

ACADEMIC SENATE AGENDA
February 3, 2014

1. CALL TO ORDER: 3:00 p.m. in 1750 HSEB
2. MINUTES: January 6, 2014 1
3. REQUEST FOR NEW BUSINESS:
4. CONSENT CALENDAR
 - a. Appendix I: Resignations, Administrative and Faculty Appointments
 - b. Appendix II: Career-line, Adjunct and Visiting Faculty Appointments
 - c. Appendix III: Emeritus Appointments
5. EXECUTIVE COMMITTEE REPORT
6. REPORT FROM ADMINISTRATION
7. REPORT FROM ASUU
8. NOTICE OF INTENT
9. DEBATE CALENDAR
 - a. Proposal for Certificate in Big Data 5
10. INFORMATION CALENDAR
 - a. SAFE Campaign Update
11. NEW BUSINESS
 - a. January 2014 President's Report 17
 - b. Board Docs Training
12. ADJOURNMENT

ACADEMIC SENATE MINUTES

January 6, 2014

Call to Order

The regular meeting of the Academic Senate, held on January 6, 2014, was called to order at 3:03 p.m. by Allyson Mower, Senate President. The meeting was held in room 1750 Health Sciences Education Building.

Present: David Ailion, McKay Allred, Orly Alter, Chrisoula Andreou, A.K. Balaji, Tim Benvegnu, Lyda Bigelow, Kelly Bricker, Nilufer Cagatay, Kate Canas, Tully Cathey, Marjorie Chan, Thomas Cheatham, Marcus Chen, Mary Ann Christison, John Conboy, Robin Craig, David Dinter, Randy Dryer, Florence Fernandez, Francis Friedrich, Caren Frost, Sabine Fuhrmann, Disa Gambera, Jennifer Garvin, William Gershan, Stephen Goldsmith, Franz Goller, Joan Gregory, Gary Grikscheit, Thad Hall, Glen Hanson, Michael Harris, Mary Elizabeth Hartnett, Leanne Hawken, Tom Henderson, David Hill, Robert Hitchcock, Michelle Hofmann, Lynn Hollister, Jared Hurdman, Thunder Jalili, Anne Jamison, Peter Jensen, Xan Johnson, William Johnson, Bradley Katz, Evert Lawton, Uri Loewenstein, John Longino, Gary Lowder, William Lowrance, Ross Marabella, Erminia Martinez, Jannah Mather, Sandra McIntyre, Duncan Metcalfe, Meredith Metzger, Jill Moriearty, Alfred Mowdood, Patricia Murphy, Ingrid Nygaard, Sam Ortiz, Patrick Panos, Janiece Pompa, Christina Porucznik, M. Pollie Price, Bruce Quaglia, Mariana Ramiro, Reva Rauk, Lorie Richards, Steve Roens, Gerald Root, Jody Rosenblatt, Clough Shelton, Debra Simmons, Gregory Smoak, John Paul Soares, David Stevenson, Li Wang, Rachel Wootton, Joanne Yaffe, Jingyi Zhu

Absent: Peter Alfeld, Keith Bartholomew, Michael Blomgren, William Crowley, Sierra Debenham, Kevin DeLuca, Alison Denyer, Justin Diggie, Maria Dobozy, Megan Dolle, Xiao Fang, Ole Fischer, Michael Gardner, Luke Garrott, Jordan Gerton, Michael Hawkins, Rachel Hayes-Harb, Amy Johnas, Christian Johnson, Lori Kowaleski-Jones, Raina Mahanes, Theresa Martinez, Ashley McMullin, Heather Melton, Dragan Milicic, A. Chris Nelson, Wanda Pillow, Marlene Plumlee, Stephanie Richardson, Gary Rose, Paul Shami, Taylor Thurman

Excused: Vivian Lee

Ex-officio: Steve Alder, Carrie Byington, Robert Flores, Robert Fujinami, Harriet Hopf, Paul Mogren, Allyson Mower, David Pershing, Ruth Watkins, Amy Wildermuth

Excused with Proxy: Balamurali Ambati for Bradley Katz, Lynda Oderda for Brandon Jennings, Tom Richmond for Joel Miller, Martha Glenn for Paul Shami, Therèse de Raedt for Matthew Potolsky

Others: Maureen Condic

Approval of Minutes

The minutes of the Academic Senate meeting on December 2, 2013, received no objections.

Request for New Business

No new business

Consent Calendar

The resignations retirements, and faculty and administrator appointments dated January 6, 2014, received no objections and will be forward to the Board of Trustees.

Executive Committee Report

Steve Alder, Academic Senate President-elect, provided a summary of the Executive Committee meeting held December 16, 2013.

Report from Administration

David Pershing welcomed the Career-line Senators to the Academic Senate. The construction on the Beverley Taylor Sorenson Arts and Education Complex is scheduled to be completed this month. This will be the new home of the College of Education and the Tanner Dance Program. Construction continues on the S. J. Quinney College of Law building and the Oral Health Sciences Building. The Infrastructure upgrade construction continues and is currently working along 1900 east to the School of Medicine.

The Legislative session begins January 27th. The number one priority for the U this year is faculty and staff compensation. Other priorities include mission-based funding, infrastructure, Huntsman Cancer Institute Phase IV, and funding for the Crocker Science Center.

A new student financial aid campaign will begin this spring and will focus on four types of students; students that are just below the threshold to receive honor scholarships, students within 30 hours of graduation, poverty level students and transfer students. The U is continuing to look at scholarship opportunities for graduate students.

Martin Luther King Jr. celebration will take place January 16 - 23. The week events will include Sybrina Fulton (Mother of Trayvon Martin), March for Youth, Cultural Performance by Joaquin Zihuatanejo, and keynote address by Marc Lamont Hill. All events are free but tickets are required for the keynote address.

Report from ASUU

Sam Ortiz, ASUU President, gave an update to the Academic Senate. Geek week was held December 8- December 20th in conjunction with Marriott Library, Union Programming Council, Peak, USA Today, and The New York Times. It was another great event to help support our students. The first meeting of the PAC 12 Student Leaders Summit will be held at the University of Utah January 23 – 25. As the first school to hold this type of event within the Pac-12, the summit will allow students to share ideas, initiatives and challenges to improve collaboration and leadership. The Conference on Social Awareness will be held on January 25th. This year's conference will feature keynote speaker M. Teresa Walsh.

Notice of Intent

No Items on Notice of Intent

Debate Calendar

The proposal for Revised Policy 7-013: Copyright Policy: Copying of Copyrighted Works was presented by Julio Facelli of the Library Policy Advisory Committee and Michelle Ballantyne of the General Counsel's office. Reasons for updating this policy included: updated to reflect current practices in the digital information age, incorporate fair use and fair use documentation, broadens application to academic use and not just classroom use, requires fair use documentation, removes specific references to amount of copies, and removes references to spontaneity. Revisions to the policy have been reviewed by General Counsel, presented to Library Policy Advisory Committee, Academic Policy Advisory Committee, and the Institutional Policy Committee (IPC). All committees voted in favor of the proposed changes. IPC had recommended that the University Librarian act as Policy Owner and the President act as Policy Officer, however it was subsequently determined that the Senior Vice President will be assigned as the Policy Officer. *The motion to approve and forward to the Board of Trustees was made by Joanne Yaffe and seconded by Xan Johnson. Motion passed with one abstention.*

The Proposal for Certificate in Big Data will be moved to the February Academic Senate Agenda.

Senate Policy 6-002 second phase revisions were presented by Robert Fujinami and Robert Flores on behalf of the Executive Committee. These policy revisions are part of the second phase of the project, the first which was approved in Spring 2013. This second phase is primarily to integrate Career-line faculty into membership of the Senate's standing committees and to update and clarify other parts of 6-002 regarding structure and process of the Senate. All Senate standing committees are renamed to include "Senate" within the names. One of the troubling aspects of the existing 6-002 is the massive length due to it currently housing descriptions of procedures for Academic Freedom and Faculty Rights Committee and the Consolidated Hearing Committee. The proposal includes two new Policies to house contents being moved out of 6-002, with lengthy descriptions of detailed procedures for dispute investigations and hearings, which are moved but not significantly changed (6-010 Academic Freedom and Faculty Rights, 6-011 Consolidated Hearing Committee). These changes will take effect May 2014. *The motion to approve Revisions of Policies 6-002, 6-305, and new Policies 6-010, 6-011 and forward to the Board of Trustees was made by Thad Hall and seconded by Joanne Yaffe. Motion passed unanimously.*

Information Calendar

The SAFE Campaign Update will be moved to the February Academic Senate Meeting.

The following items were accepted by the Academic Senate and will be forward to the Board of Trustees:

- Graduate Council Review Department of Operations and Information Systems
- Graduate Council Review Department Finance
- Graduate Council Review Department of Parks, Recreation and Tourism
- John R. Park Teaching Fellowship for 2013

Adjournment

Meeting adjourned at 3:42 p.m. following a motion from Sam Ortiz and a second from Rachel Wootton.

Respectfully submitted,
Shawnee Worsley

Council Approval

Note: This form is intended to track the progress of a proposal (whether from Academic Affairs or Health Sciences) through the Undergraduate and Graduate Councils.

Proposal: Graduate Certificate in Big Data

This proposal needs to go through:

Undergraduate Council	<input type="checkbox"/>
Graduate Council	<input checked="" type="checkbox"/>
Both Approvals	<input type="checkbox"/>
Grad Approval/Undergrad Notification	<input type="checkbox"/>

This proposal has been approved by:

Chair of Undergraduate Council _____ Date: _____

Chair of Graduate Council  Date: 12/4/13

Once the appropriate signature(s) have been obtained, please forward this completed form to the Office of the Senior Vice President for Academic Affairs. (NOTE: The SVP-AA is the Chief Academic Officer for the University of Utah and reports to the Board of Regents in this capacity. When necessary, the CAO will get a signature from the SVP-HSC.)

Chief Academic Officer  Date: 12-9-13

Once the Chief Academic Officer's signature has been obtained, this approval document will be forwarded to the **Office of the Academic Senate**.

Request for Certificate in Big Data

Institution Submitting Request: *School of Computing*
Proposed Title: *Certificate in Big Data*
Currently Approved Title: *N/A*
School or Division or Location: *School of Computing*
Department(s) or Area(s) Location: *Computer Science*
Recommended Classification of Instructional Programs (CIP) Code¹ (for new programs): *11.0802*
Current Classification of Instructional Programs (CIP) Code (for existing programs):
Proposed Beginning Date (for new programs): *08/23/2014*
Institutional Board of Trustees' Approval Date: *MM/DD/YEAR*

Proposal Type (check all that apply):

Regents' General Consent Calendar Items	
<i>R401-5 OCHE Review and Recommendation; Approval on General Consent Calendar</i>	
SECTION NO.	ITEM
5.1.1	<input type="checkbox"/> Minor*
5.1.2	<input type="checkbox"/> Emphasis*
5.2.1	<input type="checkbox"/> (CER P) Certificate of Proficiency*
5.2.3	<input checked="" type="checkbox"/> (GCR) Graduate Certificate*
5.4.1	<input type="checkbox"/> New Administrative Unit
	<input type="checkbox"/> Administrative Unit Transfer
	<input type="checkbox"/> Administrative Unit Restructure
	<input type="checkbox"/> Administrative Unit Consolidation
5.4.2	<input type="checkbox"/> Conditional Three-Year Approval for New Centers, Institutes, or Bureaus
5.4.3	<input type="checkbox"/> New Center
	<input type="checkbox"/> New Institute
	<input type="checkbox"/> New Bureau
5.5.1	<input type="checkbox"/> Out-of-Service Area Delivery of Programs
5.5.2	<input type="checkbox"/> Program Transfer
	<input type="checkbox"/> Program Restructure
	<input type="checkbox"/> Program Consolidation
5.5.3	<input type="checkbox"/> Name Change of Existing Programs
5.5.4	<input type="checkbox"/> Program Discontinuation
	<input type="checkbox"/> Program Suspension
5.5.5	<input type="checkbox"/> Reinstatement of Previously Suspended Program
	<input type="checkbox"/> Reinstatement of Previously Suspended Administrative Unit

**Requires "Section V: Program Curriculum" of Abbreviated Template*

Chief Academic Officer (or Designee) Signature:

I certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

Ruth Watkins
Signature

Date: *11/11/2013*

Printed Name: *Ruth Watkins*

¹ CIP codes must be recommended by the submitting institution. For CIP code classifications: <http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55>.

Program Request - Abbreviated Template
College of Engineering, School of Computing
Certificate in Big Data
11/25/2013

Section I: Request

The School of Computing in the College of Engineering is seeking to provide a graduate certificate in big data for several types of students outside the school. The proposed certificate would consist of 15 credits made up for 5 classes: Data Mining, Machine Learning, Database Systems, Visualization, and Advanced Algorithms, all offered in the School of Computing. The program would serve both graduate students from related areas such as Biomedical Informatics, Electrical and Computing Engineering, and Math, as well as professional computer scientists working in local industry who hope to expand their skills to deal with the many related emerging big data analysis and management problems.

This proposal was formed as a joint effort from a committee of 12 faculty in the School of Computing: Mary Hall, Charles Hansen, Chris R. Johnson, Mike Kirby, Feifei Li, Miriah Meyer, Valerio Pascucci, Jeff Phillips (chair), Paul Rosen, Jur Van Den Berg, Kobus Van Der Merve, and Suresh Venkatasubramanian.

The proposed certificate was discussed in a School of Computing faculty meeting on October 25, 2013, and was endorsed by the faculty.

Section II: Need

There is a quickly growing need for skills in Big Data. The McKinsey report [Big Data: The Next Frontier for Innovation, Competition, and Productivity](#), estimates that the United States will face a shortage of 140 – 190 thousand deep analytical talent positions and 1.5 million data savvy manager positions in the coming years. While many existing degrees aim to specifically train the data savvy managers, including the MSIS degree in the Utah Business School, this program is more focused on the more technical skills required for the deep analytical talent positions. Companies will highly value individuals with these technical skills since, for instance, data in the health care sector alone is estimated to be worth more than \$300 billion every year. To harness this data, skilled big data scientists are essential to *understand*, *process*, and *present* this data. These three interlocking skills require more than just how to run a piece of rapidly changing analytical software, but also how to adapt to new techniques, to know which options to attempt based on the data properties, how to scale these approaches to every growing data sets in size and complexity.

These needs are not just a national trend; they are especially relevant in Utah. We have been approached by various technology companies with strong local ties, such as Adobe, EMC, Doma, Goldman Sachs, Zions Bank, NSA, as well as many smaller start-up operations with foresight to request these skills in future employees.

Conveniently, the School of Computing offers graduate level classes in just these areas, taught by experts in these areas. Moreover, the relevant faculty of these courses are cognizant of the role of each in the big data phenomenon, as demonstrated by a technical white paper written in the last year: [Rethinking Abstractions for Big Data: Why, Where, How, and What?](#) (www.arXiv.org/abs/1306.3295).

By formalizing this certificate, it will guide students towards the particular skills and methodologies to succeed not just in the next few years, but for the next decades. It will allow the University of Utah to put a uniform and consistent stamp of accomplishment on a focused set of five classes, that will help employers identify these quality future employees.

Related Programs

At the University of Utah, the two most related programs are larger and at the Masters level. The School of Computing offers a MS in Computing with a specialization track in Data Management & Analysis (soon to be renamed, and henceforth referred to as the Data track) and the David Eccles School of Business offers an MS in Information Science (MSIS). Both degrees require twice the coursework as the proposed certificate, which may be more than desired for students outside of those particular Schools. In particular, the proposed certificate will be managed by the faculty chairperson of the School of Computing Data track, and the certificate courses will strongly overlap with required courses within that track. In contrast to the MSIS, which is intended to cater to students who do not necessarily have a strong CS or programming background, the Big Data Certificate is designed to build on existing CS and programming skills. The MSIS program also offers a certificate associated with that program; it requires 18 elective credits within the Operations and Information Systems department at the DESB.

There already exist several intermountain programs in the related areas of Big Data, Data Science, and Business Analytics. The main distinguishing factor in our proposed program is that our classes are intended to build on existing computer science and programming skills, and teach the fundamentals of advanced computing and analytical techniques for big data.

- Business Intelligence @ University of Denver. Masters Degree from the Business School.
<http://daniels.du.edu/specialized-masters-degrees/business-intelligence/>
- Business Analytics @ Arizona State University. Masters Degree from the Business School.
<http://wpcarey.asu.edu/master-business-analytics/>
- Data Science Certificate @ University of Washington. 3 course tools-based certificate. Taught by adjunct professors from local industry.
<http://www.pce.uw.edu/certificates/data-science.html>

On a national level there are a handful of programs that may be comparable to our proposed one, and that number is quickly growing. Many are like the tool-based programs mentioned above, and are often taught out of business schools or by adjunct professors. However, there are a few programs aiming to train the deep analytical talent positions. For instance, in New York City there are two programs catering to professionals living in the city:

- Data Science @ NYU. Masters Degree.
<http://cde.nyu.edu/academics/ms-in-data-science/>
- Data Science and Engineering @ Columbia. Interdisciplinary Masters Degree.
<http://idse.columbia.edu/foundations-data-science>

And there is another related nationally prominent program in North Carolina. It is an intensive 1 year program that dates back to 2007.

- Advanced Analytics @ NC State. Masters of Science in Analytics.
<http://analytics.ncsu.edu>

We believe that the proposed program has the potential to not only be a compliment to these programs in the West, but also to compete with them nationally given the expertise of the faculty involved.

This certificate program will make gaining a post-secondary degree or certificate more accessible for many Utahns who are well qualified to make this next step. It targets students who are have a bachelor's degree and may serve as a feeder program into a more comprehensive MS degree in Computing under the related track. Altogether, this will have a positive and tangible effect on the Governor's call that 66% of Utahns will have a post secondary degree or certificate by 2020.

Section III: Institutional Impact

No substantial institutional changes are needed. All classes already exist, and a similar track (which results in a MS or PhD in Computing) is offered in Data. This certificate program may serve as a feeder program into the related MS program. The Big Data Certificate and its students will be administered by the Data track faculty.

We are also planning several features designed for making the classes more convenient for professional students (online video, internet-video office hours, scheduling considerations). These will be deployed in such a schedule so that more distance education features are offered proportional to the increased enrollment, and so that they will not incur any additional net costs. Early experimentation with these features has yielded extremely positive feedback. One such feature for professional students would be to offer the classes in consecutive blocks in the late afternoons and evenings, and the relevant faculty slated to teach the required classes have agreed to reschedule their classes if they are not already at these times.

In fact, we are hopeful that if this certificate program and the related masters degree are successful, then many of the distance education techniques can be easily extended to other programs and tracks offered by the School of Computing and other departments at the university.

Section IV: Finances

We will require no outside financing to offer this certificate. We hope it will attract a significant number of new students to existing classes already taught on a regular basis.

We hope to offer videotaped lectures to the enrolled students. These students may be regular matriculated students, professional masters students, in addition to the students primarily in the classes for the certificate. Utah Video Services Coordinators offer to videotape lectures for roughly \$4000 per 3-credit class. This cost can be offset by a few additional students per class. Alternatively, we have been experimenting with TAs or a rotating set of students recording videos for class, and then uploading them with minimal processing to a free hosting site (such as a private channel on YouTube). This incurs no additional cost, using existing off-the-shelf camera equipment. It does require some time, but is not a major burden on a TA, especially since making videos of lectures available often reduces the questions asked of the TA from students who can watch a missed lecture, or re-watch the relevant part of a lecture.

We hope that experimentation with video taping of lectures can serve as a model for many more classes in the future. With the gained experience, the cost of such expenditures should only decrease as the program grows.

Section V: Program Curriculum

Course Prefix and Number	Title	Credit Hours
Required Courses	CS 6140: Data Mining	3
	CS 6350: Machine Learning	3
	CS 6630: Visualization	3
	CS 6150: Advanced Algorithms	3
Sub-Total		12
Elective Courses	CS 6530: Database Systems	3
	CS 5530: Database Systems	3
Sub-Total		3
Track/Options (if applicable)		
Sub-Total		0
Total Number of Credits		15

Program Schedule

All certificate classes are offered every year in either the Spring or Fall semester. In the past CS 6350: Machine Learning was offered in the Fall semester, but starting with the 2014-2015 academic year, it will be offered in the Spring semester to accommodate a more balanced schedule for, among other things, this certificate. That is, starting from Fall 2014, courses CS 6530, CS 6630, and CS 6150 are offered every Fall, and course CS 6140, CS 6350, and CS 5530 are offered every Spring.

A typical schedule for a student aiming to complete the certificate in a single year would look as follows:

Fall (Semester 1):

CS 6630: Visualization – 3 credits

CS 6530: Database Systems – 3 credits

CS 6150: Advanced Algorithms – 3 credits

Spring (Semester 2):

CS 6140: Data Mining – 3 credits

CS 6350: Machine Learning - 3 credits

Alternatively a 4 semester variant, might be popular among very busy professional students or a student completing a 2 year degree in another department. A suggested more spread out schedule is as follows:

Fall (Semester 1):

CS 6530: Database Systems – 3 credits

Spring (Semester 2):

CS 6360: Data Mining – 3 credits

Fall (Semester 3):

CS 6630: Visualization – 3 credits

CS 6150: Advanced Algorithms – 3 credits

Spring (Semester 4):

CS 6350: Machine Learning - 3 credits

Big Data raises many ethical issues, and we feel it is important that the students obtaining this certificate are educated in these issues. The Data Mining, Database Systems, and Visualization courses all include lectures which discuss ethical issues associated with data management and analysis. We will ensure that these topics remain a point of emphasis in the required classes.

School of Computing

50 S. Central Campus Dr. RM 3190 MEB, Salt Lake City, Utah 84112-9205 801.581.8224 Fax 801.581.5843
UNIVERSITY
OF UTAH

2 November, 2013

To Whom It May Concern:

As Director of the School of Computing, I enthusiastically endorse the proposed Certificate in Big Data. As the world becomes more automated, nearly everybody is drowning in data. Understanding how to manage the computational infrastructure to store, process, and analyze big data has become a national priority. Many other higher education institutions are starting programs in this area as well. We are fortunate to have several faculty members who have been working in relevant areas so the addition of this certificate doesn't require any significant change in what we're doing now. In short, the proposed certificate will consist of five classes already offered in the SoC, and will be administered as an extension of an existing track in our Computing degree. Thus there is little cost to offering and administering this certificate.

Given the broad based academic and industry focus on issues relating to big data, we hope that this certificate will help attract many additional students at the graduate level. Some may be from other graduate programs within the College of Engineering or elsewhere in the university, but more importantly, we hope to attract some professional students from local industry. Students from both categories are already taking some of the required classes, this certificate will allow us to direct and reward them for taking what we feel are the most important classes in the area of big data.

The School of Computing held a faculty meeting on October 25, 2013 and discussed this proposed certificate. A vote of confidence showed unanimous support for pursuing this Certificate in Big Data.

For all of these reasons, as Director, I am pleased to give my strongest endorsement of the proposed Certificate in Big Data.

Sincerely,



Al Davis
Professor & Director



Richard B. Brown

Dean of Engineering
1692 Warnock Engineering Building
72 S. Central Campus Drive
Salt Lake City, Utah 84112
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brown@utah.edu
<http://www.coe.utah.edu/~brown>

November 5, 2013

Al Davis
Professor and Director
School of Computing
University of Utah
Salt Lake City, Utah

Dear Prof. Davis,

I am pleased to write a letter of support for the masters certificate in Big Data Engineering as proposed by Jeff Phillips and 11 other faculty from the School of Computing. This is a new area of strength within the College of Engineering, as seen by several recent faculty hires in this area and the creation of the Center for Extreme Data Management and Visualization (CEDMAV). It is also an area that has received a lot of interest from students. Within the School of Computing the number of students specializing in this area has been quickly increasing.

Masters students in the School of Computing can focus in this area as a track in the computing degree. But other students who may want to gain a background in Big Data have had no way to have that expertise recognized. The graduate certificate in Big Data will meet that need. The area has already been attracting a diverse set of students from outside the School of Computing. The core classes draw students from departments such as Civil Engineering, Biomedical Informatics, and Mathematics. Several students from local industry have also been taking these classes, often through continuing education, and I anticipate that this cohort will grow with a certificate being available.

The certificate, as designed and administered by Jeff and the other School of Computing faculty, will provide guidance on which classes are most important for this emerging topic. It will put a stamp of achievement on a transcript for those students. Furthermore, we believe that formalizing this certificate will attract new students, and encourage some of these students to continue on to obtain a masters degree in related areas.

In summary, Big Data is a priority technical area for the College of Engineering, and a certificate in this area fits well with the University's academic goals. We have considerable strength in this important emerging area, and establishing this graduate certificate in Big Data will help the U to better serve the needs of our students and local industry while building the reputation of our School of Computing.

Sincerely,

Richard B. Brown
Dean of Engineering

November 11, 2013

Jeff Phillips
School of Computing
University of Utah
50 South Central Campus Drive, 3190
Salt Lake City, UT 84112

Dr. Phillips:

It is our understanding that the School of Computing is proposing a graduate certificate in big data. I am writing this letter in response to your request for a letter of support from the David Eccles School of Business for your proposal.

As you noted in your proposal, the need for big data professionals has increased dramatically in recent years. Social media, cloud computing, and mobile technologies are contributing to demand for data savvy graduates from both the information systems and computing science departments at the University of Utah.

The David Eccles School of Business currently offers a Master of Science in Information Systems (MSIS) degree with a specialization in business intelligence and analytics and a graduate certificate in information systems. Included in both of these programs, are courses in business intelligence and analytics, data mining, database theory and design, data visualization, networking and servers, cloud computing, system analysis and design, etc. We note that your proposal includes courses that may appear to overlap with some of these areas (e.g. data mining, database technology, and visualization).

While there are some similarities between courses in the information systems and computer science departments, our courses have generally included different content. Our departments have also traditionally served different markets. Although the business school offers coursework in computer programming, our graduates do not receive the same level of training in programming or pursue the same positions as computer science graduates. Our MSIS and graduate certificate programs are intended to prepare students for business careers where an understanding of technology is of financial and strategic value to a firm. On the other hand, computing science graduates typically pursue careers in computer engineering or software development. Companies such as Adobe, EMC, Zions Bank, Goldman Sachs, and others recognize the differences between our programs and how we uniquely approach the big data domain. This has been readily apparent in discussions with technology leaders from these companies who serve on the MSIS advisory board.

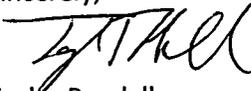
In your graduate certificate proposal, you include a brief review of big data, data science, and business analytics programs in the intermountain west. We note that your review includes several business schools. You propose to differentiate your certificate program from a business-oriented program by focusing on computer science and programming skills. Our support for your proposal comes with the explicit understanding that the proposed certificate will not compete directly with programs or courses in the David Eccles School of Business or restrict our ability to continue to offer programs or courses in the area of big data. For example, we currently offer several courses in the area of business intelligence

and analytics. We view this as a uniquely business focused area and would expect students interested in such training to come to the business school. We recognize that courses such as data mining, can be taught from a business school or computer science perspective to meet the needs of different student audiences. For these classes, our expectation is that each school will continue to focus class content and presentation in a manner consistent with their core strengths. Further, our support of this certificate should not preclude the addition of a business focused big data certificate or degree program similar to that offered by many business schools throughout the country and as referenced in your proposal.

We also note the reference in your proposal to several multi-disciplinary programs in Data Science. Given the differences in expertise between our two departments, we remain optimistic that opportunities exist in the future for us to collaborate on additional courses or programs in the area of big data. We desire to continue discussions with the School of Computing regarding opportunities for cross-over between our many programs.

Thank you for the opportunity to review and respond to your proposed certificate program. We wish you the best as you take the next steps in the approval process.

Sincerely,



Taylor Randall

Dean

David Eccles School of Business



December 17, 2013

Richard B. Brown
Dean, College of Engineering
University of Utah
72 Central Campus Drive, Room 1692 WEB
Salt Lake City, UT 84112
brown@utah.edu

Dean Brown:

The University of Utah Marriot Library appreciates the request to comment on our ability to support a new Certificate in Big Data. The Library is committed to supporting the University and its faculty as they develop programs needed by our students.

Because the curriculum supporting the Certificate will be based on existing courses and a similar track resulting in a MS or PhD in Computing is offered in Data our current collections should already have sufficient size and depth to satisfy the needs of most students and faculty.

The Marriot Library's longstanding approval plan for the purchase of English language scholarly books provides excellent ongoing support for nearly all areas of research. The Library also maintains subscriptions to core journals covering the areas of computer science, mechanical engineering, electrical engineering, and management. We also subscribe to many databases that will support the new Certificate, such as Web of Science (Science Citation Index), Scopus, Inspec, the IEEEExplore digital library, the Association for Computing Machinery digital library, and the Computer Source database.

Additionally, we continue to encourage faculty to work with subject librarians to build up specific disciplines, like data center engineering. Despite budget constraints, we are usually able to order any books necessary to directly support classes and faculty research. We can also modify our journal subscriptions to reflect current teaching and research. As the scholarly communication landscape continues to evolve, new options for information access often exist beyond traditional print book purchases and conventional subscriptions. We would be pleased to work with faculty to identify and evaluate the most efficient and effective means available to provide the information needed by faculty and students associated with the Certificate.

Student difficulties in locating materials often stem not from collection weaknesses, but from the complexities of using a large research library. We offer class presentations and one-to-one consultations with library specialists who will help students find the most relevant works and suggest the most appropriate search strategies.

We look forward to working with the faculty and students in this new program.

Yours truly,

Rick Anderson
Associate Dean,
Scholarly Resources & Collections
J. Willard Marriott Library

Catherine Soehner
Associate Dean,
Research & Learning Services
J. Willard Marriott Library

CC: jeffp@cs.utah.edu

Re: Letter of Support for the Big Data Graduate Certificate proposed by the School of Computing

January 23, 2014

To Whom It May Concern:

I write in strong support of the Big Data Graduate Certificate proposed by the School of Computing. As the Department Chair for Biomedical Informatics within the School of Medicine, we also train scientists in various aspects of data management and analysis. The growth of data within medical fields is an ongoing challenge, and thus training in big data is an important topic.

We have been in contact with Dr. Jeff Phillips within the School of Computing regarding the proposed certificate, and we are supportive of the proposal. A few students from Biomedical Informatics have taken some of the associated classes, and have had positive reviews.

As part of the School of Medicine, we are in the planning phase for a related certificate on Medical Data Science, led by Dr. Brian Chapman and Dr. Matt Samore. Brian and Jeff have recently discussed the relationship between the proposed certificates and feel they are complimentary. The Medical Data Science certificate would aim to help train medical scientists in quantitative skills relevant to their fields, whereas the Big Data certificate would train students with computer science training the skills for scaling up data management and analysis. Medical scientists with training in computing may wish to take classes for the Big Data certificate, and computing students eager to learn domain knowledge in medical informatics will be encouraged to take classes for a Medical Data Science certificate.

In summary, we look forward to continuing to build a mutually beneficially relationship with the School of Computing through this program.

Feel free to contact me with any questions.

Sincerely,



Wendy W. Chapman
Professor and Chair, Department of Biomedical Informatics
University of Utah

Honors and Awards to Members of the University Community

1. The University of Utah has been named one of the nation's 100 best values in public colleges for 2014 by Kiplinger's Personal Finance in a report released Dec. 11. This is the fourth time the U has appeared on the list. The report, which features schools that deliver a quality education at an affordable price, ranked the U at 69 due to its four-year graduation rate, low average student debt at graduation, abundant financial aid, low sticker price and overall great value. To create the rankings, Kiplinger uses data on nearly 600 public, four-year schools and measures academic quality, cost and financial aid. Quality accounts for 55 percent, and cost accounts for 45 percent.
2. Brad Vierig, associate dean of Executive MBA (EMBA), Professional MBA, and Executive Education programs with the David Eccles School of Business at the University of Utah, received the 2013 Bud Fackler Service Award from the EMBA Council. The Bud Fackler Service Award recognizes contributions to the EMBA Council and to EMBA programs worldwide, including efforts to help other programs, to share best practices, and to raise the quality of EMBA programs. The council's executives recognized Dean Vierig for his work in advancing the EMBA industry and his many years of service on the council.
3. Dr. Abbie Griffin, the Royal L. Garff Presidential Chair in Marketing at the David Eccles School of Business, will be honored this spring as one of the top 45 ranking researchers in the technology innovation management field. The award comes on behalf of the International Association for Management of Technology (IAMOT), and will be presented at a May ceremony in Washington, D.C. IAMOT is a non-profit, non-governmental professional association whose purpose is to encourage high quality research and education in the field of Management of Technology.
4. Two University of Utah faculty members – chemist Henry S. White and science educator Aloysius S. Church – are among seven winners of the 2013 Utah Governor's Medals for Science and Technology. The state cited White, a distinguished professor of chemistry, as "a world leader in electrochemical systems used in energy storage and biomedical applications." Professor White and his students "developed novel sensors capable of analyzing single molecules of DNA, invented new approaches to delivering drugs through skin, and designed 3-D electrochemical energy storage systems with extremely high power density." He has published more than 200 peer-reviewed scientific publications, holds various patents and is an associate editor of the *Journal of the American Chemical Society*. Professor Church is currently an adjunct instructor in the College of Education, teaching classes for prospective principals and higher education administrators in the Department of Educational Leadership and Policy. He also consults for the Utah State Office of Education. But Church perhaps is best known as the designer, founder and first principal of AMES, the Academy for Math, Engineering and Science, which was Utah's first high school with a focus on early college work in science, technology, engineering and math, or STEM.
5. Three Health Sciences faculty members whose research has resulted in major disease-related discoveries, numerous patents, biomedical inventions, and startup companies have been named fellows of the National Academy of Inventors (NAI). Carl W. Wittwer, M.D., Ph.D., professor of pathology and research scientist at ARUP Laboratories, has been a pioneer in developing polymerase chain reaction (PCR) techniques for analyzing DNA and holds 34 U.S. patents in this area. He is the

primary inventor of the LightCycler real-time PCR system, with over 10,000 units in service worldwide. Dr. Wittwer co-founded BioFire Diagnostics (previously known as Idaho Technology), a company with 500 employees that provides the U.S. government with a rapid PCR platform for military defense against biologic weapons. Lisa Cannon-Albright, Ph.D., professor of internal medicine and chief of the Division of Genetic Epidemiology at the U School of Medicine, has used biomedical informatics to develop the analytical methods for using the unique family-based genetic resource known as the Utah Population Database to look for disease-causing gene mutations in large, multigenerational families. Several of her discoveries have led to patented technologies, some of which have formed the basis for new diagnostic tests. Glenn D. Prestwich, Ph.D., presidential professor of medicinal chemistry and special presidential assistant for faculty entrepreneurship, has been a prolific researcher, inventor and entrepreneur for over 30 years. Professor Prestwich's latest patents support the development of drugs to treat chronic inflammation of the bladder and periodontal tissues. He has more than 27 patents which have led him to found eight companies, including Echelon Biosciences, Glycosan Biosystems (now BioTime), and GlycoMira Therapeutics.