FLIPPING CIRCUITS I & II
The eFellows Program

- 2011 & 2014 Provost eFellow
- Initial requirement included reduced seat time
- Looked at entire curriculum objectively
- Methods to increase success
Strengths of the Partial Flip

• Student pace
• Time in class to reinforce
• Preserve instructor teaching style
• Student perceptions
Format for Circuits II

• Two 50-minute class sessions per week, down from three sessions
• Short video lessons, fully ADA compliant
• Online quizzes after video lessons
• Three in-class exams
• Final Exam
• Out of class homework
Format for Circuits I

• Short video lessons, fully ADA compliant
• Short problem solving videos
• Construction of a video library
• Four in-class exams
• Final Exam
• Out of class homework
Online Materials

• Video lessons
  – Annotated PowerPoint Slides
  – “Theoretical” concepts (Circuits I & II)
  – Problem videos (Circuits I)
  – Closed Captioned

• Quiz after each video for Circuits II

• Students review and re-watch
Frequency Response Video Lesson

The basic material is constructed in advance, annotations and explanations added during recording just as during traditional lecture.
During Class – Circuits II

• Some traditional lecture retained
  – Conducted in questioning method

• In-class group problem solving
  – One problem per group of 3-4 students
  – Students encouraged to discuss potential solutions
Results – Circuits II

• Students not originally in blended section requested video access
• Students provided positive response to reduced class time
• Exam scores did not significantly change when compared to traditional classes
Exam Scores – Circuits II

Final Exam

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<thead>
<tr>
<th>Year</th>
<th>Traditional</th>
<th>Blended</th>
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Student Comments
Circuits II

• I think the videos were the perfect length with just the right amount of content. It might have been neat to see some real-world applications in a sort of "How It's Made" format but that might be going a bit over the top.
• It made it easier to refer back to a particular lecture if you were weak in any one area.
• The videos were better than having notes because you had the lecture along with the notes so you did not miss the little things that were said that you sometimes miss while taking notes.
Conclusions

• Student success maintained
• High student satisfaction
• Allows greater flexibility
• Encourages students to become self-learners