

Healing Wintergreen: a Collaborative Course Study

To enhance further transferability of BMCC courses to nearby Lake Superior State University (LSSU), new courses have been added within the Science Department. In this case, Introduction to Organic and Biochemistry (CH110) has been added to BMCC's course offerings and transfers directly to LSSU as CHEM 110.

However, the current initiative spans a broader impact than course additions. BMCC is teaming up with LSSU to provide students with a laboratory opportunity that is both culturally relevant and infused with state-of-the-art equipment. This collaborative effort will allow students experience in the field while giving them a taste of what it's like to work in a lab at a 4-year institution. The conversion of methyl salicylate (wintergreen oil) to salicylic acid (aspirin) is one that's performed in many introductory organic chemistry courses. The project expands upon this experiment to offer students a *step back* and a *step forward*:

The step back: students have the opportunity to identify and collect the native wintergreen plant (*Gaultheria procumbens*). The project invites Tribal elders and traditional healers to speak on the traditional uses of wintergreen. Students then distill the whole plant, creating an essential oil.

The step forward: BMCC students team up with LSSU to use the newly acquired Bruker Ascend Aeon 400 MHz Nuclear Magnetic Resonance Spectrometer to identify the unique chemical footprint of the wintergreen oil and aspirin they've created.



In addition to increasing student experiences, the project has sparked a unique grant opportunity among BMCC and LSSU. Drs. Marshal Werner (LSSU) and Diana Cryderman (BMCC) have submitted a proposal for the American Chemical Society's Collaborative Opportunities Grant Program. If funded this award will assist BMCC in purchasing two essential oil distillation apparatuses and melting stations. Selection of these funds will be announced August 2017.

****On August 10, 2017 BMCC received word that the funding for this grant was approved. The grant funds will be used to purchase chemicals, equipment, and glassware.**