

# ANNUAL FACULTY REVIEW, 2012

Faculty Member's Statement

Doug Bullock

Department of Mathematics

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## TEACHING

### Course Load

Spring 12: Math 170, Calculus I 4 credits 37 enrolled  
Fall 12: Math 170, Calculus I 4 credits 40 enrolled

### Issues from 2011 Evaluations and Proposed Responses

Of the various concerns expressed by students in 2011 there was one item — occasional inappropriate demeanor — identified for action. Proposed actions for 2012 were:

1. Maintain a higher level of awareness of my personal conduct and demeanor when interacting with students.
2. Reduce external stress levels by (1) moving out of the chairmanship of the department, and (2) doing more advance prep work for the fall 2012 semester during the summer of 2012.

### Actions Taken in 2012 and Observed Results

1. Awareness was high in the spring term, since it coincided with the period of self analysis that brought this issue to light. Spring 2012 evaluations contained no negative comments on demeanor or approachability (although only 10/37 students completed an evaluation).

Awareness was lower in the fall, but by this time there was less cause for worry. Fall evaluations were more numerous (32/40) and entirely positive on matters of demeanor and approachability.

2. Transition out of the Chair position was officially complete as of July 1 and effectively complete by the beginning of the fall term. This had the desired effect of lowering stress and likely contributed to a much smoother fall semester.

Advance prep for fall 2012 was not successful, which did create some problems, but nothing approaching the stress levels or student concerns from previous semesters.

### **Recap and Review of 2012 Evaluations**

Full results are attached as appendices. A summary of numerical results, including comparisons to Math 170, All Math, and All COAS benchmarks, is available on the next page. The response rate in spring was very low, so those numbers are less meaningful.

Written comments are mostly positive. Numerical scores are also good. There is nothing in the data to suggest any problem as significant as last year's top issue. There are three items that are appropriate targets for adjustment in future classes.

1. There is room for improvement in course organization and effective use of class time. Some students reported dissatisfaction with the lack of direct instruction during class. This was more pronounced in the spring evaluation than it was in the fall.
2. There are suggestions in the written comments that the final month of material may proceed too quickly or that it is otherwise not successfully taught and learned. This is supported by evidence from assessments on this material.
3. There were several complaints, mostly in the fall term, about typographical errors in course material. There were additional complaints about the functioning of WebAssign<sup>1</sup> and my familiarity with the system.

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<sup>1</sup>WebAssign is a Learning Management System that was introduced, along with a new textbook, in the fall term of 2012.

| <b>Spring 2012</b>    |            | <b>Math 170</b> |             | <b>n = 10</b> |             |
|-----------------------|------------|-----------------|-------------|---------------|-------------|
| <b>Question</b>       | <b>Max</b> | <b>My score</b> | <b>M170</b> | <b>MATH</b>   | <b>COAS</b> |
| Prepared              | 5          | 4.90            | 4.5         | 4.3           | 4.5         |
| Fostered learning     | 5          | 4.90            | 4.3         | 4.2           | 4.4         |
| Clear assessment plan | 5          | 4.70            | 4.2         | 4.1           | 4.3         |
| Clear Objectives      | 5          | 4.60            | 4.3         | 4.2           | 4.4         |
| Class organization    | 4          | 3.40            | 3.6         | 3.4           |             |
| Effective use of time | 4          | 3.50            | 3.5         | 3.4           |             |
| Clear presentation    | 4          | 3.70            | 3.4         | 3.2           |             |
| Student questions     | 4          | 3.90            | 3.5         | 3.4           |             |
| Critical thinking     | 4          | 3.90            | 3.7         | 3.5           |             |
| Grading system        | 4          | 3.90            | 3.6         | 3.4           |             |
| Feedback              | 4          | 3.80            | 3.3         | 3.1           |             |
| Homework returned     | 4          | 3.70            | 3.5         | 3.4           |             |
| Fairness              | 4          | 3.90            | 3.6         | 3.5           |             |
| Classroom environment | 4          | 3.70            | 3.5         | 3.3           |             |
| Assignments           | 4          | 3.70            | 3.5         | 3.3           |             |

| <b>Fall 2012</b>      |            | <b>Math 170</b> |             | <b>n = 32</b> |             |
|-----------------------|------------|-----------------|-------------|---------------|-------------|
| <b>Question</b>       | <b>Max</b> | <b>My score</b> | <b>M170</b> | <b>MATH</b>   | <b>COAS</b> |
| Prepared              | 5          | 4.44            | 4.4         | 4.2           | 4.4         |
| Fostered learning     | 5          | 4.44            | 4.2         | 4.0           | 4.3         |
| Clear assessment plan | 5          | 4.34            | 4.1         | 4.0           | 4.2         |
| Clear Objectives      | 5          | 4.38            | 4.2         | 4.1           | 4.3         |
| Class organization    | 4          | 3.66            | 3.5         | 3.2           |             |
| Effective use of time | 4          | 3.59            | 3.5         | 3.3           |             |
| Clear presentation    | 4          | 3.38            | 3.2         | 3.0           |             |
| Student questions     | 4          | 3.62            | 3.4         | 3.4           |             |
| Critical thinking     | 4          | 3.78            | 3.6         | 3.4           |             |
| Grading system        | 4          | 3.77            | 3.5         | 3.3           |             |
| Feedback              | 4          | 3.69            | 3.1         | 2.8           |             |
| Homework returned     | 4          | 3.66            | 3.5         | 3.2           |             |
| Fairness              | 4          | 3.59            | 3.5         | 3.5           |             |
| Classroom environment | 4          | 3.62            | 3.5         | 3.2           |             |
| Assignments           | 4          | 3.62            | 3.3         | 3.2           |             |

## **Proposed Actions for 2013**

I plan on two significant initiatives, both of which will address all three items of concern from 2012.

1. Invest significant time learning to use WebAssign more effectively.

Despite some negativity about typos and other glitches, WebAssign seems to be an effective LMS. This is supported by many favorable comments from fall 2012 evaluations. It is also supported by assessment data from the fall term.

The fall term (with WebAssign) was more successfully structured than the spring term (without). Although some of this is because I was not burdened with Chair duties, much is due to structure available via the LMS. The fall structure can be improved based on things learned during the initial semester as well as feedback from a Mid-semester Assessment Protocol and from my LA. Typos will be much reduced by my reuse of materials and my familiarity with the system will be much improved after one semester.

2. Participate in the CTL Course Design Institute in May 2013. Implement redesigned course in the fall.

## **RESEARCH/CREATIVE ACTIVITY**

I continue to do a small amount of research, currently supported by a small amount of NSF funding, on strategies to improve success and retention of STEM majors. Two papers listed as in progress last year have appeared in conference proceedings. This work also led to a poster presentation and two workshop presentations.

In my first semester without Chair duties I began collaborating on a paper in my old specialty of Quantum Topology. This paper is listed below as in progress, but there is low probability of completion anytime soon. My primary research focus for the time being will be on STEM education.

## Publications

- J. Callahan, **Doug Bullock**, S.Y. Chyung *Both Sides of the Equation: Learner and Teacher*, 199th ASEE Annual Conference & Expo (2012).
- A. Feldman, J. Callahan, **D. Bullock**, *Using Online Assessment and Practice to Achieve Better Retention and Placement in Precalculus and Calculus*, 199th ASEE Annual Conference & Expo (2012).

## Articles in Preparation

- *The Kauffman Bracket Skein Algebra of a Compact Oriented Surface at a Root of Unity*, with S. Baseilhac and C. Frohman.

## Posters

- J. Callahan, J. Garzolini, **D. Bullock**, J. Guarino, G. Hunt, S. Shadle, *The Idaho Science Talent Expansion Program 2012*, NSF Annual STEP PI Grantee Meeting March 14-16, 2012.

## Conference Presentations

- *Faculty Development for STEM Student Success: Generating a Campus Culture of Best Practice*, workshop co-presented with S. Shadle (lead) and J. Callahan, NSF STEP Grantees Meeting, March 2012.

## PROFESSIONALLY-RELATED SERVICE

- Chair, Math Department. (Term ending July 1.)
- College of Engineering Dean Search Committee.
- Dean of Students Search Committee.
- Chair, Math Department Lecturer Search Committee.