The overarching goal of IMPACT is to transform large enrollment foundational courses in order to achieve a student-centered learning environment through:

- active and collaborative learning
- student-centered teaching and learning practices and technologies

The redesign of STAT301 aims to achieve two main goals:

1. Improve students learning experience by adopting a flipped classroom model combining online presentations with interactive classroom discussions and work sessions.
2. Introduce an innovative educational method that explores the use of two languages to enrich the students education and to provide the opportunity of learning in a multi-cultural environment.

STATISTICS 301 BILINGUAL (English/Spanish)
Laura Cayon, PhD, IMPACT Cohort
IMPACT Advisory Team:
Clarence Maybee, MLIS; Wei Liu, PhD; Patricia Darbishire, PharmD
Purdue University, West Lafayette, IN

GOALS
The introduction of the course above presents an example of the format of duplicate slide sets as those planned to be used in the bilingual online lectures

SUPPORT TEAM
IMSA Faculty fellows receive support throughout their redesign process by teams comprised of staff members from CIE, ITAP, Purdue University Libraries, PEC, and the DLRC.

Pictured left to right: Laura Cayon, Clarence Maybee, Wei Liu and Patricia Darbishire.

COMPARISON OF TRADITIONAL AND REDESIGNED COURSE

<table>
<thead>
<tr>
<th>TRADITIONAL COURSE DESCRIPTION</th>
<th>TRANSFORMED COURSE DESCRIPTION</th>
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<tbody>
<tr>
<td>Course Goals:</td>
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<tr>
<td>• Identify appropriate experimental and sampling designs</td>
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<tr>
<td>• Use elementary statistical methods to analyze data</td>
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<td>• Draw conclusions from these statistical analyses</td>
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<td>• Use SPSS statistical software</td>
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<tr>
<td>• Critically evaluate statistical reports written by other people, including students, researchers, businesses, and reporters</td>
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<tr>
<td>• Write statistical reports using correct terminology, analyses, and graphs</td>
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Course Participants:
Over 1000 students per semester including Undergrads in Agriculture, Health and Human Sciences, Science, Technology, Pharmacy

Course Prerequisite:
MA153 and MA154 (Algebra And Trigonometry I and II) or equivalent

Course Prerequisites:
MA153 and MA154 or equivalent
Spanish 300 level or equivalent
Spanish comprehension, although fluency not required.

Course Model:
1. 25 sections of 40 students in a traditional lecture setting
2. 2 sections of 40 students enrolled in online version

NEW LEARNING OUTCOMES

1. Differentiate between: Population / sample, parameter / statistic, experiment / observation, categorical / quantitative variable, distribution of a variable (population) / sampling distribution.
2. Analyze a data set using the appropriate statistical method (given how a study has been planned and what its aims are), by hand and/or using SPSS.
3. Interpret and draw conclusions from a statistical analysis.
4. Evaluate statistical analyses done by others including those in published papers.
5. Describe in Spanish the basic concepts covered in this course.

CURRENT AND FUTURE WORK

1. Develop appropriate learning objectives specific to the bilingual attribute of this course.
2. Decide on the most appropriate way to enact a bilingual course using the "flipped classroom" model.

A SYMPOSIUM FOR THE CHANGING CLASSROOM
MARCH 26 – 27, 2014