Computational Science Methods, (6 Credit Hours)

The Computational Science Methods track is open to a total of 15 high school students that meet the requirements for program admission.

Computational science is the use of computer modeling and simulation to solve problems in all areas of biology such as microbiology, environmental science, anatomy and physiology, botany, pharmaceutical and academic research problems. Computational science is an exciting modern field of science that involves the interdisciplinary study of math, science, and computers.

This program would appeal to students who are interested in setting themselves apart from those who receive degrees in the traditional field of biology. The computational science program is designed for students who plan to attend a two- or four-year college or university with a major in biology and a minor in computational science. After completing this program, the student will be better prepared to perform at the junior level in a postsecondary program in terms of research, independent study and scientific focus.

**Semester One – August to December**
CST120 meets two times per week on Monday and Wednesday 7:30 to 8:50am

**CST120: Computational Science Methods (3 credit, 3 contact hours)**
The purpose of this course is to introduce the student to basic mathematical concepts relevant to computational science. The course will cover basic statistical analysis and mathematical operations as applicable to the study of science. Data analysis will include fitting data with mathematical functions and developing first and second order differential equations. Other topics relevant to computational science will also be presented, such as recognition of sources and computer error.

**Semester Two – January to May**
CST121 meets three times per week on Monday and Wednesday 7:30 to 8:50am and Friday 7:30 to 8:30am

**CST121 – Modeling and Simulation (3 credit, 4 contact hours)**
This course analyses a variety of scientific problems by designing a representative model, implementing the model, completing a verification and validation process for the model, reporting on the model in oral and written form, and changing the model to reflect corrections, improvements and enhancements.

**Prerequisites**
CST120 - Computational Science Methods

**There is no cost to the student for this program.**

**INTERESTED STUDENTS** need to meet with their guidance counselor and complete a dual enrollment admissions packet for admission to Stark State College and this program. Completed student enrollment packets (dual enrollment application form, high school transcripts, COMPASS scores & course enrollment form) need to be sent to Waneta Petty at Stark State by May 1, 2013.