even presentation of data in a conference setting however they had not delved into the process of getting that data published in a peer-reviewed publication; a hallmark of biomedical research success. Ten of our highly motivated ReBUILDetroit Scholars, Ball State student editors, staff, and faculty from both UDM and Ball State met four times over the course of the Fall 2017 semes-

ter for intensive manuscript review sessions and student interview opportunities. The *Fine Focus* team of students interviewed and recorded personal accounts of success and struggle that our UDM Scholars have experienced in their pursuit of a career in the biomedical sciences. These candid and well-structured interviews drew out the most honest and humbling accounts of persistence, self-awareness, and tenacity from our UDM Scholars and opened even our eyes here at UDM to the potential that our students possess.

What we found when our two schools provided these opportunities for student interactions was a deep reflection from students from both universities as to what has led them to scientific fields of study, what challenges they have faced, and how they have overcome these challenges and walked away with a better understanding of themselves and the strength it takes to reach the goals they have set for themselves both personally and professionally. Student perspectives published in the Spring 2018 issue ([finefocus.org](http://finefocus.org)) label this collaboration as "insightful", "enjoyable", and "fulfilling". These descriptions, I believe, hold true for faculty and staff involved as well. As a faculty member advising and guiding ReBUILDetroit Scholars through academic programs and research opportunities I am thoroughly impressed and proud of the mature and open attitude that all students demonstrated throughout this collaboration. Students, faculty, and staff from both universities were able to share meals, stories, goals, and a lot of laughs over the course of these campus visits leading to a bond and respect that we at UDM hope will continue for years to come. We at UDM believe that opportunities such as this collaboration with the *Fine Focus* team and others like it show that the mission of the ReBUILDetroit grant and collaborative opportunities such as this one are vital to the future of science education and providing quality professionals in all areas of STEM.