

**CNAES**  
**HQP Research & Collaborative Exchange**  
**Funding**  
*Visit report*

**1. Exchange information**

Visitor: **Dr. Keith Somers visiting Vanessa Bourne, MSc Candidate, Theme I**

Supervisor: **Dr. John Gunn and Dr. John Bailey**

Location: **March 21<sup>st</sup>- 23<sup>rd</sup> 2018, Laurentian University- Living with Lakes Centre**

**2. Objective/Purpose**

The main objective of the visit was to learn two statistical approaches to predictive modeling commonly used in aquatic biomonitoring (BEAST Modeling and Nearest Neighbor Modeling) using the program R. I am applying these techniques to answer my master's thesis research question which looks at the impact of seasonal variation of benthic macroinvertebrate community to aquatic biomonitoring in the Ring of Fire region. In my master's thesis analysis, I used traditional statistical techniques to answer this research question but with this new statistical knowledge I am able to create the predictive models that are going to be applied to aquatic biomonitoring in the Ring of Fire region and determine how seasonality directly impacts them.

**3. Description of the visit**

Keith came to Sudbury for two half days and one full day session. The first day we went over the ins and outs of these statistical methods on a board scale. The next day we physically went through the BEAST predictive modeling in R using a subset of my master's thesis data. The following morning, we discussed residual question and what my next steps were for applying these methods to my thesis question.

Since this learning session, Keith and I have kept in contact and he has been a great resource for discussing the application of these techniques to my data. I am working on creating a presentation which incorporates this analysis for the Association of Limnology and Oceanography conference in Victoria this June.