**Bruce Taterka & Rose Cory**

**FINAL PolarTREC Teacher Researcher Networking Strategy**

**April 18, 2014**

Recent Developments

1. Rose was selected to participate in PolarTREC again for the 2014-2015 year, and Bruce was involved in the selection process of Regina Brinker, this year’s teacher.

2. Bruce is communicating with Regina about expedition issues.

3. Rose and Bruce have been communicating about Bruce’s outreach efforts with local newspapers, talks at local libraries, and talk at the NSTA meeting in Boston

4 Rose & Bruce are actively working on finalizing the package of labs and lessons plans for high-school students based on Rose’s research.

5. Rose & Bruce will be discussing outreach efforts based on the lab & lesson plans.

6. Bruce has been communicating with Rose & George’s students from time to time, and has provided them with photos from Toolik that they have used in slide presentations & posters.

Status Report on Previous Plans

1. Pre-field communications:

* Teacher (Bruce) and researcher (Rose) communicated regularly by email/ phone
* Rose skyped with Bruce’s classes in May 2013

2. Pre-project collaboration on outreach and networking:

* Rose has posted a blog entry on Bruce's joining the team, linking to local NJ newspaper reporting on Bruce being a PolarTREC teacher.
* Bruce created a short video about the project science to post on VBC, which Rose posted on her blog.
* Bruce has articles published in local newspapers including information on researchers.
* Bruce has submitted an abstract to National Science Teachers Association to present a session on teacher-research experiences at Boston 2014 meeting, and obtained input from Rose to use in the talk.
* Bruce met with other Toolik researchers and staff and worked on their projects during expedition.

3. Post-project collaboration on outreach and networking:

* Our major post-project collaboration has been developing a series of lecture and lab modules for K-12 students based on Rose’s work. We have formalized this commitment in Rose’s application for an NSF CAREER grant and have already begun work. Bruce has recruited two other K-12 educators to collaborate on this project and Rose has budgeted funds in her proposal for us to travel to Toolik during the 4-years of the grant, and also for lab equipment and travel to conferences.
* Presentation of lecture and lab modules at conferences.
* Still considering plans to visit Rose's lab and George’s lab at UM if the opportunity arises.
* Still considering plans to have researchers come to Mendham High School - it's an easy trip if someone is already travelling to the New York City area.
* Rose & Bruce have been discussing plans to have Rose analyze water samples collected by Bruce’s students? Students will plot or look at plots of water color/character over time (before or after snowmelt, rain storms, etc) to learn about the flow of organic carbon from land to water, and what happens to that carbon once it is in water. In particular, the project would involve running water samples collected by Bruce’s students in Rose’s fluorometer, look at seasonal changes in DOM over time in the river. The concepts from our work in the Arctic apply to C cycling in any aquatic system.
* Other opportunities for Bruce's 11th & 12th grade students to work with researchers:
  + IB students have to do an "Extended Essay," which is an original research project conducted in 11th & 12th grade. It would be great to have them possibly analyze a small data set or do some other type of original research relating to the team's work. See above, we can run samples.
  + summer research
  + undergraduate work at Michigan
* Research promoting high school girls in science - possibly connect them with Rose for projects in some way
* Bruce has and will continue to reach out to MHS alumni who are studying environmental science/chemistry in college and encourage them to apply for REU or internship opportunities at Toolik.
* Toolik Data has been shared with math teachers at Bruce’s school, and has been used for statistical analysis.

4. How are we collaborating to write and review lesson plans after the expedition?

* email and phone and skype

5. ARCUS provides some funding to support travel to support collaboration. What ideas do you have for utilizing this support?

* Teacher or researcher travel to visit one another's schools
* Travel to conferences to co-present
* I would love to get my students involved in presenting at conferences. This would work especially well if one of my students did an Extended Essay on some aspect of the research that they could present on, either solo or in collaboration with the teacher and/or researcher. (See above)

6. How researchers will help me educate classes about the science.

* Educating me will help me educate my students
* Brainstorming on ideas via email/chat/phone
* Verbal/written feedback on ideas, drafts, proposals
* Personal visit to classroom
* Skype/Video
* Email communication with a select student or small group of students

7. Are there specific materials/skills/work product the researcher is hoping to get from the teacher?

* lesson plans
* communication of science on a K-12 level in various formats - videos, powerpoints, diagrams, posters, short narrative descriptions, activities
* What about surveys on knowledge of the arctic or climate change before/after Bruce’s experience? It would also be great to find a way for me and George to use some of Bruce and his students’ experiences on our courses (global change-GWK, and new courses developed at UM by RMC). Yes. Pre-and post course surveys will be useful, and so will comparison of surveys from 2013-2014 students with surveys of students from previous years.