

Regenerative Medicine Minnesota Progress Report

Grant Title: Stem Cell Biology Graduate Program Biobusiness Alliance Internship Program

Grant Number: MRM 2015 UED 003

Requester: Susan Keirstead, PhD

Project Timeline: May 1, 2015 – April 30, 2016 (extended through September, 2017)

Brief description of project:

This project involved placing Stem Cell Biology MS graduates in internship programs at local MN Biobusinesses with the intent to build relationships between the Stem Cell Institute at the University of Minnesota and biobusinesses in Minnesota. Two graduates were placed in two different businesses: one in Biotechne and the other in Miromatrix. The program paid their salary for 5-6 months.

Where did this project take place?

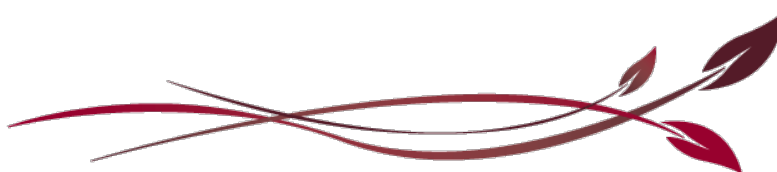
Biotechne is in northeast Minneapolis, and Miromatrix is in Eden Prairie, MN.

People impacted by project and where they are from:

Two University of Minnesota SCB MS graduates were placed in biobusinesses in the Twin Cities area. The individuals were from India and Wisconsin, originally, and were trained in Minnesota at UMN. The businesses were in the Twin Cities area, as noted above.

What was the outcome of the project? (Did the project work the way you expected it to?)

The project worked as we expected it to, and it exceeded the expectations of the participants. Both interns reported positive experiences in their respective placements, and one intern was hired by the biobusiness upon completion of the internship. The other intern was not hired by the business as there were no openings at the time, but she reported that the experience was an asset when applying to other technical jobs. She received several job offers upon completion of the internship, and accepted a technical job in an academic lab, where she uses the skills she acquired in her degree program and internship.



The supervisors of the interns also gave positive reviews of the experience, and indicated that they would participate in the program again if it were continued. They indicated that their team benefitted from the contributions of the interns, and that their training in the SCB MS program had prepared them well for their roles in the teams they joined. When asked if the internship met expectations, one of the supervisors responded: "Yes, the intern was a great addition to the team and his input was needed and greatly appreciated at that time as we were transitioning to a single team and his help made the transition smoother."

What were the successes?

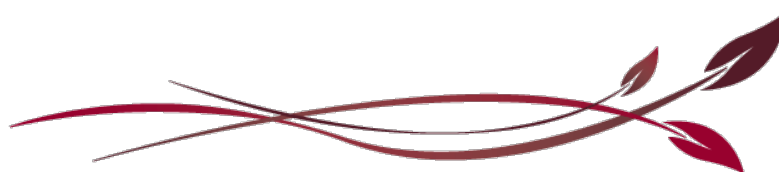
One of the main goals of the project was to forge relationships with biobusinesses in Minnesota so that we can understand how our graduates can contribute to the skilled work force that these businesses require. This project achieved that goal, evidenced by the assurances from the supervisors that our graduates were well-prepared for the roles they played in the business. Furthermore, as a result of this project, both companies have reached out to me on several occasions when they were looking for candidates to fill other jobs. In addition, as a result of the networking with MN biobusinesses that I did in my search for internship placements, I was able to introduce individuals from two businesses, Stemonix and Biotechne, and, as a result, they have begun some collaborative efforts in their product development. So this project has strengthened relationships between the Stem Cell Biology graduate program and local biobusinesses, and has led to a pipeline of skilled workers into the industry that had not existed previously.

What were the failures?

A goal of the project was to introduce Stem Cell Biology MS graduates into Minnesota biobusinesses to provide a mutually beneficial experience, and ideally, would lead to interns being hired and continuing to contribute to the business' mission. This occurred in the case of the one intern who was hired by Miromatrix. However, since there were no openings in Biotechne at the end of the internship program, one of the interns did not stay in Minnesota. Although both she and Biotechne benefitted from the internship program, our hope was that our interns would be able to continue to contribute to the mission of a Minnesota biobusiness. But as mentioned above, the relationship with Biotechne is a lasting one. Just this week I was contacted by them and asked if I could help them identify strong candidates for a job opening. This continuing relationship is definitely a long-term achievement of the internship program.

How did it impact regenerative medicine in Minnesota?

Through the internship program two SCB MS graduates from the University of Minnesota gained useful experience in a business setting where they were able to use their skills to contribute to the business teams. The biobusinesses, which manufacture either reagents used in regenerative medicine research throughout the state (and the world) or conduct research and development in the field of organ regeneration in vitro, benefitted from the interns' contributions to their work. Miromatrix was able to hire the



intern at the end of the program and move forward faster and more effectively with their liver regeneration project as a result.

Please list any of the following that have resulted from your Regenerative Medicine Minnesota grant funding:

- Publications and/or manuscripts submitted for publication
- Disclosures/patents
- Other grant applications and/or awards

Responsible Spending:

The funds were spent on intern salaries, which were determined based on industry standard.

Expense	Dates	Stipend	Total
Intern Salary: Preethi Swaminathan	9/7/15 - 2/5/16	\$30,726	\$30,726
Intern Salary: Aron Stumbras	3/1/17 - 9/8/17	\$33,184	\$33,184
Indirect costs	5/1/15 - 9/8/17		\$21,090
Total Costs	5/1/15 - 9/8/17		\$85,000

