

The teaching portion of this personal statement includes a number of unsubstantiated allegations that are irrelevant and inappropriate for the committee's review, and are not considered in the committee's analysis.

A handwritten signature in black ink that reads "Jonathan Bell". The signature is written in a cursive style with a large, looping "J" and "B".

Jonathan Bell

Subcommittee Chair

Personal Statement 2007–2011

Jacob Kogan

Department of Mathematics and Statistics, UMBC

1 Scholarship

Over the last five years my research has been focusing on clustering, specifically clustering of large and high dimensional data arising in Text Mining application. In addition to journal and conference publications (some co-authored with M. Wiacek, a former UMBC CS undergraduate currently with Google, and Z. Su, my former graduate student who was supported by UMBC SRIS/RAS award, and is currently employed by Capital One) this activity also produced a research monograph published by Cambridge University Press, and an edited volume co-authored with M. Berry of the University of Tennessee and published by Wiley. Over the same time period I also co-organized five Text Mining workshops at the SIAM Conference on Data Mining (the major annual national Data Mining event). My consulting activities resulted in the November 14, 2011 U.S. Provisional Patent Application “GAMER GROUPING AND SELECTION SYSTEMS AND METHODS” (Serial No. 61/559,320). These consulting activities also led to an employment opportunity for Mattie Whitmore, a former Applied Math. graduate student in the Department.

At the same time motivated by a research seminar presentation held at the UMBC CS department I became interested in monitoring threshold functions over distributed data streams. It appears that this research topic was actively investigated by the CS community over the last 20+ years with the help of discrete techniques. As experience shows a switch from one research area to the other requires a serious investment of time and effort affecting the rate of publication. I was able to establish connection between this problem and the Robust Stability research that was so popular in the control community in the nineties. My first research results in this area have been submitted for presentation at the SIAM Conference on Data Mining in 2011 (and published in 2012). Since that time I have succeeded in involving a junior colleague in this research. A joint journal paper has been published, and a book chapter has been accepted for publication.

My past exemplary academic leadership and professional achievements have been acknowledged by scientific communities in this country and overseas as well as by the United States Congress. The academic excellence of my research has been recognized by the J. William Fulbright Foreign Scholarship Board. I am confident similar recognitions will follow.

2 Teaching

During my career at UMBC I have taught a wide variety of graduate and undergraduate courses. Undergraduate education is a basis for production high quality graduates, as well as a gateway to success of the graduate program. The poor preparation of undergraduate students coming to my classes is the reason to focus my current teaching activity mainly on undergraduate education in

the Department.

To gain first hand experience I volunteered to teach Calculus and Analytic Geometry I, MATH151 in the Fall 2012 semester (the course is usually taught by Instructors). This is a large class taught by multiple instructors (in Fall of 2012 four instructors are teaching this course, and each class has about hundred fifty students, and multiple TAs). September 1, 2009 Department Policy¹ describes the role of a coordinator, and September 13, 2012 Chair's memo assigns Mrs. Tighe as a coordinator for MATH151. The following is a list of MATH151 related issues I have detected so far that require attention:

Quiz 0. During the first ten days of the semester students are required to take a mandatory on line quiz (quiz 0). The quiz tests the students on material they should know **before** they start this class, and can not be repeated. I have received many complaints about "disappearing" quiz at the time of testing. About 50% of the students in my class² scored 50% or less. The percentage of students scoring 50% or less reduced to about 40% and 30% after the first and second midterms respectively. It is clear that without serious effort on the part of students lacking the prerequisites their chances to pass the class are from slim to none. Since the Department does not make any use of quiz 0 results the syllabus statement "This quiz will be used by the Mathematics Department" is misleading, and should be removed.

Time spent by students outside of the class and lecture attendance. The MATH151 syllabus distributed by Mrs. Tighe declares: "Time spent outside of class on this course will be between 12 and 15 hours per week. **MINIMUM!**" By my class students' estimate 0% of the students are spending more than 15 hours per week, and only about 10% of the students are spending between 10 to 15 hours per week working on the course related material outside of class. Only about 30% of the students attend lectures.³ This lack of personal responsibility may not lead to satisfactory student performance.

Webassign. Quiz 0 and homeworks are administered on line through Webassign. The course coordinator uploads homework assignments for all instructors, and is the only person authorized and possessing the skills to perform this task. It is clear that this arrangement will result in disaster should the coordinator become unable to perform this function. Indeed, on November 7, 2012 "disappearance" of HW10 was reported by a TA, and the course coordinator, Mrs. Tighe, was immediately notified. On November 8, 2012 the course coordinator was notified again, and Mrs. Tighe responded promising to "look at in right away." Twelve hours later I have received a complaint about a "disappeared homework" from a student. At this point the Chair and the UGPD have been notified. The next day, November 9, 2012, Mrs. Tighe notified me that she is sick, but "will try again." On November 9, 2012 the Chair attempted to intervene,

¹As pointed out by the the Department of Academic Freedom, Tenure, and Governance of the AAUP the policy itself should be a matter of concern for the faculty. The UMBC Faculty Development Center is of the opinion that revisiting the 2009 policies now in 2012 might be a good idea.

²As per BB the total enrollment is 147.

³The data is provided by October 18, 2012 CATALyst report.

but proved to be helpless. The UGPD was nowhere to be found in the time of need. On November 10, 2012 Mrs. Tighe came up with the explanation “Bad Karma this past week.” The problem is still not fixed. My attempts to get additional information about the assignment’s “disappearance” resulted in “Get out of my office” response from Mrs. Tighe. It is clear that to prevent reappearance of this or similar problems additional instructors need to have access and skills necessary to handle Webassign problems when the coordinator becomes incapacitated. Needless to say courteous, professional, and effective communication between colleagues will be helpful.

In AY2010-2011 I have directed a Departmental Honors Thesis of Kathrene Miller, in the Fall 2010 semester I have conducted an Independent Study class with Josh Khuvis, a high school student attending UMBC. In 2010 I graduated a Ph.D. student in the Department.

3 Service

My service contributions at the University level include membership on the University Faculty Grievance Committee (from 2005), and the Department representation in the Faculty Senate (from 2012). At the Departmental level I help to maintain the Department web site, and serve on the Undergraduate Committee. I am currently on the ad-hoc department committee charged with looking into the faculty workload issue. From 2007 through 2011 I served on two Doctoral Examination Committees (chairing one of them). I have been an academic adviser for mathematics majors. I participate in convocations and new students welcome events. I regularly review papers and grant proposals.

Through my service on the University Faculty Grievance Committee I have become interested in Student Course Evaluation Questionnaire (SCEQ) forms that are incorporated in the process by which UMBC seeks to improve teaching and learning. It has been observed that:

1. The quality of SCEQ scores depends on students’ competence to evaluate an instructor and may vary, but a student’s evaluation is independent, for example, of the student’s GPA. In other terms, ratings assigned by “F” students are as important for instructor’s teaching evaluation as those assigned by “A” students.
2. Along with individual instructor statistics per class/question, SCEQ provides additional statistical indicators, among them “Dept Mean.” The dept means are actually mean averages of the instructor’s means. The average scores for a class with one response are weighted equally to a class with numerous responses. Hence the input of large student groups (students in large classes) to the computation of Department Mean is identical to that of small student groups (students in small classes).

These two observations led to a research proposal that has been submitted jointly with German Westfal, MLLI to the AY13-14 Hrabowski Fund for Academic Innovation Competition.