

## Summary of Research for Professor De Ruiter

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Many wild animals are tagged with electronic devices to allow researchers to observe their behavior from afar. Although tags are useful to collect information from the animals, the data they produce is often complex and difficult to interpret. As a result, researchers need software tools to process the data to make more sense of it. Our project aims to create tools for processing data coming from animal tags and help researchers around the world. The project, funded by the US Office of Naval Research and the Calvin Alumni Association, is staffed by a team of researchers from Calvin College and the University of St Andrews.. The team has decided to develop tools in both R, Octave, and Matlab, which are programming languages for statisticians and mathematicians worldwide. The completed tools will be freely available online for all people involved with bio-logging tag data to use anywhere anytime.

The research methods are simple. The researcher at St. Andrews or at Calvin College writes up a programming tool in R or Matlab. The student researchers look over the program, record it in a shared wiki for everyone, and translate it in the other programming language being used. This has to be done for every programming tool created. The student researchers from Calvin were encouraged to have individual projects related to the whale tag data. A documentation web site for the tool kit (<http://www.animaltags.org/doku.php>) is up and accessible to everyone around the world, with wiki pages for many programming tools already completed. Matlab, R, and Octave versions of most of the tools are also complete, although development and translation of some tools is still ongoing. A workshop will be hosted in St. Andrews on August 7 to August 9 to help researchers get familiar with the tools, at which Calvin student researchers will serve as teaching assistants. Until then, the researchers in both St. Andrews and in Calvin College will work to finish making all tools completed and official to go.

I learned a lot from this research project. I am originally a computer science student learning how to program. I learned that programming is used everywhere around every research program. I also learned that I want to pursue research in computer science or computational biology. Overall, it was a great experience.