Date: 31 July, 2015
To: Matt Platz, VCAA
From: Mitchell Anderson
Re: Spring 2015 Sabbatical Report

Name: Mitchell Anderson
Rank: Associate Professor (during the time of the sabbatical)
Unit: CAS/NS/Mathematics Department
Duration of Sabbatical: Spring Semester, 2015

Objectives
The objectives of my sabbatical, as outlined in my application form were to:

1. Complete a compilation of three papers on Interoperability through the perspective of three historical events, as well as a fourth more contemporary event. These events included The Battle of Gettysburg, The Building of the Transcontinental Railroad, and the National Highway System, and the 2003 Northeast Power Blackout.

2. Write a paper on the process of developing Common Core mathematics curriculum.

Results
Objective one was completed, the result being a 38 page document, which views the concept of interoperability through historical events. In lieu of objective two I decided instead to write a paper on Quality-of-Service Based Resource Management in Large Scale Distributed Systems. That paper is also complete. Both papers are available upon request. I also completed significant research in a specific large scale system, the results of which are currently being compiled.

Summary of Contributions to my personal development, and to the university
It is always worthwhile, healthy, and helpful to one’s personal growth to set aside the minuitia of university governance and other service activities, and devote your full effort to intellectual endeavors. From this perspective the sabbatical was very successful, and I feel as rejuvenated as one can be when anticipating the return to the classroom and continued service. The subject I have been researching for years is Interoperability. Attempting to gain interoperability within large scale systems, such as power systems, health care, transportation, etc., is one of the most challenging problems facing society today. The lack of interoperability is the primary reason we waste hundreds of billions of taxpayers’ dollars each year. The 2008 recession can itself be traced to a lack of interoperability within the Banking and Finance sector, and its influence across other sectors. Yet, the concept of interoperability is misunderstood by most. The first paper I wrote attempts to address this misunderstanding by introducing the reader to the concept within a relatively slow-motion setting, allowing the reader to slowly grasp the nuances of the concept, while the second paper utilizes interoperability to develop a model for building better information systems. The first paper is accessible to the average reader, while the second is more technical. Such results, while intangible in terms of direct impact on the university, certainly assist society in moving forward towards addressing this grand challenge.