I. Mission
Pre-Med/Pre-Vet: The Biology Pre-Med/Pre-Vet concentration encompasses an overall knowledge of biological concepts with an added emphasis in organismal health. Students should leave with a broad knowledge of biology, ecology, and chemistry, combined with critical thinking skills, to be applied to whichever organismal health field they choose.

II. Goals
PreMed Prevet Concentration:
This concentration is for those interested in going on to professional schools such as medical school, dental school, vet school, or similar institutions. This concentration ensures that students:

- Develop an appreciation for living organisms and biological processes
- Acquire a broad foundation across all levels and disciplines in biology
- Develop analytical and critical thinking skills
- Develop scientific writing and communication skills
- Understand the scientific method and process
- Understand natural selection and evolution
- Understand prokaryotic and eukaryotic cell biology
- Understand ecological concepts and quantitative analysis of data
- Understand concepts Mendelian and molecular genetics
- Understand animal and plant phylogeny and morphology
- Understand concepts in the chemical foundations of biology
- Explore general concepts in biology, chemistry, and physics in depth
- Engage in current thinking, discoveries and methodologies in biology in the health sciences field
- Understand human form and function for the 11 human systems
- Understand changes of normal mechanical, physical, and biochemical functions as a result of disease or some abnormal syndrome
- Understand the structure, properties, composition, reactions, and preparation of carbon-based compounds
- Understand the chemical processes in living organisms

III. Student learning outcomes
1. Develop an appreciation for living organisms and biological processes
2. Engage in current thinking, discoveries and methodologies in biology
3. Develop analytical and critical thinking skills
4. Develop scientific writing and communication skills
5. Understand the scientific method and process
6. Understand natural selection and evolution
7. Understand prokaryotic and eukaryotic cell biology
8. Understand ecological concepts and quantitative analysis of data
9. Understand concepts Mendelian and molecular genetics
10. Understand animal and plant phylogeny and morphology
11. Understand concepts in the chemical foundations of biology
12. Explore general concepts in biology, chemistry, and physics in depth
13. Understand human form and function for the 11 human systems
14. Understand changes of normal mechanical, physical, and biochemical functions as a result of disease or some abnormal syndrome
15. Understand the structure, properties, composition, reactions, and preparation of carbon-based compounds
16. Understand the chemical processes in living organisms

IV. Course map
Pre-Med/Pre-Vet

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V. Assessment tools
Practice MCAT – Outcomes: 3, 7, 9, 13, 11, 15, 16,
(MUM) Assessment of understanding and acceptance of evolution – Outcomes: 5, 6, 10
Acids and Bases test (assesses understanding of acids and bases- Outcomes: 11, 12

VI. Summary of findings/Level of achievement of student learning outcomes
Nearly all of the graduates this year were Pre-Med/Pre-Vet. This allowed us to choose the practice MCAT for them since it is a very appropriate exam. Sarah MacDonald administered the Biology section only in an online format in the interests of time and it is the section most applicable to the biology program. The Measure of Understanding and acceptance of evolution (MUM) and Understanding of acids and bases were created by William Romine as assessment tools for education research that also address
The national average score for the biology subsection in 2013 was 8.8.

Subscores within the Biology section of the MCAT for tested MVC graduates:
Average Percentage Biology Subsection: 57.7
Average Percentage Organic Chemistry Subsection: 33.7
VII. Analysis/Interpretation
Scores for the biological sciences vs. organic chemistry subsections (within the Biology section of the practice MCAT) were widely divergent in most students. Most students scored considerably higher on the biology section versus the organic chemistry section. Scores for the acids and bases section were also relatively low. Understanding of evolution was high while acceptance was lower on average than understanding.

VIII. Action plan/Closing the loop
Some changes need to be made in chemistry/organic chemistry courses so that students are better prepared for the MCAT. Biochemistry will have the biology section of the MCAT incorporated as a normal exam in the course next spring to help facilitate this. Since all PreMed/PreVet students are required to take this course and it is usually taken in the Junior and Senior year, this will make assessment easier and more reliable since it will be part of student’s grades. It would be helpful for a general chemistry and/or physics course to do the same with the physical sciences section of the MCAT to cover more learning outcomes. Some outcomes are very difficult to assess under our current course requirements and may need to be changed.

IX. Faculty/Student information

Table 1. Program Faculty

<table>
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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Katherine Adams</td>
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John Gault  Math/Science
Waylon Hiler  Math/Science
Jeffery Kimmons  Math/Science
Sarah MacDonald  Math/Science
Marilyn Milovich  Math/Science
Erich Mueller  Math/Science
Stephen Patton  Math/Science
Michele Reinke  Math/Science
William Romine  Math/Science
Allan Wilson  Math/Science

**ADJUNCT**
Include all adjunct faculty who taught at least one course in the program in the past year regardless of their division affiliation. (No list of names required.)
Number of adjunct: ________1_________

**Table 2. Student Profile**

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*Includes all three Biology concentrations
+Includes only Premed-Prevet graduating seniors

**X. List of individuals who assisted in the completion of this report**

Sarah J MacDonald
Waylon Hiler

Updated 9/10/12