



**COMMITTEE ON ACADEMIC PLANNING AND REVIEW  
ANNUAL PROGRAM REPORT**

College	CoS
Department	Statistics and Biostatistics
Program Unit	
Reporting for Academic Year	2012-2013
Department Chair	Eric Suess
Date Submitted	8/9/2013

**1. SELF-STUDY (about 1 page)**

**A. Five-year Review Planning Goals**

Present your Planning Goals from your last 5-Year Plan, indicating changes and updates from last year's report.

**B. Five-year Review Planning Goals Progress**

(Regarding 3.1) We once again offered the non-parametrics course (STAT 6872) as a "Seminar", tiered with the undergraduate course. We continue to advise using Blackboard messages to majors and have orientation sessions with new and continuing students. This year, with Prof. Watnik serving as Senate Chair, Professors Eudey and Kerr served as graduate advisors for MS Statistics; Professors Fan and Suess served as advisors for MS Biostatistics. Prof. Watnik continues to handle grad checks for all students. The Department was given a new tenure-track hire and will have Prof. Eudey chairing the hiring committee in the upcoming year.

For the undergraduate program, STAT 4910 continues to be "tiered" with 6250 in the Fall Quarter. The forms to change the prerequisites for STAT 4601 are anticipated to be submitted to the College of Science Curriculum Committee in the upcoming Fall Quarter.

More instructors now use the computer labs and VCL than before, including increased usage for STAT 1000 and 3050.

(Regarding 3.2) We continue to have a single 1.0 staff person; Raquel Arcia joined the Department last July. Ann Cambra is a 0.25 retired annuitant, working on special programs for the Department. Our graduate program enrollment dropped slightly between 2011-2 and 2012-3, as we admitted fewer students.

### **C. Program Changes and Needs**

We anticipate implementing some of the curricular changes envisioned in the five-year plan this coming year, including, but not limited to, the establishment of a separate course number for graduate-level non-parametric statistics and changing of the prerequisites to STAT 4601 (undergraduate regression).

## **2. SUMMARY OF ASSESSMENT (about 1 page)**

### **A. Program Student Learning Outcomes**

See the attached Excel file “statistics BS curriculum map.xls”

### **B. Program Student Learning Outcome(s) Assessed**

List of Program Student Learning outcomes assessed

### **C. Summary of Assessment Process**

We assess our graduate program using the MS Comprehensive Exam. This exam is analogous to a “program final” and tests materials from the learning outcomes from our programs. The faculty has long, detailed discussions about the results of the exams.

### **D. Summary of Assessment Results**

Four years ago, the Department began using SAS in its graduate-level regression (6509) course. Beginning in 2011-2, SAS was also used in the earlier analysis of variance (6305) course. Though the instructors for both courses changed in 2012-3, SAS continued to be used as there was consensus that increased use of SAS was beneficial to the students.

Our department regularly assesses introductory courses. In 2011-2, we attempted to integrate the multiple choice assessment into the web-based homework package. However, for some students, the plots did not appear on the screen properly and it was clear that some students were collaborating while taking the test. The introductory course assessment is a legacy from many years ago and the faculty has decided it needs a modernization. Prof. Watnik has been appointed to lead the effort and we anticipate the new instrument will be used in the upcoming academic year.

Biostatistics		CY07-08				CY08-09		
		Degree Level			Total	Degree Level		
		Bccalau ate	Master	Ed Doctor		Bccalau ate	Master	Ed Doctor
Female	Black, non-Hispanic							
	American Indian or Alaska Native							
	Asian		2		2		1	
	Pacific Islander							
	Hispanic							
	White		1		1		3	
	Multiple ethnicity							
	Race/ethnicity unknown							
	Nonresident aliens						2	
Male	Black, non-Hispanic							
	American Indian or Alaska Native							
	Asian							
	Pacific Islander							
	Hispanic							
	White						1	
	Multiple ethnicity							
	Race/ethnicity unknown							1

	<b>Nonresident aliens</b>		1		1			
<b>Total</b>	<b>Black, non-Hispanic</b>							
	<b>American Indian or Alaska Native</b>							
	<b>Asian</b>		2		2		1	
	<b>Pacific Islander</b>							
	<b>Hispanic</b>							
	<b>White</b>		1		1		4	
	<b>Multiple ethnicity</b>							
	<b>Race/ethnicity unknown</b>						1	
	<b>Nonresident aliens</b>		1		1		2	

Total	CY09-10			Total	CY10-11			Total
	Degree Level				Degree Level			
	Bccalaureate	Master	Ed Doctor		Bccalaureate	Master	Ed Doctor	
		1		1				
1		7		7		5		5
3						2		2
		2		2				
2		4		4				
		4		4		1		1
						2		2
1						1		1
1		2		2				

		1		1				
		1		1				
1		11		11		6		6
						2		2
4						3		3
1		4		4				
2		5		5				

CY11-12YTD			
Degree Level			Total
Bccalaureate	Master	Ed Doctor	
	1		1
	3		3
	2		2
	1		1
	3		3



	2		2
	2		2
	1		1
	1		1
	3		3
	5		5

		Total SCU						
		Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2008	Fall 2009
BSTA	Tenured & Tenure Track	92	144	152	148	148	6.13	9.6
	Lecturer	.	.	.	.	.	.	.
	Lower Division	.	.	.	.	.	.	.
	Upper Division	.	.	.	.	.	.	.
	Graduate	92	144	152	148	148	6.13	9.6
	<b>Total</b>	92	144	152	148	148	6.13	9.6

term_ftes			term_ftef					
Fall 2010	Fall 2011	Fall 2012	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2008
10.13	9.87	9.87	0.29	0.29	0.29	0.44	0.44	21.45
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
10.13	9.87	9.87	0.29	0.29	0.29	0.44	0.44	21.45
10.13	9.87	9.87	0.29	0.29	0.29	0.44	0.44	21.45

**term\_sfr**

<b>Fall 2009</b>	<b>Fall 2010</b>	<b>Fall 2011</b>	<b>Fall 2012</b>
33.57	35.43	22.22	22.22
.	.	.	.
.	.	.	.
.	.	.	.
33.57	35.43	22.22	22.22
33.57	35.43	22.22	22.22

Bachelor's Degree in Statistics  
Curriculum Map

I - Introduce,  
R = Reinforce,  
E = Emphasize

	Calculus I	Calculus II	Calculus III/Linear Algebra Stat Sci/Bio/DecSci	IntroStat/Prob	IntroCS	StatInference	SurveySampling	StatInferII	Regression	Probl	StatCS	ProblI	StochProc	MultiAnal	NonParam
	MATH 1304	MATH 1305	MATH 2304/2102 STAT 3010/3031 MGMT3100	STAT1000	CS1020/ 1160	STAT3502	STAT3510	STAT3503	STAT4601	STAT3401	STAT 3900/4950/ 3910/4910	STAT3402	STAT4401	STAT4515	STAT4610
<b>Student Learning Outcome</b>															
<i>Quantitative Prerequisite Competency</i>	I	R	E	I	I										
<i>Quantitative Reasoning Competencies</i>															
Probability concepts and foundations for modelling				I		R				R		R			
Probability theory for statistical inference				I		R						R			R
Apply statistical tools to real-world problems				I		R	R	R	R		E			R	
Perform computations necessary to solve quantitative problems				I		R	R	R	R	R		E	E	R	R
Interpretation of graphical displays				I		R	R		R		E			R	R
Interpretation of descriptive numerical summaries				I		R	R	R	R		E			R	R
<i>Critical Thinking Competencies</i>															
Translate real-world problems in statistical terms				I		R	R	R	R		R			R	R
Identify components of a statistical problem				I		R	R	R	R		R			R	R
Identify probability models										I		R	E		
<i>Communication Competencies</i>															
Summarize data graphically				I		R	R		E		E			R	R
Summarize data numerically				I		R	R	R	E		E			R	R
Coherent written expression statistical concepts in everyday language				I		R	R	R	E		R			R	R
Oral/written presentation of data analysis							R	R	E		R			R	R
Oral/written presentation of statistical inference							R	R	E		R			R	R

Bachelor's Degree in Statistics  
Curriculum Map

*I - Introduce, R = Reinforce, E = Emphasize*

	Calculus I	Calculus II	Calculus III/Linear Algebra Stat SSci/Bio/DecSci	IntroStat/Prob	IntroCS	StatInference	SurveySampling	StatInferII	Regression	Probl	StatCS	ProblI	StochProc	MultiAnal	NonParam
	MATH 1304	MATH 1305	MATH 2304/2102 STAT 3010/3031 MGMT3100	STAT1000	CS1020/ 1160	STAT3502	STAT3510	STAT3503	STAT4601	STAT3401	STAT 3900/4950 3910/4910	STAT3402	STAT4401	STAT4515	STAT4610
<b>Computer Software Competencies</b>															
Basic computer/programming skills					I						R				
Identify appropriate software tools -graphs/summary statistics				I		R	R	R	R		E				
Interpret/decipher software output - graphs/summary statistics				I		R	R	R	R		E				
Identify appropriate software tools -inferential statistics				I		R	R	R	R		E				
Interpret/decipher software output - inferential statistics				I		R	R	R	R		E				
Identify appropriate software tools -statistical models				I		R	R	R	R		E				
Interpret/decipher software output - statistical models				I		R	R	R	R		E				
Software for statistical models				I		R		R	R		E				
Software for graphical displays				I		R		R	R		E				
Software for statistical inference				I		R	R	R	R		E				
<b>Statistical Concepts and technical skills</b>															
Descriptive statistics tool				I		R									
Design of experiments/sampling				I		R	R	R							
Hypothesis testing concepts				I		R	R	R	R		R				
Hypothesis testing tools				I		R		R	R		R				
Estimation & Confidence Interval concepts				I		R		R	R		R				
Estimation & Confidence Interval tools				I		R		R	R		R				
Statistical modelling and error analysis concepts				I		R	R	R	R		R				
Statistical modelling and error analysis tools				I		R	R	R	R		R				