STATISTICS 301 BILINGUAL (English/Spanish)

Laura Cayon, PhD, IMPACT Cohort
IMPACT Advisory Team:
Clarence Maybee, MLIS; Wei Liu, PhD; Patricia Darbishire, PharmD
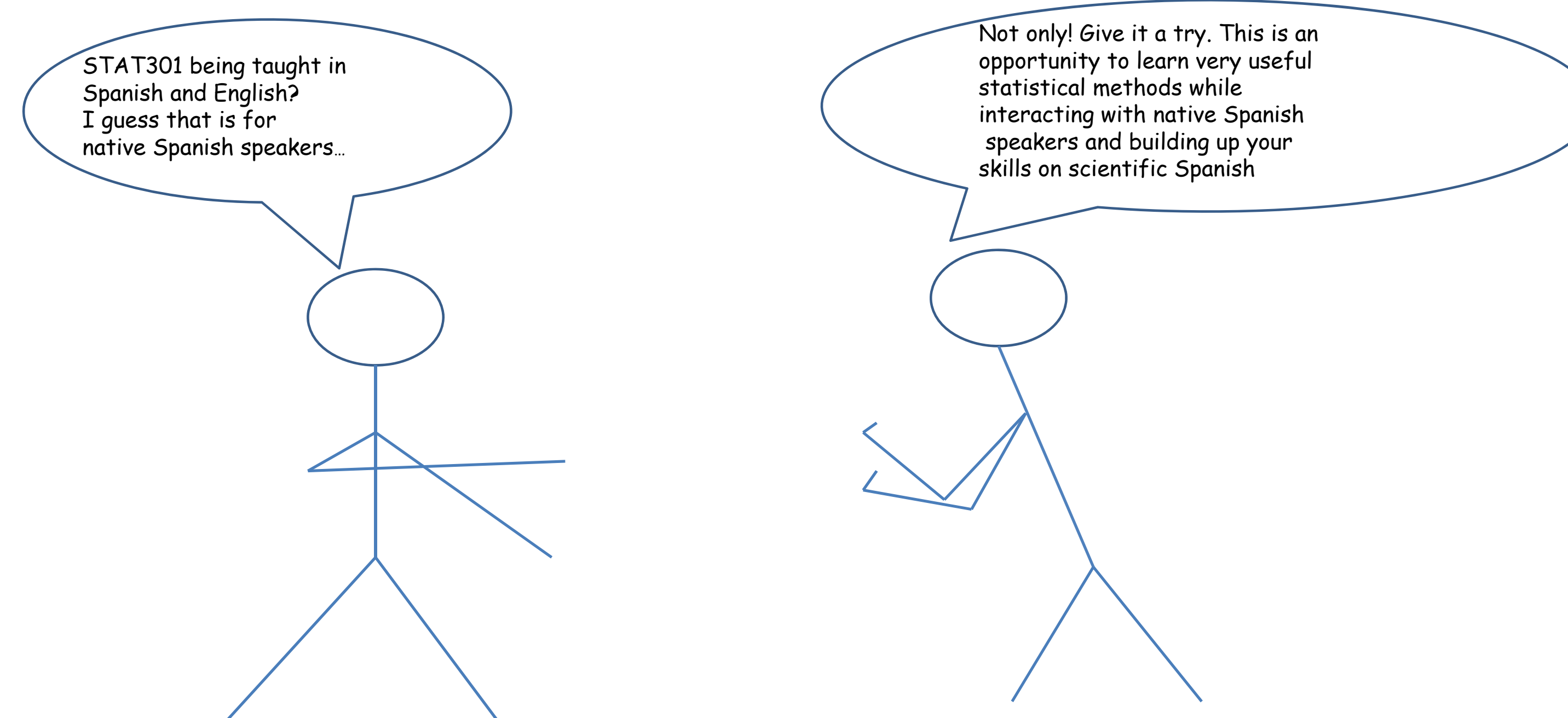**Purdue University, West Lafayette, IN**

GOALS

The 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.

SUPPORT TEAM

IMPACT 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.

STAT301 being taught in Spanish and English? I guess that is for native Spanish speakers…

Not only! Give it a try. This is an opportunity to learn very useful statistical methods while interacting with native Spanish speakers and building up your skills on scientific Spanish

STAT301 Bilingual (English/Spanish)

Do the math:

Learn how to prepare, handle, interpret and discuss data.

+

Get exposed to presentations and discussions using the terminology and vocabulary of scientific Spanish.

You will be ready to perform elementary statistical analyses and discuss them in Spanish! Wouldn't this be a + in your resume?

STAT301 Bilingüe (Inglés/Español)

Calcula por tí mismo:

Aprende a preparar, organizar, interpretar y discutir bases de datos.

+

Atiende presentaciones y forma parte de discusiones en las que se usarán la terminología y el vocabulario del Español científico.

¡Estarás preparado para realizar análisis estadísticos básicos y discutirlos en Español! ¿No te parece que este curso puede añadir muchos puntos + a tu curriculum?

STAT301 Bilingual (English/Spanish)

Let us guide you in this special journey:

By providing online presentations as the one you are viewing.
(1) Slides in both languages
(2) Presented in Spanish by an experienced bilingual instructor

By encouraging bilingual in class discussions to reinforce and apply statistical concepts.

By allowing you to use the language you feel more comfortable with when working on HW, labs, peer review calibration assignments and exams (some of these assignments will only be done in English).

STAT301 Bilingüe (Inglés/Español)

Permítenos ser tus guías en este *viaje* tan especial

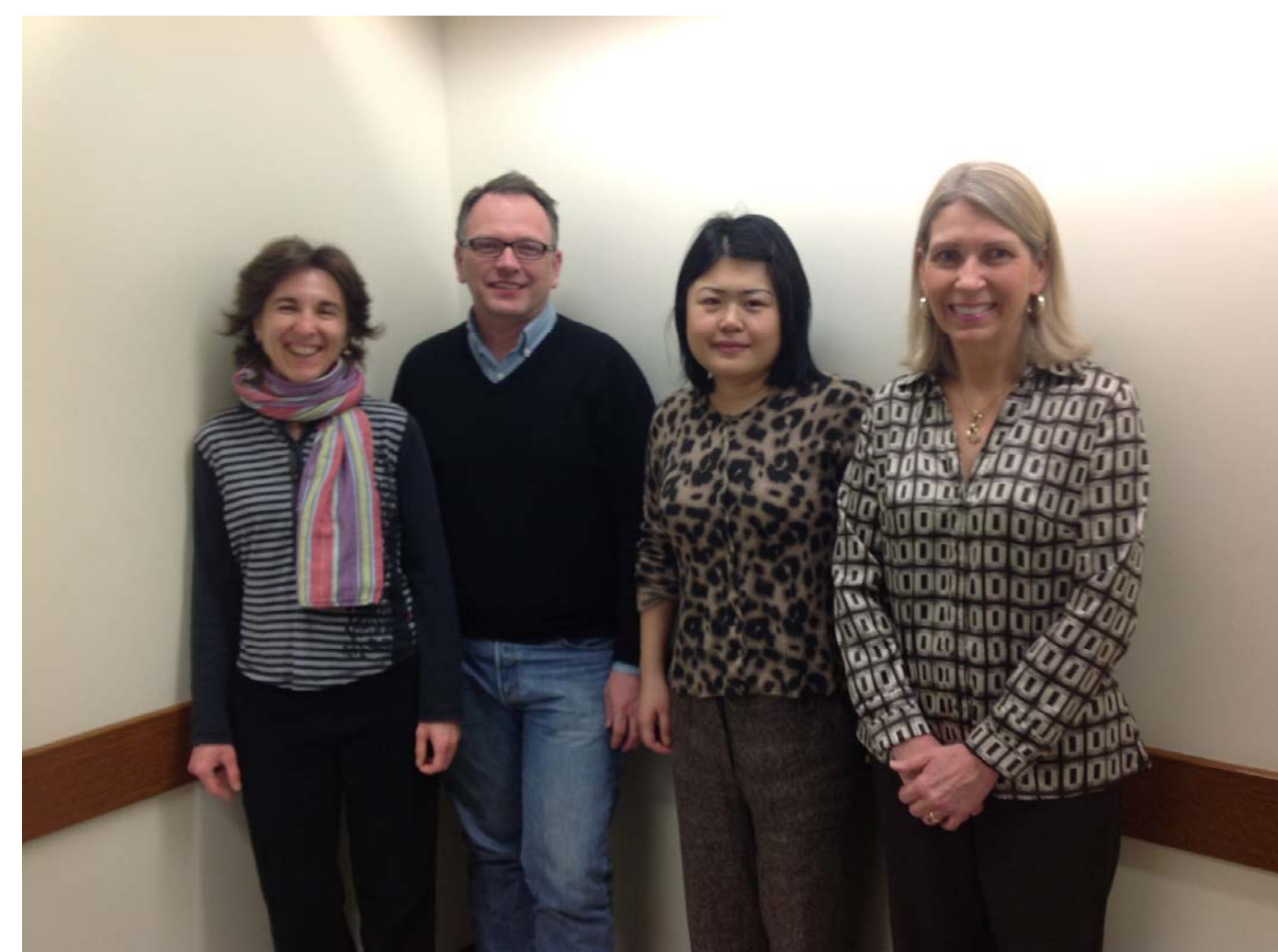Pondremos a tú disposición presentaciones online como la que ahora mismo estás atendiendo.
(1) Con diapositivas en ambos idiomas
(2) Presentadas en español por un experimentado profesor bilingüe

Te animaremos a participar en discusiones bilingües que tendrán lugar en clase, en las que se reforzarán y se aplicarán distintos conceptos estadísticos.

Te permitiremos utilizar el lenguaje con el que tú estés más familiarizado (incluso en algunos casos solo se utilizará el inglés) en lo referente a completar trabajos, laboratorios, críticas escritas y exámenes.

Ready to join us?

¿Te animas a acompañarnos?

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

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COMPARISON OF TRADITIONAL AND REDESIGNED COURSE

TRADITIONAL COURSE DESCRIPTION	TRANSFORMED COURSE DESCRIPTION
Course Goals: • Identify appropriate experimental and sampling designs • Use elementary statistical methods to analyze data • Draw conclusions from these statistical analyses • Use SPSS statistical software • Critically evaluate statistical reports written by other people, including students, researchers, businesses, and reporters • Write statistical reports using correct terminology, analyses, and graphs	Course Goals: • Identify appropriate experimental and sampling designs • Use elementary statistical methods to analyze data • Draw conclusions from these statistical analyses • Use SPSS statistical software • Critically evaluate statistical reports written by other people, including other students, researchers, businesses, and reporters • Write statistical reports using correct terminology, analyses, and graphs.
Course Participants: Over 1000 students/ semester including Undergrads in Agriculture, Health and Human Sciences, Science, Technology, Pharmacy	Course Participants: Expectation is 40 students from same disciplines interested in exposure to Spanish in a scientific context, including native and non-native Spanish speakers
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 Models: 1. 25 sections of 40 students in a traditional lecture setting 2. 2 sections of 40 students enrolled in online version	Course Model: 1 section of a <u>Flipped classroom</u> (additional sections based on demand)

NEW LEARNING OUTCOMES

1. Differentiate between: Population / sample, parameter / statistic, experiment / observation, categorical / quantitative variable, distribution of a variable (population) / sampling distribution. Differentiate among: Elementary statistical methods.
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