

March 22, 2017

MEMORANDUM

TO: State Board of Regents

FROM: David L. Buhler

SUBJECT: Dixie State University – Bachelor of Science in Bioinformatics

Issue

Dixie State University (DSU) requests approval to offer a Bachelor of Science in Bioinformatics effective Fall Semester, 2017. The proposed program was approved by the institutional Board of Trustees November 4, 2016.

Background

Bioinformatics is a relatively new interdisciplinary field wherein research scientists utilize data to sequence genomes, study protein structures, and maintain patient databases. The field merges Biology, Computer Science, Chemistry and Mathematics, requiring competency in each. Since scientists are typically not cross-trained in multiple fields, bioinformatics professionals provide essential work to process cross-disciplinary research data. Through rigorous coursework and laboratory experience across these disciplines, students will gain the knowledge and skills necessary to understand and address scientific problems that impact society in the pharmaceutical, agricultural, biotechnology, and other related industries.

The proposed Bachelor of Science (BS) in Bioinformatics offers courses covering topics relating to large data sets, and it provides hands-on experience in laboratory courses and student-driven research projects. Program graduates will be prepared to pursue professional careers in high demand occupations. They will also be prepared for a number of Master and Doctor of Philosophy programs in bioinformatics and related disciplines.

It is anticipated that graduates will find employment opportunities in southern Utah and in other more populated areas of the state. The Utah Department of Workforce Services (DWS) does not have a discrete occupational category for bioinformatics, however, a query was made using Burning Glass Labor Insight. The St. George, Salt Lake City, Ogden-Clearfield, and Provo-Orem metropolitan areas were queried over a 12-month period (February 1, 2016 through January 31, 2017). The query identified 100 job postings that required bioinformatics as a skill, and it aligned these job postings to occupational categories (SOC codes). The table below provides summary data for the occupational categories most frequently aligned to the job postings found through the Burning Glass query. Department of Workforce Services data was sourced from the DWS Occupation Information Data Viewer.

SOC Code	Occupation	DWS Estimated Annual Openings in Utah 2014 – 2024	DWS Reported Utah Median Wage	Burning Glass Reported Mean Advertised Salary
15-2041	Statisticians	10	\$73,820	\$79,150
15-1199	Computer Occupations, Other	Not available	\$72,540	\$87,604
11-9111	Medical and Health Services Managers	150	\$90,120	\$62,931
19-1042	Medical Scientists, Except Epidemiologists	40	\$80,400	\$87,620
15-1132	Software Developers, Applications	640	\$91,440	\$100,215
19-1029	Biological Scientists, Other	Not available	\$68,320	\$67,840

A baccalaureate degree represented the degree level required for the majority of positions within these occupational categories.

Policy Issues

The proposed program has been developed through established institutional procedures and Board of Regents policy. Chief Academic Officers as well as faculty in related departments from the Utah System of Higher Education institutions have reviewed the proposal and have provided input.

Commissioner's Recommendation

The Commissioner recommends the Board of Regents approve the Bachelor of Science in Bioinformatics.

David L. Buhler
Commissioner of Higher Education

DLB/BKC
Attachment

**Program Description – Full Template
Dixie State University
Bachelor of Science, Bioinformatics**

Section I: The Request

Dixie State University requests approval to offer Bachelor of Science in Bioinformatics effective Fall Semester 2017. This program was approved by the institutional Board of Trustees on November 4, 2016.

Section II: Program Description

Complete Program Description

Bioinformatics is a fairly new interdisciplinary field that emerged to allow research scientists to utilize large amounts of data collected as scientists sequence genomes, study protein structures, and maintain large patient databases in medicine. The field merges Biology, Computer Science, Chemistry and Mathematics, requiring competency in all of them –something that has been historically rare among both scientists and computer and technology experts. Through coursework and laboratory experience across these disciplines, students will gain the knowledge and skills necessary to understand and address scientific problems that impact society in the pharmaceutical, agricultural, and biotechnology industries.

The Bachelor of Science (BS) in Bioinformatics program offers courses covering the diverse topics required to make sense of large data sets, and allows for hands-on experience in laboratory courses and student-driven research projects. Through fundamental topics covered in biology, chemistry, mathematics, and computer science and through upper-division courses in more specific areas, students will become familiar with the cross-disciplinary nature of Bioinformatics, and learn the fields of science where the concepts and techniques used in bioinformatics are applied. The degree will also prepare students for a number of Master and Ph.D. programs in the region in fields ranging from Bioinformatics to Environmental Sciences and Health.

Purpose of Degree

Bioinformatics is a growing field. New developments in information technology and its application to biotechnology and life science industries are escalating the growth of the bioinformatics market globally. Bioinformatics is essential in processing data from research and development activities in the life science, biotechnology, biopharmaceutical, pharmaceutical and agricultural fields. However, traditionally trained scientists in the life sciences and computer scientists rarely have training in each other's fields.

The DSU Bioinformatics program will produce biologists who are comfortable with the analytics and tools required to answer important questions in the life sciences. Graduates in this field will be prepared to pursue a fast growing professional career and/or post-graduate education. Offering the Bachelor of Science degree in Bioinformatics at Dixie State University (DSU) provides a world of opportunities to students from the regional community to pursue their dreams across the scientific disciplines. With the majority of DSU students coming from the local area, training these students in bioinformatics will provide a prepared workforce for local economic development in a clean industry. Additionally, with the expected population and business growth in Washington County over the next decade, the Bioinformatics degree will prepare students to fill job demand as technological and scientific corporations explore the area as their new home.

Institutional Readiness

Dixie State University already offers most of the courses required for the proposed program. Four new courses will need to be developed, two of which are required core classes and the other two are optional electives planned to be added over the next few years. The two required core courses and one of the elective courses will be taught by bioinformatics faculty that will be hired as discussed later in this proposal. The other elective is a course in development by a tenure-track faculty member currently in Biological Sciences. In addition to the traditional class activities, partnering with Intermountain Healthcare will provide students with the opportunity to interact with practitioners in the field and to help with real world research projects. Existing molecular and cellular biology faculty currently support undergraduate research opportunities to supplement those opportunities. Plans for the degree are not expected to have a negative impact on traditional general-education courses or a significant impact on any of the existing DSU baccalaureate programs. Existing advising and secretarial support in Biological Sciences is sufficient to support the addition of this degree program as biology majors are still below the recommended maximum assigned to an individual advisor.

Support has been voiced for developing a baccalaureate degree in bioinformatics from DSU administration. New funding support will be required for a bioinformatics professor to teach the more specialized courses. The program budget reflects this faculty addition.

Departmental Faculty

Department Faculty Category	Department Faculty Headcount – Prior to Program Implementation	Faculty Additions to Support Program	Department Faculty Headcount at Full Program Implementation
With Doctoral Degrees (Including MFA and other terminal degrees, as specified by the institution)			
Full-time Tenured	8		8
Full-time Non-Tenured	2	1	3
Part-time Tenured		1	1
Part-time Non-Tenured	8		8
With Master's Degrees			
Full-time Tenured			
Full-time Non-Tenured			
Part-time Tenured			
Part-time Non-Tenured	7		7
With Bachelor's Degrees			
Full-time Tenured			
Full-time Non-Tenured			
Part-time Tenured			
Part-time Non-Tenured	11		11
Other			
Full-time Tenured			
Full-time Non-Tenured			
Part-time Tenured			
Part-time Non-Tenured			
Total Headcount Faculty in the Department			

Full-time Tenured	8		8
Full-time Non-Tenured	2	1	3
Part-time Tenured		1	
Part-time Non-Tenured	26		26
Total Department Faculty FTE (As reported in the most recent A-1/S-11 Institutional Cost Study for "prior to program implementation" and using the A-1/S-11 Cost Study Definition for the projected "at full program implementation.")	30.76	1.25	32.01

Staff

Full-time Tenure track faculty member – year three

Class and Laboratory Adjunct Instructors – added as needed

Teaching assistants – senior level students to assist but not teach labs.

Library and Information Resources

DSU's current holdings between 2011-2016 are:

	DSU Owned	DSU Access
Bioinformatics	0	14
Biomathematics	0	0
Comparative Genomics	0	0
Computational Biology	0	5
Computer applications in Life Sciences	0	0
Genomics	3	18
Medical Informatics	0	0

Comparing the holdings of other Utah institutions in these same aggregated subject headings for monographs from 2011-2016 (this likely excludes eBook holdings from the same time period for the larger three schools) shows that DSU is lacking in monographs. In consultation with the Dean of the DSU Library, it is projected that an average of seven additional titles per year over the next five years should be added to support the program. Anticipated cost of these additions is \$1050 per year.

Several of the journals in the subject area are open access or are already part of the library collection. The DSU Library Dean compiled a list of relevant journal titles. Of the 68 titles identified DSU students currently have access to 34. Adding additional titles will cost between \$200 and \$4100 per year per journal with an average cost of just over \$2,000. It is projected that adding one to two titles per year over the next five years will cost \$3,000 per year.

Funds for library additions are included in the program budget.

Admission Requirements

Admission to the program will follow existing institutional admission standards. No specialized program admission criteria will be implemented, although students will need to meet required prerequisites for the science, math, computer, and other courses required for the program.

Student Advisement

Consistent with university policies, an advisor familiar with the program as well as careers in bioinformatics and related disciplines will advise students about completion requirements, curriculum planning, and options to pursue post-baccalaureate opportunities. The advisor from Biological Sciences will work with the Lecturer-Advisors from Computer Science to advise students as well as to disseminate information about the program and careers.

Justification for Graduation Standards and Number of Credits

Graduation standards are: (1) Completion of a minimum of 120 semester credits with a minimum of 49 upper-division credits; (2) Overall grade point average of 2.0 (C) or above with a minimum of 2.0 in the major; (3) Residency hours – minimum of 30 credit hours through course attendance at DSU, with at least 15 credits earned in last 45 credits; (4) Completion of general education and specified department requirements; (5) A minimum of 52 credit hours must be in the major with a minimum of 20 credits taken at DSU; and (6) Successful completion of at least two Global/Cultural Perspective courses.

External Review and Accreditation

The proposed program was developed in consultation with a bioinformatics scientist at Intermountain Healthcare. Some of the proposed new courses were the result of the consultant’s recommendation to offer courses in genetics, genomics and proteomics.

Projected Program Enrollment and Graduates; Projected Departmental Faculty/Students

Data Category	Current – Prior to New Program Implementation	Projected Year 1	Projected Year 2	Projected Year 3	Projected Year 4	Projected Year 5
Data for Proposed Program						
Number of Graduates in Proposed Program	X	0	5	10	10	20
Total # of Declared Majors in Proposed Program	X	20	25	40	50	50
Departmental Data – For All Programs Within the Department						
Total Department Faculty FTE (as reported in Faculty table above)	30.76	31.01	31.01	32.01	32.01	32.01
Total Department Student FTE (Based on Fall Third Week)	544	665	751	863	992	1140
Student FTE per Faculty FTE (ratio of Total Department Faculty FTE and Total Department Student FTE above)	17.7	21.4	24.2	27.0	31.0	35.6
Program accreditation-required ratio of Student FTE/Faculty FTE, if applicable: (Provide ratio here: _____)	NA	NA	NA	NA	NA	NA

Expansion of Existing Program

Dixie State University currently offers a BS in Biological Sciences. Within that degree there are three emphases: Biomedical Science, Biological Science, and Natural Science. This new degree expands the breadth of offerings within the department.

Section III: Need

Program Need

Bioinformatics is a growing field with significant career potential. Offering the BS in Bioinformatics provides opportunities for students from the regional community to pursue in-demand careers that allow them to blend their interests in several STEM areas. A DSU survey of student interest in new degrees completed in 2015 indicates sufficient interest for this program.

Labor Market Demand

The Utah Department of Workforce Services (DWS) does not have a discrete occupational category for bioinformatics, however, a query was made using Burning Glass Labor Insight. The St. George, Salt Lake City, Ogden-Clearfield, and Provo-Orem metropolitan areas were queried over a 12 month period (February 1, 2016 through January 31, 2017). The query identified 100 job postings that required bioinformatics as a skill, and it aligned these job postings to occupational categories (SOC codes). The table below provides summary data for the occupational categories most frequently aligned to the job postings found through the Burning Glass query. Department of Workforce Services data was sourced from the DWS Occupation Information Data Viewer.

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Student Demand

There is evidence of strong student demand for a BS degree in Bioinformatics. A survey completed in 2015 asked students if they would switch majors if DSU offered eight new degree programs. Bioinformatics was one of the options listed and 2.83% of responding students said that they would switch to a bioinformatics program if it was available. This works out to approximately 258 students based on recent student body size.

Similar Programs

While the University of Utah offers graduate programs in bioinformatics, BS degrees in the field are unusual in Utah. The only other one is at Brigham Young University. Similar programs in the USHE and Intermountain Region are listed below.

- Utah State University – Bachelor of Science in Computer Science, with an emphasis in Bioinformatics
- Brigham Young University – Bachelor of Science in Bioinformatics
- Arizona State University – Bachelor of Science in Biomedical Informatics (more related to healthcare logistics than bioinformatics)
- University of Arizona – Bachelor of Science in Biology, with an emphasis in Bioinformatics
- University of Colorado, Boulder – Bachelor of Science in Computational Biology (a closely related field)

Collaboration with and Impact on Other USHE Institutions

Faculty from DSU are tailoring the program to feed into graduate programs in statistical genetics and bioinformatics at the University of Utah.

Benefits

The new BS in Bioinformatics will provide a new program that offers local and regional students access to a science degree at an open-enrollment institution. Recruitment of students into STEM (Science, Technology, Engineering and Math) fields is beneficial for the growth of the economy. Producing qualified students in bioinformatics will benefit local biotech businesses and organizations. The institution has received support from Dixie Regional Medical Center, an employer seeking to hire additional employees to assist with its new genomic oncology program.

Consistency with Institutional Mission

In fulfillment of its mission DSU is committed to meet community needs by preparing students for careers in high-demand areas through personalized teaching and educational experiences. Through this program DSU will be able to provide individualized instruction to small classes and access to real world experience through its partnership with Dixie Regional Medical Center.

Section IV: Program and Student Assessment

Program Assessment

Upon graduating students will:

- be competent with respect to biology and biotechnology
- effectively develop and implement computational solutions to problems.
- understand the process of science — how scientific knowledge is generated and validated — so that they can make independent, empirical inquiries about the natural world.
- demonstrate knowledge of the process of science by being able to interpret data in the form of tables, graphs, and charts and then communicate those findings in oral and or written form.

In each course, students will be assessed using existing departmentally developed evaluation techniques and standardized tests.

Expected Standards of Performance

Students will be assessed every semester both qualitatively and quantitatively. Qualitative assessment will be based on randomized evaluation of appropriate assignments by at least two faculty members. Evaluation rubrics are used that are modified versions of those produced by the American Association of Colleges and Universities. These assessments focus on soft skills including communication (oral and written) and critical thinking. Quantitative analysis will be done prior to graduation using Educational Field Test standardized exams in the classroom setting and comparing DSU student averages to national averages.

Section V: Finance

Department Budget

Three-Year Budget Projection							
Departmental Data	Current Departmental Budget – Prior to New Program Implementation	Departmental Budget					
		Year 1		Year 2		Year 3	
		Addition to Budget	Total Budget	Addition to Budget	Total Budget	Addition to Budget	Total Budget
Personnel Expense							
Salaries and Wages	\$1,030,473	\$30,000	\$1,060,473	\$9,000	\$1,069,473	\$55,000	\$1,124,473
Benefits	\$306,988	\$0	\$306,988	\$0	\$306,988	\$27,000	\$333,988
Total Personnel Expense	\$1,337,461	\$30,000	\$1,367,461	\$9,000	\$1,376,461	\$82,000	\$1,458,461
Non-Personnel Expense							
Travel	\$9,103	\$0	\$9,103	\$0	\$9,103	\$1,000	\$10,103
Capital	\$5,959	\$0	\$5,959	\$0	\$5,959	\$0	\$5,959
Library	\$0	\$4,050	\$4,050	\$0	\$4,050	\$0	\$4,050
Current Expense	\$136,670	\$15,000	\$151,670	\$0	\$151,670	\$2,500	\$154,170
Total Non-personnel Expense	\$151,732	\$19,050	\$170,782	\$0	\$170,782	\$3,500	\$174,282
Total Expense (Personnel + Current)	\$1,489,193	\$49,050	\$1,538,243	\$9,000	\$1,547,243	\$85,500	\$1,632,743
Departmental Funding							
Appropriated Fund	\$1,294,808	\$29,400	\$1,343,858	\$10,350	\$1,352,858	\$85,550	\$1,438,358
Other:							
Special Legislative Appropriation	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Grants and Contracts	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Special Fees/Differential Tuition	\$194,385	\$0	\$194,385	\$0	\$194,385	\$0	\$194,385
Total Revenue	\$1,489,193	\$49,050	\$1,538,243	\$9,000	\$1,547,243	\$85,500	\$1,632,743
Difference							
Revenue - Expense	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Departmental Instructional Cost/Student Credit Hour* <i>(as reported in institutional Cost Study for "current" and using the same Cost Study Definition for "projected")</i>	\$99		\$98		\$97		\$101
* Projected Instructional Cost/Student Credit Hour data contained in this chart are to be used in the Third-Year Follow-Up Report and Cyclical Reviews required by R411.							

Additions to budgets include:

Year 1 – One part-time tenure-track bioinformatics faculty member (0.25 time) shared with Precision Genomics who will be covering 75% of salary and all benefit costs. Adjuncts as needed.

Year 2 – Adjuncts as needed.

Year 3 – Bioinformatics professor

Funding Sources

Funding will come from a combination of tuition revenue and appropriated funds.

Reallocation

Not applicable.

Impact on Existing Budgets

Whereas the majority of courses in the program are currently offered by current DSU faculty, it is not anticipated that there will be a negative impact on existing budgets.

Section VI: Program Curriculum

All Program Courses (with New Courses in Bold)

Course Prefix and Number	Title	Credit Hours
General Education Required Courses		
CIS 1200, CS 21201, or (CS 1400 & CS 1410)	Computer Literacy	0-6

Course Prefix and Number	Title	Credit Hours
ENGL 1010 or ENGL 1010D	English	0-4
ENGL 2010	English	3
LIB 1000 or LIB 1010	Information Literacy	0-1
	Mathematics	3-5
	American Institutions	3-6
	Life Sciences	3-4
	Physical Sciences	3-4
	Laboratory Science	1
	Fine Arts	3
	Literature / Humanities	3
	Social & Behavioral Sciences	3
	Exploration	3-5
	Global & Cultural Perspectives	0-3
	Global & Cultural Perspectives	0-3
	Sub-Total	28*
Bioinformatics Core Requirements		
BIOL 1610/15 *	Principles of Biology I/Lab	5
BIOL 1620/25	Principles of Biology II/Lab	5
BIOL 3010	Evolution	3
BIOL 3030	Molecular Genetics	4
BIOL 3150/55	Biostatistics and the Scientific Method/Lab	3
BIOL 3300	Introduction to Bioinformatics	3
BIOL 3550/55	Eukaryotic Cell Biology/Lab	4
BIOL 4300/05	Molecular Biology/Lab	4
BIOL 4310	Advanced Bioinformatics	3
BIOL 4810R or 4820R	Independent Research I or II	1-2
MATH 1210 *	Calculus I	5
MATH 1220	Calculus II	4
MATH 2270	Linear Algebra	3
MATH 3400	Probability and Statistics	3
CHEM 1210/15 *	Principles of Chemistry I/Lab	5
CHEM 1220/25	Principles of Chemistry II/Lab	5
CHEM 2310/15	Organic Chemistry I/Lab	5
CHEM 2320/25	Organic Chemistry II/Lab	5
CHEM 3510/15	Biochemistry I/Lab	4
CS 1400 *	Fundamentals of Programming	3
CS 1410 *	Object Oriented Programming	3
CS 2420	Introduction to Algorithms and Data Structure	3
CS 3310	Discrete Mathematics	3
CS 3510	Advanced Algorithms/Data Structures	3
CS 4307	Database Design and Management	3
	Sub-Total	92-93

Course Prefix and Number	Title	Credit Hours
Recommended Elective Courses (to be taken if they are able to fit into a student's schedule)		
BIOL 3800	Biotechnology	2
BIOL 4100	Proteomics	3
MATH 2280	Differential Equations	3
MATH 3500	Numerical Analysis	3
CS 3005	Programming in C++	3
	Sub-Total	0
	Total Number of Credits	120 - 121

* GE credits used to fulfill program requirements have been removed from the GE sub-total.

Program Schedule

Semester 1		
Course Prefix and Number	Title	Credit Hours
BIOL 1610/15	Principles of Biology I/Lab	5
ENGL 1010	Introduction to Writing	3
CS 1400	Fundamentals of Programming	3
General Education	Literature/Humanities	3
LIB 1010	Information Literacy	1
	Total	15

Semester 2		
Course Prefix and Number	Title	Credit Hours
BIOL 1620/25	Principles of Biology II/Lab	5
ENGL 2010	Interm Writing Selected Topics:	3
CS 1410	Object Oriented Programming	3
General Education	American Institutions	3
	Total	14

Semester 3		
Course Prefix and Number	Title	Credit Hours
CHEM 1210/15	Principles of Chemistry I/Lab	5
MATH 1210	Calculus I	5
BIOL 3010	Evolution	3
CS 2420	Introduction to Algorithms and Data Structure	3
	Total	16

Semester 4		
Course Prefix and Number	Title	Credit Hours
CHEM 1220/25	Principles of Chemistry II/Lab	5
MATH 1220	Calculus II	5
BIOL 3030	Molecular Genetics	4
Total		14

Semester 5		
Course Prefix and Number	Title	Credit Hours
BIOL 3300	Introduction to Bioinformatics	3
BIOL 3550/55	Eukaryotic Cell Biology/Lab	4
CHEM 2310/15	Organic Chemistry I/Lab	5
General Education	Social & Behavioral Sciences	3
Total		15

Semester 6		
Course Prefix and Number	Title	Credit Hours
BIOL 3150/55	Biostatistics and the Scientific Method/Lab	3
CHEM 2320/25	Organic Chemistry II/Lab	5
General Education	Fine Arts / GLOCUP	3
CS 3310	Discrete Mathematics	3
Total		14

Semester 7		
Course Prefix and Number	Title	Credit Hours
BIOL 4300/05	Molecular Biology/Lab	4
BIOL 4100	Proteomics	3
CHEM 3510/20	Biochemistry II/Lab	4
CS 3510	Advanced Algorithms/Data Structures	3
MATH 3400	Probability & Statistics	3
Total		17

Semester 8		
Course Prefix and Number	Title	Credit Hours
BIOL 4310	Advanced Bioinformatics	3
CHEM 3520/25	Biochemistry II/Lab	4
CS 4307	Database Design and Management	3
General Education	Exploration / GLOCUP	3
BIOL 4820R	Independent Research	2
Total		15

Section VII: Faculty

Tenure-track full-time Biological Sciences Faculty (alphabetical)

Karen Bauer – D.A. (Doctorate of Arts) in Biology (Idaho State University), 1996; M.S. in Zoology (Idaho State University), B.S. in Zoology and B.S. in Secondary Education (Idaho State University), 1984.

Jennifer Ciaccio – Ph.D. in Biology (University of Miami), 2008; M.S. in Entomology (University of Arizona), 1993; B.S. in Biology (Villanova University), 1991.

Aaron Davis – Ph.D. in Molecular Biology (Utah State University), 2013; B.A. in International Studies with minors in Biology and Chemistry (Utah State University), 2006.

Martina Gaspari – Ph.D. in Cell and Molecular Biology (Karolinska Institute, Stockholm), 2006; M.S. in Biological Sciences (University of Padua, Italy), 1999.

Erin O'Brien – Ph.D. in Biology (University of Illinois at Chicago), 2004; B.A. in Biology (Bryn Mawr College), 1996.

Del Smith – Ph.D. in Botany (Brigham Young University), 2000; M.S. in Botany (Brigham Young University), 1994; B.S. in Biology, minors in Geology and Chemistry (Southern Utah University).

Marius van der Merwe – Ph.D. in Biology (University of Illinois at Chicago), 2004; M.S. in Entomology (University of Pretoria, South Africa), B.S. in Zoology and Genetics (University of Pretoria, South Africa).

Curt Walker – Ph.D. in Zoology (University of Idaho), 1993; B.S. in Biochemistry (University of Wisconsin-Madison), 1987.

Don Warner – Ph.D. in Veterinary Microbiology (Texas A&M University), 1986; M.S. in Animal Science (Brigham Young University), 1979; B.S. in Animal Science (Brigham Young University), 1976.

Adjunct and Part-time Faculty

Richard Albright, Doctor of Chiropractic

Bonnie Bain, Ph.D. Biology

Marie Barber, B.S. Exercise Science

Rebecca Basso, B.S. Nursing

Brian Caldwell, B.S. Biology

Mark Dickson, M.S. Science Education

Nikell Dodge, B.S. Biology

Christian Edwards, M.S. Biology

Harold Engebretsen, M.S. Food Science

Kathi Engebretsen, B.S. Elementary Education

Kelsey Gonzales, B.A. Biology

Scott Griffin, Doctor of Chiropractic

Mike Hobson, Doctor of Chiropractic

Durstin Hooper, B.S. Nursing

Justin Jenkins, Doctor of Chiropractic

Kim Jolly, B.S. Biology/Zoology Composite

Glory Kline, M.D.

LaRae McGregor, B.A. Elementary Education

James Meidell, M.S. Biology

Alissa Moellendorf, B.S. Nuclear Medicine

Rita Osborn, M.B.A., M.A. Public Administration (Director of Rural Health Scholars program)

Joseph Platt, Ph.D. Biology

Laurel Rasmussen, B.S. Biology

Doug Sainsbury, M.S. Biology

Kristal Sullivan, M.S. Chemistry

Richard Wintch, M.D.