

Regenerative Medicine Minnesota
Preliminary Progress Report

Grant Title: Minnesota Regenerative Medicine Education & Outreach Program
Grant Number: MRM 2015 UED 001
Program Director: Randy S. Daughters, PhD
Project Timeline: May 1, 2015 – April 30, 2016

Re: Preliminary progress report for MRM 2015 UED 001 during grant year one.

This report gives a brief and preliminary overview of the progress made, during the initial year of funding, towards achieving the stated objectives of the MRM 2015 UED 001 award. This report is part of the request for renewal of the **Minnesota Regenerative Medicine Education and Outreach Program (MRMEOP)** for 2016. Additional specific measures of program progress are embedded within the submitted proposal as well as reflected by the expansion in the aims and new collaborative initiatives. The overall objective of the MRMEOP is to facilitate the understanding and integration of foundational concepts in regenerative medicine (RM) for underrepresented students and members of the community through expansion of educational, training, and outreach opportunities in Minnesota.

Although the core components of this program have been developing since 2012, funding support during 2015 from Regenerative Medicine Minnesota (RMM) has been absolutely instrumental to the successful expansion of the reach and impact of the program. This exponential increase in impact is largely a result of a highly collaborative network of educators, scientists, students, and community members, from all corners of Minnesota, committed to fostering the understanding of, and training in, the field of regenerative medicine. *The primary aim of the 2015 MRMEOP educational proposal was for the development of an undergraduate research internship program in regenerative medicine* that reached students from underrepresented or non-traditional student populations throughout Minnesota. With the initial year of funding, we are excited to report that we have achieved this core objective through establishment of the Regenerative Medicine Undergraduate Research Internship Program (RMURIP). As initially proposed, this is a year-long internship program that includes: a 10-week intensive summer research project with concurrent curricular activities at the University of Minnesota Stem Cell Institute, an academic year research and educational component at the student's home institution, and presentations at the annual Regional Regeneration Symposium. The 2015/16 year funding from RMM supported not only the necessary infrastructure for development of the internship program but is essential in funding student stipends and supply costs directly supporting summer and academic year research projects for 12 undergraduate students from 7 different institutions throughout Minnesota. A preliminary assessment of intern demographics suggest that students reflected our core objective of recruiting a majority underrepresented or non-traditional students to the program (66% female, 42% students of color, 75% 1st generation college students). For the 2016/17 internship program we received a total of 93 highly competitive undergraduate student applicants through the RMURI program site. As a result of the successes achieved during year one and to further meet our overall objectives in program reach and impact, we spearheaded the establishment of a new collaboration with Dr. Katie Campbell, Director of the Mayo IMPACT program, with the aim of developing summer research opportunities in RM for interns in the RMURI program in faculty laboratories at Mayo in Rochester. This initiative is outlined in the proposal.

A unique component of the internship program, not originally proposed but that has been highly successful, is the integration of student research and curricular activities with the requirement for community outreach in regenerative medicine. Throughout the year, interns participated in multiple RM outreach activities that targeted underrepresented student populations from schools throughout Minnesota. Program faculty and interns conducted 11 outreach activities teaching hands-on curriculum that reached over 600 students in grades 5th-12th, with an average of 71% being from URM or non-traditional student populations. These outreach activities grew exponentially in 2015 as a direct result of RMM funding and a highly productive collaboration with HealthForce Minnesota. The exciting success of this collaboration has led to a more effective strategy for expanding the reach and impact of RM related activities and the formal alignment of education and outreach initiatives planned for 2016 as proposed in the request for renewal.

RMM funding also helped expand the reach and focus of the Regional Regeneration Symposium (RRS). The RRS was held on November 12th 2015 at Macalester College and directly reached 97 undergraduate students from 9 different colleges throughout Minnesota. Students presented progress on research projects through 4 oral and 22 poster presentations. In addition, funding helped support the expansion in focus of this years RRS to include a faculty keynote talk on the cutting edge area of 3D Bioprinting in RM as well as the development of a regenerative medicine education session. The education session, for the first time, provided a platform that brought together faculty, teachers, and community programs to present and discuss education and outreach activities specific to regenerative medicine being done at all grade levels from secondary schools to colleges throughout Minnesota.

With the support from RMM, MRMEOP has been effective in meeting our stated objectives for year one as well as driving the significant expansion of complementary efforts in the area of regenerative medicine education and training throughout Minnesota. The successful renewal of this program will officially establish a support mechanism for the new partnerships with the aim of more effectively reaching and integrating underrepresented student populations starting in grades 3-12 through the undergraduate level in regenerative medicine.