

**Statway Presentation**  
**GEAC**  
**October 14, 2010**

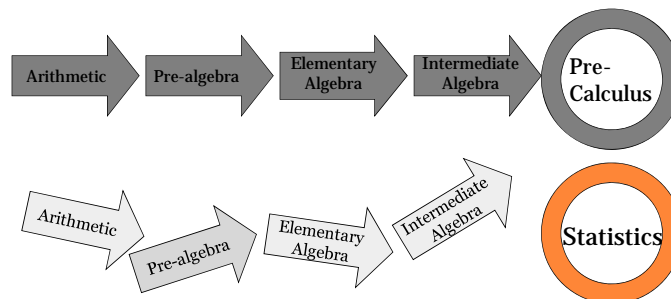
**Roxy Peck**  
**rpeck@calpoly.edu**

**What Is Statway?**

- Integration of topics in developmental mathematics and transfer-level introductory statistics into a 1 year (2 semester) course.
- Overarching Goal—Provide students with a meaningful pathway TO and THROUGH transfer-level introductory statistics.
- Innovative Features of Statway
  - Developmental mathematics topics seamlessly integrated with statistics instruction or provided in a just-in-time manner.
  - Focus of developmental mathematics is on topics needed for success in statistics or for math literacy (e.g. idea of exponential growth and decay).
  - Well articulated statistics and mathematics learning goals are driving the development of both curriculum and assessments.

**Why A Statistics Pathway?**

- Current developmental math pathway is a roadblock for large numbers of students.
- Students placing into developmental mathematics face a long sequence of courses with multiple opportunities for attrition.
- Nationally about 60% of community college students place into developmental mathematics (90% for low income and minority students).
- Only about 30% of students who place into developmental mathematics complete the sequence.
- More students exit the sequence through attrition (not enrolling in the first course or in a subsequent course) than exit through failing a course in which they enrolled.
- Two-thirds of students who fail to complete the sequence have passed all of the courses in which they were enrolled.
- Most students who place into developmental math at the community college are interested in non-STEM fields. These students usually take statistics to meet college level math requirement. Most never take college algebra and pre-calculus—the courses that are aligned with the current developmental math sequences.



### **The Development Of Statway**

- The Carnegie Foundation brought a large group of people to the table to develop learning outcomes (both statistics learning outcomes and mathematics learning outcomes). This group included representation from ASA, MAA, AMS, AMATYC and NCTM. The group included statistics educators from both 2-year and 4-year colleges and developmental mathematics educators at 2-year colleges.
- Review groups from professional organizations provided feedback on the student learning outcomes.

### **Is It Really College Level Statistics?**

- Yes! Detailed student learning outcomes parallel standard college-level introductory statistics course. All of the traditional content is there. Pedagogy may look a bit different for those used to a standard lecture-only format--Statway embodies instructional principles endorsed by the American Statistical Association in its *Guidelines for Assessment and Instruction in Statistics Education College Report*.

### **What Does The Developmental Mathematics Component In Statway Look Like?**

- Focus on mathematics topics necessary for success in statistics and for mathematical literacy.
- Intellectually challenging mathematics experience, designed to develop mathematical ways of thinking as well as statistical thinking.
- Includes most (but not all) topics from intermediate algebra.

### **The Hope...**

- Students placing in developmental mathematics will be more successful, both in mathematics and in statistics.
- Students completing Statway will be better problem-solvers and will be more confident and competent in situations requiring statistical or mathematical reasoning.

### **Can It Work?**

- Strong commitment from many, with recognition that this is a BIG undertaking that will take multiple iterations to get right.
- Small experiments with developmental mathematics students show great promise.

### **Is This The Only Pathway?**

- No! Statway is being proposed as an alternate (not a replacement) pathway through developmental students for students with appropriate degree objectives.
- Recognition of need for bridges between pathways for students whose aspirations may change.