MISG outline

1-2 pages

Winter processes in the Laurentian Great Lakes are comparatively understudied compared to summer processes.

* Logistically hard to sample during the winter
  + Need expensive and specialized equipment
  + Ice is not renowned for being a stable structure, making sampling a safety risk
  + Traditional limnology viewed winter as a time of inactivity and senescence

Introducing winter severity

* How I am defining it: Snow and Ice thickness
* Can I bring up climate change???
* Creates a physical barrier between the lake surface, the atmosphere, and the terrestrial environment.
* Has impacts on underlying ecological and biogeochemical processes during the winter
  + Effects also impact the subsequent spring and summer.
  + Influences lake productivity, carbon cycling, and nutrient availability.

Tie to larger problems and Sea Grant “mission and vision”

* Sea Grant Mission
  + Committed to research, education, and outreach. Facilitate partnerships with institutions and people to cultivate a healthy ecosystem, community, and economy in the Great Lakes.
* Sea Grant Vision
  + Envision a healthy, sustainable, and accessible Great Lakes ecosystem and communities that depend upon them.
* How to frame my research
  + Changing winter conditions can upset “normal” lake processes and have cascading effects on ecology and biogeochemical processes. This could threaten the Great Lakes' water quality and the biota's health. Our research will focus on shifting microbial communities and how they react to varying winter severity. Phytoplankton provides the majority of productivity in the lakes and therefore their sur