

ACTION ITEM #10

Proposal for New Bachelor's Degree (Erica Weintraub Austin)

May 6, 2016

TO ALL MEMBERS OF THE BOARD OF REGENTS

SUBJECT: Proposal for New Bachelor of Science Degree

PROPOSED: That the Board of Regents approve a Bachelor of Science Degree in Data Analytics

SUBMITTED BY: Erica Weintraub Austin, Interim Co-Provost

**SUPPORTING
INFORMATION:**

The greatest employment opportunities in data science lie in the intersection of basic business, technical, project management, and communication skills, rather than highly-skilled and credentialed data scientists. Undergraduate offerings seek to develop graduates for the former niche (e.g., business analyst or data analyst, rather than data architect), rather than more advanced positions. Companies often prefer undergraduates with data science skills because they command less competitive compensation than those with graduate degrees.

Demand for graduates of bachelor's degree programs with data analytics skills increased 70% from 2010-2013, and continue to increase rapidly. However, this increase largely reflects the increase in overall regional employer demand. From February 2010 to January 2011, relevant postings composed 10.3 percent of all regional job postings. In the most recent year, relevant postings composed 11 percent of all regional job postings.

Data analytics program directors anticipate a continued increase in demand for data analytics skills as private sector employers continue to develop new applications for data. The rise in data generation and capture in the last decade (from sources as varied e-commerce transactions, Internet activity, RFID sensors, smartphones, and social media) has created a revolution in data-driven management across multiple sectors. Opportunities abound for highly-skilled data scientists who can extract, transform, and load raw and unstructured data into usable formats, uncover correlative and causative patterns, and exploit them for wiser decision-making. These positions have in turned spurred

the creation of even further "down-market" jobs for technical roles involved in database access (e.g., information designers, systems integration specialists) and business analysts who can turn data into information (e.g., mining financial data for better risk prediction, optimizing sales and pricing for product marketing, testing consumer preferences, analyzing employee success factors to develop a better candidate profile).

The predicted shortage of talent in the next five years with deep analytical skills to take advantage of big data is 140,000-190,000.

The proposed Program in Data Analytics is to be administered jointly by (1) the School of Electrical Engineering and Computer Science in the Voiland College of Engineering and Architecture; and (2) the Department of Mathematics and Statistics in the College of Arts and Sciences. Partners will include the Carson College of Business; the College of Agricultural, Human and Natural Resource Sciences; the College of Veterinary Medicine, and the College of Education. This interdisciplinary degree program has a tripartite composition of computational sciences, statistics, and one of several application areas or "tracks": (1) actuarial sciences; (2) business; (3) computation; (4) agricultural and environmental systems; (5) economics; (6) life science; (7) physical science; and (8) social science. All tracks will be available on the Pullman campus, with the highest demand business and actuarial science tracks extended to Vancouver, North Puget Sound at Everett, and the WSU Global Campus.

The proposed program will meet the missions of the University, College of Arts and Sciences, Voiland College of Engineering and Architecture, School of Electrical Engineering and Computer Science and Department of Mathematical and Computer Science by offering an innovative, interdisciplinary educational program that focuses on the innovative analysis of large datasets using advanced computational and statistical techniques. The core program advances the technical education mission of the Voiland College of Engineering, while the tracks support the broad-based educational goals of the College of Arts and Sciences. This interdisciplinary program will provide extensive opportunities for research experience and professional internships - key goals for EECs. The broad' based program with a particular emphasis on communication skills will prepare students for professional leadership.

The Data Analytics program aligns well with the North Puget Sound emphasis on science, technology, 'engineering and mathematics. And alignment with industry needs in that region is demonstrated by the targeted allocation of state funds to offer a Data Analytics degree at Everett.

The Data Analytics degree builds upon existing Computer Science and Business Administration degrees in Vancouver, reaching place-bound students in southwest Washington state.

The Data Analytics program has the potential to make a substantial impact on the connection of WSU to the world through the Global Campus. Since there are no existing on-line undergraduate data analytics degree programs at present, this program could substantially expand the WSU online footprint and the perception of WSU online programs generally.

At a meeting on March 22, 2016, the Academic Affairs Committee approved the proposal to create a new degree, the Bachelor of Science in Data Analytics, to be offered on the WSU Pullman, Everett, Global and Vancouver campuses.

The following were noted and/or addressed during the review process:

- There are eight plans offered under the degree
 - Actuarial Sciences
 - Agriculture and Environmental Systems
 - Business
 - Computation
 - Economics
 - Life Sciences
 - Physical Sciences
 - Social Sciences
- All plans will be offered on Pullman Campus. Business and Actuarial Science will be extended to the Vancouver, North Puget Sound at Everett and Global Campuses.
- Degree approval is dependent upon approval of new course on UPMCB10.

The proposal has support from the Provost, Budget Committee, Catalog Subcommittee, and the Library Committee. The proposal recommends an effective date of fall 2016. This recommendation was passed by the Faculty Senate on April 14, 2016.