

Department of Economics
California State University, Bakersfield

**BS - AGRICULTURAL BUSINESS
SELF-STUDY AND PROGRAM PLAN**

2014 - 2019

Prepared by
Dr. John Deal
Dr. S. Aaron Hegde

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A. INTRODUCTION

The mission of the Agricultural Business (AGBS) program offered by the School of Business and Public Administration (BPA) in California State University, Bakersfield (CSUB) is to work with industry leaders to educate, develop, and train students to enter a dynamic agriculture industry with critical thinking and communication skills, a breadth of knowledge applicable to the timely needs of the industry, and with a level of experience and awareness of the workings of the industry. This mission aligns with CSUB's mission of furthering the region's overall educational level, enhancing its quality of life, and supporting its economic development.

Furthering human capital formation and regional economic development:

The School of BPA and CSUB play a vital role in the human capital formation of the southern San Joaquin Valley region, among the top five agricultural regions in the US. Approximately one in four private sector jobs in Kern County is in agricultural production and food manufacturing. Knowledge and skills that have value to agricultural business (agribusiness) organizations are developed within the program. This also enables the lifelong learning pathways of graduates from community college agribusiness programs, previously lacking articulation with a baccalaureate major in the region. A seamless linkage between associate degrees in agriculture and the baccalaureate was identified as a community need within the Bakersfield area.

Enabling transfers to CSU from California Community Colleges:

In accordance with California Senate Bill 1440, community colleges have developed a Transfer Model Curriculum (TMC) in Agricultural Business that facilitates completion of a baccalaureate degree from a California State University (CSU), with a program in Agricultural Business in sixty semester units. This seamless transition from a community college to a baccalaureate is possible with the BS in AGBS.

The Bachelor of Science in Agricultural Business combines core upper division undergraduate courses in agricultural business at CSUB, with lower division agricultural science and agricultural business foundation courses completed at a community college. The upper division requirements provide knowledge and skills, valued in all agribusiness organizations, such as (1) communications skills, (2) quantitative and evaluative skills, (3) subject matter knowledge of agriculture and food sector, and (4) integrative problem solving and decision-making. The culminating experience for the major requires candidates to propose and carry out a project that applies competencies developed within the major. Additionally, academically qualified agribusiness practitioner instructors, who also assist with graduate and intern placement of agribusiness students, teach many of the AGBS courses (see Appendix for qualifications of program faculty).

B. Changes Since Previous Review

The BS (AGBS) was approved as a pilot program starting in Fall 2014. This is the first program review, as such there are no changes from a previous review.

C. Program's Role in the University

1. Relating Program to University

Consistent with the University and BPA missions of education and community engagement, the AGBS mission is to “work with industry leaders to educate, develop, and train students to enter a dynamic agriculture industry with critical thinking and communication skills, a breadth of knowledge applicable to the timely needs of the industry, and with a level of experience and awareness of the workings of the industry.” The curriculum is designed to provide a combination of theory and real-world applications delivered by both traditional faculty and practitioners in the industry. The program requirements (e.g., business, economics, and science) provide students with a body of knowledge and set of skills that can be applied to a variety of jobs in the agriculture industry. The course learning objectives, content, and tools of assessment in program courses are designed to integrate with the program learning outcomes (PLOs) and the university learning outcomes (ULOs).

2. Relating PLOs to ULOs

The connection between the ULOs and PLOs are summarized in Table 1, while the PLOs are linked to the required upper-level courses in Table 2.

Table 1 Mapping PLOs to ULOs

Program Learning Outcomes (PLO)	University Learning Outcomes (ULO)
Objective 1a. Oral Communication	2B
Objective 1b. Written Communication	2A
Objective 2a. Quantitative Skills	4A & 4B
Objective 2b. Application Skills	4C
Objective 2c. Ethical Reasoning	6A
Objective 3a. Regional and Global Agriculture	3A
Objective 3b. Experiential Learning	3B & 3C
Objective 3c. Careers	3C
Objective 4a. Decision Making	3B & 6D
Objective 4b. Industry	1D, 1F, 3B & 6C

The PLOs map to a majority of ULOs, with the exception of *ULO 5 – Students will become engaged citizens*. While this is not an explicit PLO, the program does incorporate aspects of ULO 5 within its required courses. For example, group projects are required in most of the AGBS courses. Table 2 displays the mapping of PLOs to the required courses in the AGBS major.

Table 2 Curriculum Map (PLOs)

Required Upper-Level Courses	1. Communication Skills	2. Critical Thinking Skills	3. Knowledge of Regional Agriculture and Food Industry	4. Application Skills
AGBS 2510	1b. (D)	2c. (D)	3a. (D); 3c. (I)	4b. (C)
AGBS 3500	1a. (D); 1b. (D)	2a. (D); 2b. (D)	3a. (I)	4a. (I); 4b. (D)
AGBS 3510	1a. (D)	2b. (D)	3a. (I); 3c. (I)	4b. (D)
AGBS 3520	1b. (C)	2a. (C); 2b. (C)	3a. (D)	4a. (C), 4b. (C)
AGBS 3530	1a. (D); 1b. (D)	2b. (D)	3a. (D); 3c. (I)	4a. (C); 4b. (C)
AGBS 3540	1b. (D)	2a. (C); 2b. (C)	3a. (D)	4a. (C); 4b. (D)
AGBS 3570		2a. (C); 2b. (C)	3a. (I)	4a. (D); 4b. (D)
AGBS 4860			3a. (C); 3b. (D); 3c. (D)	
ECON 3030	1b. (D)	2a. (C); 2b. (C)		4a. (D)
ECON 3508	1b. (D)	2a. (D); 2c. (D)		
ECON 4908	1a. (C); 1b. (C)	2a. (C); 2b. (C)	3a. (C); 3c. (D)	4a. (C); 4b. (C)
ERM 4110	1b. (D)		3a. (D)	
INST 4200		2b. (D)		
PLSI 3648	1b. (D)	2c. (D)	3a. (I)	4b. (D)
SCI 3329		2b. (D)	3a. (D)	4b. (D)

LEGEND: I = INTRODUCED; D = DEVELOPED; C = COMPETENT

3. Curriculum Design

The program requirements consist of five lower-division agricultural foundation courses taken at a community college, such as Bakersfield College, and a set of upper-division agricultural business courses taken exclusively at CSUB. In addition to the courses with an AGBS prefix, the curriculum includes courses that also meet a General Education requirement (SCI 3329) and courses taught by other programs (PLSI 3648, ERM 4110, ECON 3030). Some of the courses in the program are cross-listed with departments within BPA. In addition, the BSBA program has an agricultural business concentration that requires a set of five courses that are part of the AGBS major. Four courses in the program (AGBS 2510, AGBS 3500, AGBS 3510, and AGBS 3570) are taught by instructors who are professionals in the industry and therefore provide real-world experience and industry connections for the students. The use of industry professionals as practitioner instructors helps provide students experience and awareness of the current conditions in the industry, job opportunities and internship opportunities that are available, and an ability to apply theory to real-world problems. The remainder of the AGBS courses are taught by full-time faculty from the Economics department.

4. Program's Role

As previously mentioned, the AGBS program relies on other department offerings, especially those within the GE program. Courses that are required by the major and are offered by these departments are part of their regular offerings and do not impact any of their resources. The AGBS program does not offer any courses as part of the GE

offerings, however, each AGBS course is cross-listed with other departments and as such are taken by students in other programs. The AGBS courses are cross-listed as follows:

Table 3 Cross-listed Courses

AGBS Course	Cross-listed Course
AGBS 3500	MGMT 3500
AGBS 3510	MKTG 3510
AGBS 3520	ECON 3520
AGBS 3530	ECON 3530
AGBS 3540	ECON 3540
AGBS 3570	ACCT 3170

D. Evidence of Program Quality

1. Assessment – Evidence of SLOs

The assessment of all activities (e.g., attainment of student learning outcomes) is fundamental to decisions made in the AGBS program. Courses are designed and altered in response to the evaluation of student course artifacts and student feedback. The effectiveness of the program in assuring student success, such as high rates of job placement, depend on the timely response to problems and opportunities driven by the assessment process.

a. Degree Curriculum and Program Quality

Instructional Methods

The AGBS program faculty employ a variety of pedagogical practices to facilitate student learning in the program. All classes are taught in a face-to-face format. The faculty employ a wide variety of techniques to ensure students obtain content knowledge and transferrable skills consistent with the mission of the program. In addition to traditional lecture presentations, students are required to collect and analyze data, communicate effectively in an oral or written format, conduct research projects and simulation studies. Experiential learning opportunities (e.g., required internship) give students opportunities to learn outside the classroom and afford them an opportunity to apply concepts learned in the classroom.

Curriculum and Learning Environment

The AGBS program engages in periodic assessment of the program goals and learning outcomes (PLOs). The program has four program goals and ten objectives to help meet its mission.

Goal 1: Communication Skills.

Objective 1a. Oral Communication: Students have the ability to present ideas, theories and other research orally.

Objective 1b. Written Communication: Students can produce focused, coherent, and grammatically correct written communications, as well as electronic display, to agribusiness managers.

Goal 2: Critical Thinking Skills.

Objective 2a. Quantitative Skills: Students can design a quantitative approach to solving an agriculture industry problem.

Objective 2b. Analytical Skills: Students have the ability to analyze agribusiness data and evaluate results.

Objective 2c. Ethical Reasoning: Students will be able to apply a range of ethical perspectives to dilemmas in the agriculture and food industries.

Goal 3: Knowledge of Regional Agriculture and Food Industry.

Objective 3a. Regional and Global Agriculture: Students demonstrate a practical understanding of regional and global production and business operations in agribusiness using basic economic principles.

Objective 3b. Experiential Learning: Students complete an experiential learning internship within an agribusiness organization, to apply theory to practice.

Objective 3c. Careers: Students identify career paths available in the agriculture and food industries.

Goal 4: Application Skills.

Objective 4a. Decision Making: Students apply economic concepts and theory to decision making in agribusiness.

Objective 4b. Industry: Students are able to critically assess contemporary agricultural issues and trends.

Table 2 in Section C displays a curriculum mapping of required upper-level courses in the AGBS major to the program learning outcomes. The table indicates if the PLO is introduced (I), developed (D), or competence is demonstrated (C). The program requires some lower-level courses (e.g., Financial Accounting) that are not contained in Table 2. Students may take those courses at CSUB or at a community college, such as Bakersfield College, so assessing those courses would be difficult. Hence, the PLOs are assessed only in the courses that all majors must take at CSUB.

Student Learning and Success

Program learning goals and outcomes were assessed in the courses and years outlined in Table 4. Assessment artifacts included questions on exams, projects, and oral/written presentations. The artifacts were evaluated and analyzed to determine both student goal attainment and the effectiveness of current pedagogical methods. In cases where the target was not met, the program developed action plans to remediate the problem. In cases where the target was met, the program analyzed the results and applied those successful teaching methods to other courses. Each PLO was assessed twice during the pilot program. A brief summary of the assessment activities for each PLO is provided below.

1. Overall Program Goal

To work in collaboration with industry partners and other affiliates to increase the number of well-educated individuals who have the knowledge and skills necessary to contribute to the continued vitality and growth of the agriculture industry in the region.

The following table is a schedule of courses required for the major and their assessment cycle (in brackets).

Table 4 Curriculum Assessment Cycle

Required Upper-Level Courses	1. Communication Skills	2. Critical Thinking Skills	3. Knowledge of Regional Agriculture and Food Industry	4. Application Skills
AGBS 2510				
AGBS 3500	1a. (14-15)			
AGBS 3510				

AGBS 3520				
AGBS 3530			3a. (15-16)	4a. (17-18)
AGBS 3540		2b. (14-15)		
AGBS 3570		2a. (15 -16)		
AGBS 4860			3b. (17-18)	
ECON 3030				
ECON 3508				
ECON 4908	1b. (16-17)			4b. (16-17)
ERM 4110				
INST 4200				
PLSI 3648				
SCI 3329				

PLO 1: Communication Skills

This learning outcome was assessed in the program during the 2014-2015 academic year (AGBS 3500) and the 2016-2017 academic year (ECON 4908).

The oral communication requirement was assessed in AGBS 3500 through a group presentation of results from a simulation study conducted for the almond industry. Students were required to present the results of their activities and decisions at each step of the process, in addition to providing analysis of the decisions made by other groups. The target was that 75% of the student groups would earn a C or above based on an oral presentation rubric. Two instructors graded final project presentations using the presentation rubric. In order to ensure inter-rater reliability, the instructors had a brief norming session. Eighty percent (four out of five groups) scored at a B or higher level. Although students met the target, the instructors determined that students needed earlier and more frequent feedback on presentations to address some common issues, such as verbal pauses and lack of continuous audience eye-contact.

The written communication requirement was assessed in ECON 4908 using a research paper; students were given detailed directions and a grading rubric. The goal was to have 100% of the students score 3 or 4 (on a scale of 1-4) on all four sections of the grading rubric. The goal was not met as only 50% of the students met this standard. The action plan to address this shortcoming was to introduce Pearson Writer, an online writing feedback tool, into Agricultural Trade (AGBS 3530) in the spring semester of 2018.

PLO 2: Critical Thinking Skills

This learning outcome was assessed in the program during the 2014-2015 academic year (AGBS 3540) and the 2015-2016 academic year (AGBS 3570).

PLO 2b was assessed in AGBS 3540 through the introduction of a simulation project that required students in a group to make management decisions for a hypothetical farm. The students were given crop production data, weather forecasts, and USDA crop analyses and then asked to determine optimal planting decisions, the percentage

of the crop to hedge, and whether or not to purchase crop insurance. The outcomes were simulated, and results provided to the groups each week, who would then alter their decisions based on those results. The target was that 75% of the groups would earn a C or above on the grading rubric. Four out of five groups scored at a level higher than a C grade. The project (with some modifications) has been used each subsequent time the course has been taught and yielded similar results.

PLO 2b was assessed in AGBS 3570 through the inclusion of a question on the final exam that required students to calculate a number of measures of valuation for an agribusiness company. The target was that 75% of the students would earn a grade of C or greater on the quantitative question. The expectation was met as more than 75% of the students earned a grade of C or better. Although this goal was met, the faculty determined that we should continue to emphasize quantitative skills throughout student matriculation in the program.

PLO 3: Knowledge of Regional Agriculture and Food Industry

This learning outcome was assessed during the 2015-2016 academic year (AGBS 3530) and during the 2017-2018 academic year (AGBS 4860).

PLO 3a was assessed in ABS 3530 through the introduction of a “Sister City Project.” Students were asked to research an assigned Bakersfield Sister City (Amritsar, India; Wakayama, Japan; Cixi, China; Santiago de Queretaro, Mexico; Buncheon, Korea) and identify the process to trade a regional agricultural commodity with the sister city. The target was that 80% of the groups would score C or better on a rubric evaluating their application of trade theories to international trade. The target was exceeded as 100% of the groups scored a C or better on the rubric.

PLO 3b was assessed in ABS 4860 with a paper that required the students to reflect on their internship experience. In particular, they were asked to link their internship experience to the knowledge and skills they developed as they matriculated through the program. Expectations were that 100% of the students could effectively relate their program goals to their internship experiences. All students met the goal, but the program determined that the evaluation (currently done as a holistic review of the paper) should be based on a rubric designed specifically for the internship experience. The program faculty are currently developing such a rubric.

PLO 4: Application Skills

Assessment of this learning outcome took place during the 2016-2017 academic year (ECON 4908) and the 2017-2018 academic year (AGBS 3530).

PLO 4b was assessed in ECON 4908 through the introduction of an industry analysis project. The industry analysis was conducted through the use of a group project where students were asked to analyze the fruit and nut industry, using a newly acquired database (IBIS World). The goal was that 100% of the groups would score 80% or better on the project. This goal was met as all groups scored 80% or above on

the project. The action plan was to monitor and assess this objective in the normal assessment cycle.

PLO 4a was assessed in AGBS 3530 through a final exam question that required students to apply trade theory to a real-world problem related to agricultural trade. Expectations were that 75% of the students would be able to earn a grade of C on the multi-part question. Less than 75% of the students met the goal; this indicated the need to introduce more opportunities to apply economic theory to real-world problems in a variety of required courses. A project is to be introduced in AGBS 3540 in the spring semester that requires students to apply economic theory and quantitative techniques to agribusiness decisions, such as the adoption or replacement of equipment and financing options for assets (e.g., equipment, land purchases).

b. Curricular Changes

The AGBS program has made course-level changes due to formal and informal assessment activities during the pilot period, though no changes have been made at the program level (e.g., introduction of new courses) at this point. For example, formal assessments indicated that student writing skills did not meet expectations, so more frequent writing assignments with feedback were introduced in AGBS 2510. To provide further feedback, program faculty require the use of Pearson Writer (an online resource that provides writing and content feedback) in a number of additional courses, such as AGBS 3520 and AGBS 3540.

Upon the informal assessment of a successful simulation project introduced in AGBS 3500, program faculty teaching AGBS 3540 introduced a similar simulation exercise. While the original simulation project was specifically designed for AGBS 3500, faculty were able to design a different simulation project that accomplished similar goals, such as promotion of teamwork and application of economic theory to real-world management decisions.

At the beginning of the pilot program, AGBS majors were required to complete the capstone course along with Economics majors. There was a separate capstone for Environmental Resource and Management (ERM) majors. During the last four years, synergies between the AGBS and ERM majors became more apparent; therefore, AGBS and ERM majors were merged in a single capstone. In the combined capstone course, students complete a resource conservation project for the Natural Resource Conservation Service (NRCS). Students conduct analyses of resource concerns on behalf of the NRCS for local farmers seeking financial and technical assistance from the NRCS. Over the last four years, students have helped over a dozen farmers receive financial and technical assistance from the NRCS to conserve natural resources on their farms. The AGBS majors gain through this experiential learning by applying knowledge gained in the classroom. The NRCS benefits by receiving much needed assistance in processing the many applications for their expertise.

c. Student Placement

The AGBS program has a very successful student placement record. Of the more than forty degrees to have been awarded (eleven with a BS in AGBS and the rest with a concentration in AGBS), almost all of the graduates have been able to find employment upon graduation. Some even managed to find employment during their final semester at CSUB. Here are some example placements:

Name	Graduation Year	Company
Tyler Cottrell	Spring 2013 (Concentration)	Grapeman Farms
Cindy Palacios	Spring 2015 (Concentration)	Wonderful Pistachios & Almonds
Ray Solorio	Spring 2016 (BS AGBS)	Wonderful Orchards
Katie Verhoef	Spring 2017 (BS AGBS)	Grimmway Farms
Taylor Grove	Spring 2018 (BS AGBS)	Driscoll's

d. Student Scholarship

A few students have worked with program faculty on research projects, such as the investigation of impact of tariffs on Kern County agriculture. Some students have also helped program faculty with data analysis.

e. Stakeholder Assessment

Students: As part of this program review, a student satisfaction survey was administered to AGBS majors. Of the sixty-six current majors, seventeen (25%) completed the survey. The primary questions revolved around resources (i.e. library, faculty, etc) and components of the curriculum (i.e. internship). Survey results are reported in Appendix E. The analysis of this survey reveals the following: (i) all students find the academic advisors to be helpful; (ii) only one respondent (6%) found the teaching within the program to be not effective; (iii) twenty-four percent (4 respondents) found teaching outside the AGBS program to be not effective; (iv) all respondents agreed that the program faculty were accessible and supportive; (v) majority of the respondents found the courses reasonably matched the program goals; (vi) all of the respondents thought the internship experience had some value for their learning.

Alumni: Over the course of the pilot there have been eleven graduates of the BS in AGBS program. The alumni were contacted to provide feedback about the program, specifically what they found most useful in their careers and any suggested improvements to the program. The feedback was overwhelmingly supportive of the program, especially its applied nature. Alumni appreciated having practitioner instructors for many of the courses. They felt this gave them insight in to industry employment. They also appreciated the networking opportunities through guest lecturers visiting their classes. Finally, the alumni felt that the internship requirement was crucial to their education. Many of them were able to convert their internship opportunities in to their current full-time employment.

Employers: Letters of support for the AGBS program from selected employers whom have hired AGBS students is included in Appendix F. They all convey the value added by AGBS graduates specifically to their organizations and the regional agriculture industry in general. Letters are included from private companies, such as Wonderful Orchards and Tasteful Selections, as well as public entities such as Natural Resource Conservation Service. A letter from one of the program adjunct faculty, Abran Padilla, who has hired and helped connect many of our students with employment opportunities is also included.

All of the above letters speak to the value of having an AGBS program at CSUB and the contributions it makes to the regional agricultural industry.

2. Evidence of Faculty and Program Effectiveness

The AGBS program has been successful in graduating students with a strong set of marketable skills and a knowledge of many of the aspects of the agriculture industry. The faculty provide a theoretical foundation of study, but also bring their experience in the industry to the classroom. They provide networking opportunities to the students that help many obtain internships and jobs even before they graduate. Our graduates have been hired by many agribusinesses in the area, such as Wonderful, Sun World, Grimmway, and Tasteful Selections. Graduates have also been hired by financial institutions, such as Farm Credit West. The design of the program, with its emphasis on quantitative skills, applications of theory to real-world issues, and critical/analytical thinking, successfully prepares our students for internship and employment opportunities.

a. Measures of successful degree completions

The AGBS pilot program was proposed with the intention of having approximately 20 majors and 5 graduates per year at the end of the five-year pilot program. As evidenced in Table 5, the program has exceeded these initial expectations.

Table 5 Program Profile and Graduation Measures

BS Agricultural Business Program Profile						
	2013-14	2014-15	2015-16	2016-17	2017-18	Average
Majors (Fall)	3	7	14	35	50	21.8
Degrees Awarded	0	0	2	2	7	2
Age Profile						
19 and Younger	100%	43%	29%	49%	42%	44%
20 to 24		57%	64%	40%	38%	42%
25 and Older			7%	11%	20%	11%
Gender						
Male	100%	71%	71%	66%	64%	67%
Female	0%	29%	29%	34%	36%	33%
Ethnicity						
American Indian/ Alaskan				6%	6%	5%
Caucasian or White		43%	36%	26%	24%	27%
Hispanic/Latino	100%	57%	57%	60%	60%	61%
Two or more races			7%	3%	6%	5%
Unknown race				6%	4%	2%
Time-To-Degree (TTD)						
First-time Freshmen						4.76
LD Transfer Students						0.00
UD Transfer Students						1.81

The above outcomes can be attributed to the program faculty's efforts in recruiting and retaining students. Program faculty make regular recruitment visits to Bakersfield College and do all the program advising. As can be seen in the above table, the time-to-degree (TTD) of the first-time freshmen is in line with that of BPA (4.44)

and the university (4.74). The program intends to decrease the TTD by ensuring all students are continued to be advised by program faculty and take courses, which are offered on a biennial rotation, as scheduled. Since the curriculum requires students take a few courses at a community college, coordination of course offerings with the same is also an important factor in TTD.

b. Other CSUs offering similar programs

There are currently five other CSU campuses that offer a baccalaureate degree in agricultural business. They are as follows: CSU Chico, CSU Fresno, Cal Poly State University-Pomona, Cal Poly State University-SLO, and CSU Stanislaus.

CSU Chico

Chico's Bachelor of Science in Agricultural Business requires lower division courses in the following areas: Intro to Agricultural Business and Economics; Farm Accounting; Ag Accounting; General Chemistry; Principles of Macroeconomics; Intro to Animal Science, or Intro to Plant Science, or Intro to Soil Science.

The upper division course requirements are in the following areas: Ag Production; Ag Marketing; Ag Management; Ag Economics; Ag Policy; Ag Finance; Ag Ecology; and an internship. The CSUB program is very similar in its upper division requirements, with the exception of Ag Production and Ag Ecology. CSUB AGBS instead requires focus on Ag Trade and Ag Accounting, two areas very relevant to the agribusiness sector in the service region. Total requirements for the major equate to 83 semester units. CSUB's program requires 72 units or less, yet covers essentially the same core competencies, thereby providing comparable skills and knowledge.

CSU Fresno

The BS in Agricultural Business at CSU Fresno has core undergraduate courses in agricultural economics with basic business management and agricultural science foundation courses. The major requires 62 semester units.

The agricultural foundation degree component requires three lower division agricultural science courses from a selection of animal science, food science, plant science, soil science, or mechanized agriculture. CSUB's program requires the same from a community college. CSUF requires six lower division business management courses, primarily prerequisites to the core upper division agricultural business courses, from the following areas: law, accounting, statistics, economics, information systems, etc. These areas are also covered either in the CSUB AGBS major or in the prerequisites taken at a community college. The upper division core agriculture business classes at CSUF cover the following areas: agricultural management, agricultural finance, agricultural and food policy, global agribusiness management, agricultural market analysis, and a capstone course. The CSUB AGBS major also covers the same areas, with the exception of a global agribusiness management course. Instead, the program has a general agribusiness management course, and a course in agricultural trade, as well as an additional agricultural finance course.

Cal Poly – Pomona

The College of Agriculture offers a BS in Agribusiness and Food Industry Management. Requirements for the major total 105 quarter units. The following areas are included in the core courses for the major: Agricultural Accounting, Agricultural Management, Food Politics, Agricultural Finance, Data Analysis, Personnel Management and Leadership skills. Elective courses cover areas of food industry management or animal industry. Given that Cal Poly Pomona is an 'ag school', the broader content areas have more specific and numerous course options. They also have access to specialize equipment and laboratories for all aspects of agriculture, from food production to retail.

Cal Poly - SLO

Required courses for the major sum to 113 quarter units and cover the following areas: Agricultural Accounting, Marketing, Economics, Policy, Sales; Animal Science; Agronomic Science and Agribusiness electives. As with Pomona, Cal Poly San Luis Obispo is an 'ag school' and as such has the capacity to offer multiple electives, full-time agriculture faculty, specialized facilities, as well as specific training, something CSUB's AGBS program is not intended to duplicate.

CSU Stanislaus

The agriculture degree offered by CSU Stanislaus is a multidisciplinary Bachelor of Arts in Agricultural Studies. One of the possible concentrations closely related to CSUB's AGBS program is the concentration in Agricultural Economics. The degree requires 30 semester units of lower-division agriculture courses (most to be completed at a community college) from: Animal Science, Plant Science, Soil Science, Ag Economics, and Ag computers. The major also requires seven courses from the following areas: writing proficiency; methodology/ tech of ag; physical/bio aspects of ag; business/econ of ag; ag policy; ag labor; and an internship. The degree offered is broader than any of the other CSU campus offerings discussed here.

At CSUB, students can also earn a concentration in Agribusiness within the BS in Business Administration (BSBA), that combines the common requirements of a degree in business with coursework that emphasizes an understanding of the unique institutional and managerial challenges facing Agribusiness firms.

The concentration courses are also part of the BS in AGBS curriculum are taught by industry professionals and CSUB faculty. They include the following courses: Agricultural Accounting; Agricultural Economics; Agricultural Finance or Agricultural Trade; Agricultural Law; Agricultural Management; and Agricultural Marketing.

c. Faculty Scholarship

The core program faculty are Drs. John Deal and S. Aaron Hegde, both of whom have academic training at the doctorate level in agricultural economics. In addition to their service to the program, they remain active in scholarship, especially as it relates to the

field of agriculture. The following select list of activities cover the period during this program review (2014-19).

John Deal

Selected Peer Reviewed Publications

1. John Deal and Aaron Hegde. (2015). "The Development of Transferable Skills in a Variety of Economics Classes," *International Research in Education*, 3(2), 145-157.
2. Aaron Hegde and John Deal. (2014). "Areca Nut Farming in Southern India: A Case Study," *International Journal of Business and Social Science*, 5 (10). 40-45.

Selected Conference Presentations

1. "Kern County Agriculture: A Case Study" - *Selected Paper at the Western Economic Association International Meetings, June 2018, Vancouver, British Columbia.*
2. "Using an Inter-Disciplinary Approach to Affect Behavior for Sustainable Management of Resources" - *Selected Paper at the Association of Environmental Studies and Sciences, June 2016, Washington, D.C.*
3. "The Development of Transferable Skills in a Variety of Economics Courses" - *Selected Paper at the Western Economic Association Meetings, July 2015, Honolulu, HI.*
4. "Income Inequality and Air Pollution: A County-Level Analysis" - *Selected Paper at the Midwest Economic Association Meetings, March 2015, Minneapolis, MN.*

S. Aaron Hegde

Selected Peer Reviewed Publications

1. John Deal and Aaron Hegde. (2015). "The Development of Transferable Skills in a Variety of Economics Classes," *International Research in Education*, 3(2), 145-157.
2. Aaron Hegde and John Deal. (2014). "Areca Nut Farming in Southern India: A Case Study," *International Journal of Business and Social Science*, 5 (10). 40-45.

Selected Conference Presentations

1. "Kern County and Agricultural Exports" - *Selected Paper at the Western Economic Association International Meetings, June 2018, Vancouver, British Columbia.*
2. "Using an Inter-Disciplinary Approach to Affect Behavior for Sustainable Management of Resources" - *Selected Paper at the Association of Environmental Studies and Sciences, June 2016, Washington, D.C.*
3. "The Development of Transferable Skills in a Variety of Economics Courses" - *Selected Paper at the Western Economic Association Meetings, July 2015, Honolulu, HI.*
4. "Real-world Simulations in Agriculture Classes: A Case Study" – *Panel Presentation Association of Environmental Studies and Sciences, June 2015, San Diego, CA*

3. Evidence of Program serving the community

a. Applied Learning

The AGBS curriculum requires students complete an internship in the agriculture industry. The internship experience is designed to enhance knowledge of the regional agriculture and food industry, as well as reinforce skills gained through the curriculum. Typically, students find internships with local businesses through a career fair hosted by the program, faculty contacts, or through their own efforts. At the conclusion of this experience, students are required to write a reflective paper addressing program goals 3 and 4 (see pages 15 and 16). Many students have used these opportunities to gain employment upon completing the program.

b. Student Recruitment

Professional careers in the food and agricultural sectors of the Central Valley are primarily held by non-Hispanics, most of who get their academic training in advanced skills and knowledge from extra-regional agricultural schools such as California Polytechnic University, San Luis Obispo and Fresno State University. Many Hispanic students in the CSUB service area are unable to attend these institutions due to financial, geographic, academic or cultural barriers. There are no four-year programs within the region that prepare students for such professional careers. One of the goals of the AGBS program is to offer this agricultural major to help overcome those barriers faced by Hispanic and other place-bound students in the CSUB service region. As such, one of the recruitment efforts involves Drs. Deal and Hegde regularly visiting agriculture classes at Bakersfield College to promote the CSUB AGBS degree.

c. Faculty Recruitment

The faculty teaching in the program (courses offered directly by the program) are limited to those working in the industry or the regular department faculty, such as Drs. Deal and Hegde. As previously identified, many of the professionals working in the regional agriculture industry, especially at higher management levels do not necessarily reflect the diversity of the community. A related objective of the program is to be able to recruit previous graduates of the program to teach within it.

E. Evidence of Program Viability and Sustainability

1. Demand Trends and Need for Program

The Agricultural Business Program supports a BS degree in Agricultural Business as well as a concentration within the BS in Business Administration. Trends for the program are displayed in Figure 1 below. As can be seen below, the number of students declaring AGBS as their major (BS AGBS) has been increasing exponentially, from a low of 2 during the 2013-14 academic year to a high of 50 in the 2017-18 academic year. As of Fall 2018, there were 66 majors. While the growth in the AGBS concentration is not at the same pace, the number of students has held relatively steady between 30 and 40 students.

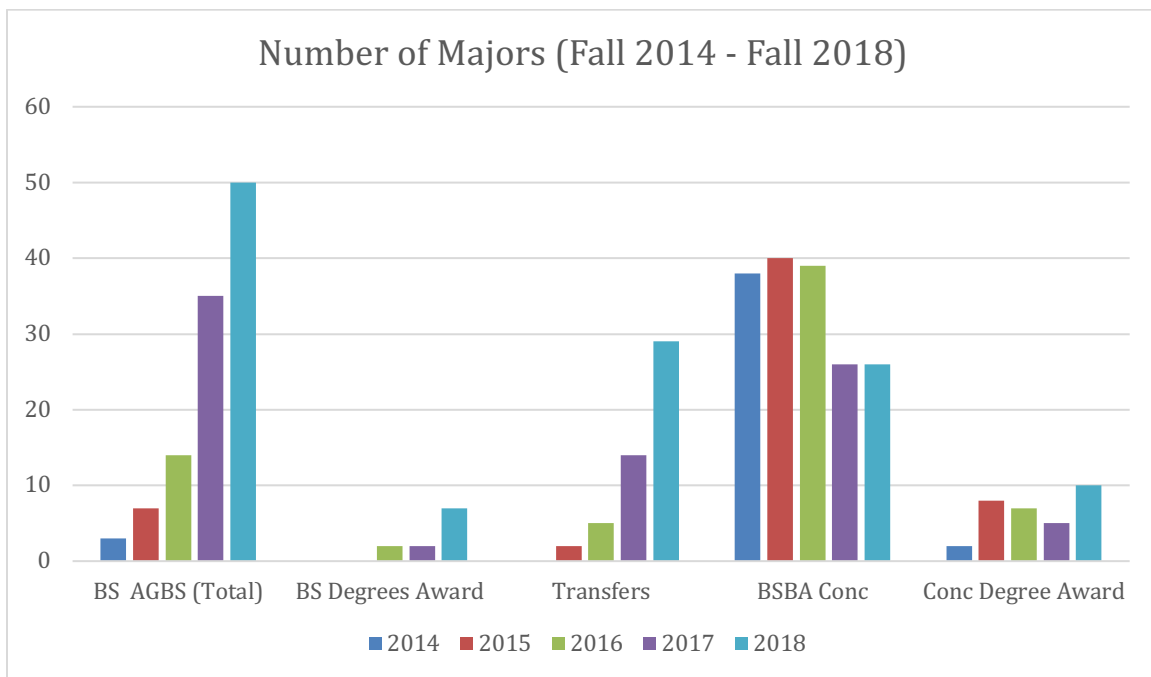


Figure 1 Number of majors

The BS AGBS degree was primarily designed as an opportunity for students completing an associate's degree from a community college to earn a four-year degree. While majority of the AGBS majors to date have been students native to CSUB, the proportion of transfer students has risen steadily over the last couple of years.

The above numbers have far exceeded the expectations for the pilot program, which were to have a total of twenty majors by the end of the pilot period, with a total of six degrees awarded. As of Fall 2018, current number of majors are sixty-six, with just over a half being transfer students. For the academic year, 2018-19, it is anticipated that approximately twenty degrees will be awarded.

Professional trends

The USDA forecasts an estimated 60,000 jobs for those with baccalaureate or higher degrees in food, renewable energy, and environmental specialties between 2015 and 2020. Projections indicate that 48% of jobs are expected to be in management and

business. The educational problem in the region had been an absence of agriculture major that trains graduates to be competitive in increasingly technology-based agriculture and food sectors. Despite the significance of agriculture to the local economy, CSUB had lacked a major in the food and agricultural disciplines. One of the frequent concerns raised by agricultural employers was the lack of local graduates. Agribusiness graduates from colleges outside the region tend to have shorter tenure with the regional agribusiness employers, resulting in loss of trained human capital. The AGBS major addresses the direct needs of local and regional agriculture employers seeking well-trained local graduates with agriculture business degrees. Our graduates are already filling many of the occupations expected to see the most employment growth, such as farm labor specialist, financial analyst, agricultural loan officer, and marketing specialist.

Offering a bachelor's degree in Agricultural Business within our service region, which is one of the world's largest and most technologically advanced agricultural production areas, meets local community workforce needs. BPA is committed to offering academic programs that address the workforce needs of this industry vital to our region's economic development. More than forty percent of the jobs in the multi-billion dollar agriculture industry are business-related. Given the size of our region's food industry and the occupational composition of jobs, student and industry demand for an academic program in agribusiness is strong and sustainable.

2. Faculty Resources

The Agricultural Business program operates successfully with very few dedicated resources. The Program Director receives three (3) WTUs of reassigned time to help administer the program. In addition, industry experts are hired as part-time faculty for instruction within the program (see Appendix for their resumes). Given the pattern of course offerings – two per semester – the program requires approximately \$4,500 per semester in instructional costs. The following lists the approximate faculty costs for an academic year for the AGBS program:

Program Director Reassigned Time (3 WTUs).....	\$4,500 ¹
Part-time Instructors (2 per year).....	\$9,000
Total Annual Cost.....	\$13,500

Drs. Deal and Hegde teach for the AGBS program as part of their regular teaching load within the Department of Economics. Major advising is also conducted by the faculty within the department.

The Cost per FTES provided by the Institutional Research Planning and Assessment Office (IRPA) is aggregated for the Department of Economics. Data disaggregated to the AGBS program is not available. However, the cost per FTES for the Department of Economics is \$2,683 (2013-18 five-year average), which is lower than the school average - \$3,064 (2015-18 three-year average) and the university average - \$3,065 – for the same period.

¹ Calculated at replacement cost to hire a part-time instructor

3. Financial Resources

None. These are centralized at the school level.

4. Supplies, Equipment, and Other Resources

No supplies or equipment are needed. These are centralized at the school level.

The B.S. in Agriculture Business bootstraps on the library collections for business administration, public administration, communications, economics, and other social sciences. Additional library resources beyond those required to support growth of the above- mentioned programs are not required. The business librarian, Johanna Alexander, provided a letter of support stating the same at the time of the pilot program proposal. This requirement has not changed in the intervening five-year period.

5. Oversight and Management of Resources

Centralized at the school level.

F. Summary Reflections

Program Strengths

Program Features

The biggest strength of the CSUB AGBS program, especially when compared to similar programs in the CSU, is its applied nature. While some courses are taught by academic faculty with training in agricultural economics, a majority of the courses are taught by practitioner instructors. This gives the students a glimpse into the industry, especially when those courses are augmented by guest lectures by industry professionals.

One of the other strengths of this program is the broad overview of the agriculture industry provided by the curriculum. The core courses offered by the program cover the breadth of accounting, finance, trade, law, management, and marketing in the agriculture industry. These are augmented by agricultural science foundational courses offered by community colleges, especially Bakersfield College, with decades of experience offering courses in fields such as crop science, soil science and animal science.

It is to capitalize on such efforts that the CSUB AGBS program was initially created as a '2+2' bachelor's degree. The intention was that students obtaining their associate's in agricultural business at a California community college, would transfer to CSUB to complete a four-year degree. CSUB offers such a pathway to students from regional colleges such as Bakersfield College (BC) and Porterville College. Partnering with such institutions helps CSUB meet the requirements of California Senate Bill 1440 with regards to degree completion.

Meeting Community Needs

Prior to the establishment of the AGBS program, many members of the agriculture community had approached the university requesting such a program. Before the AGBS program was established, regional employers had to recruit graduates from agriculture schools outside the region. After having invested in their training, many of those employees left the area for other opportunities. Hence the desire for these employers to recruit locally, a need met by the CSUB AGBS program.

Graduates and future graduates of the program have been able to find gainful employment with many of the leading regional agricultural employers. Much of this takes place through the annual career fair (Growing Opportunities Career Fair) held every spring semester for the last seven years. The career fair provides both permanent careers and internship opportunities. A number of the internship opportunities eventually led to permanent positions within the same firms. Annual student attendance at this career fair is well over two-hundred, with approximately thirty to forty participating employers.

Assessment Process

The AGBS program has developed program and student learning objectives that reinforce the University learning outcomes and are consistent with the mission of the

program. The curriculum is designed to provide students with a breadth of knowledge of the agriculture industry and a set of skills (e.g., communication, critical thinking) that are demanded by employers in the area. The learning goals are introduced, developed, and attained throughout the curriculum. Student attainment of the goals is assessed through a systematic and well-designed assessment process. The results are used to determine “closing the loop” activities when students fail to meet expectations or to inform program faculty of successful practices that should be continued or adopted in other courses.

During the review period, each PLO was assessed twice, and changes were made to address any shortcomings identified. For example, written communication skills were found to not meet expectations when assessed in ECON 4908 in 2016-17. While this was not a surprise, as many CSUB students lack effective written communication skills, the program faculty determined that students needed more frequent feedback to improve those skills. Pearson Writer was introduced in a variety of courses to provide additional feedback at multiple points as students matriculate through the program. The simulation project conducted in AGBS 3500 was incorporated into AGBS 3540 after program faculty determined that the project enhanced student critical thinking skills.

The AGBS program has developed a 5-year assessment plan beginning in the academic year 2018-19. Unlike previous assessment activities, where one PLO was assessed in one specific course during a semester, the current assessment plan calls for assessing multiple learning outcomes with a single artifact. For example, AGBS 3540 requires students to conduct an analysis of business decisions (e.g., leasing land or equipment; replacement of equipment) and convey their decisions and rationale for those decisions in a business memo. These memos will be evaluated for program objective 4a (Decision Making), 1b (Written Communication), and 2a (Quantitative Skills) through an appropriate rubric. This approach will allow program faculty to more easily assess PLOs on a more frequent basis. While previous artifacts have been assessed through a combination of rubrics and traditional grading practices (i.e., percentage of allotted points earned on artifact), the program will adopt rubrics specifically designed to match the program learning goals and objectives.

Program Weakness

The program was initially designed to be a degree completion for students with an associate’s degree in agricultural business from a community college. However, in the initial phases of the program, majority of the students were native to CSUB, altering the expected pathway to the program. Having more native students in the major caused some unforeseen challenges, in particular, availability of courses at Bakersfield College for the native CSUB student. Many of the courses required to be taken at Bakersfield College, such as Soil Science and Crop Science, are very popular and generally reach enrollment capacity before CSUB students get a chance to enroll. This has led to some situations where students take these foundational courses well in to their junior and often senior years at CSUB. The program is in the process of facilitating a more seamless experience for such students. If a tenable solution is not

reached, this impediment may result in some delayed graduations, though none has occurred to date.

Program Opportunities

Better collaboration with the BC agriculture department with regards to course schedules may minimize any impediments for CSUB AGBS majors. There needs to be some mechanism whereby a portion of the class capacity is reserved exclusively for CSUB students. The program has offered CSUB alternatives to the required BC courses for native CSUB students to ensure timely graduation.

The proposed BC/CSUB potential partnership would go a long way towards addressing this shortcoming within the program. Through this potential partnership, BC would offer select courses on the CSUB campus. The BC students enrolled in these courses would be those who are a part of the ADT system (AGBS is one such program). Alternatively, CSUB students would be able to enroll in these courses, thus alleviating the bottleneck on the BC campus for courses such as Soil Science.

Marketing of the AGBS program has been limited to recruitment visits to BC and word of mouth on the CSUB campus. More resources can be spent on an active marketing campaign. Other opportunities to recruit more students include a potential Ag Ambassador program, where current students and alumni visit local high schools to inform students of opportunities to study agriculture at CSUB.

Another potential opportunity is for the AGBS program to be endowed by the local agriculture industry, similar to the ERM program. Endowing the program gives it the resources needed to continue to offer a high-quality educational experience to students. These funds would also insulate the program from any economic downturns.

Program Challenges

Currently the program offers the core upper-division courses on a biennial rotation. As the number of majors increase, there may be a need to offer these on an annual basis. The average enrollments for AGBS courses over the past academic year (2018-19) has been over 65. If this growth continues, in the very near future these courses will need to be offered more frequently. A potential challenge created by more frequent offering is the need for a deeper pool of practitioner instructors from the agriculture industry. Many of the current instructors are high-level executives within their organizations with limited free time to teach for the program. Expecting them to be available annually would be a challenge.

II. Program Plan, 2019-20 to 2026-27

Mission: The mission of the AGBS program is to work with industry leaders to educate, develop, and train students to enter a dynamic agriculture industry with critical thinking and communication skills, a breadth of knowledge applicable to the timely needs of the industry, and with a level of experience and awareness of the workings of the industry. The program will fulfill this mission with the following vision.

Vision: The AGBS program will be recognized in Kern County as the quality provider of graduates with intellectual breadth, a good work ethic, and data-driven analyst skills for the agriculture industry. The program faculty will be intellectually active and engage professionally with local stakeholders in the agriculture industry. The resources necessary to expand opportunities for students and provide greater services for the regional agriculture community will be sought.

Strategic Plan, 2019-20 through 2026-27

A. Curricular Planning

Continue to offer a strong undergraduate major through

1. Annually plan and carry out learning outcomes assessment activities and meet campus deadlines for updating TaskStream.
2. Carry out an outreach plan to recruit majors, including: (i) continue to make presentations in classes at BC; (ii) administer an alumni questionnaire and add an alumni career profiles section to website; (iii) strengthen relationships with agriculture faculty at feeder community colleges and inform them of department's vision; (iv) establish relationships with local high school agriculture programs;
3. Develop an Ag Ambassador program – recruit majors to visit area high school agriculture programs and promote the AGBS major;
4. Develop and strengthen relationship with employers with regards to internships and career opportunities for students;
5. Determine via survey the scheduling preferences of majors;
6. Develop an introduction to the major course;

B. Program Resource Allocation

Revisit resource allocation so as to continue offering a sustainable program:

1. As the major continues to grow, increase the frequency of core course offerings from biennial to an annual basis
2. Involve adjunct faculty in the assessment process
3. Evaluate the ideal class capacity for pedagogy – current class size for core classes exceeds sixty. Consider a lower course size of forty-five
4. Develop a deeper pool of practitioner instructors to meet the growing demand of course offerings
5. Support program faculty in applied research activities to provide extension services to the regional agriculture industry

C. Outside Program Resources

1. None

D. Resource Requests

As the program continues to grow, there will be an increasing need for external resources in order to offer a high-quality program.

1. Monies for adjuncts – For the program to offer core courses on an annual rather than a biennial basis, more resources need to be dedicated to hiring additional practitioner instructors. This would double the amount currently spent on instructional faculty, from approximately \$9,000 to \$18,000. However, this would be offset by the increased FTES.
2. Promotion of program funds – More funds would be needed to institute the Ag Ambassadors program, promotional material, building relationships with external stakeholders, and general recruitment efforts. Approximate cost per year \$2,000.
3. Endowment – To facilitate future needs of the program, it would be best to endow the program, similar to the Occupational Safety and Health Management Concentration (endowed by Aera Energy). A large regional agriculture business, such as Wonderful, could donate a large sum to the program.
4. Program activities – Other program activities such as the Growing Opportunities Career Fair need supporting funds on an annual basis. The annual cost of hosting this career fair is approximately \$3,000.

If the program continues to grow at its current pace, there would be a need for the University to commit to increasing support by approximately \$14,000 per year.

III. Appendices

A. Academic Program Profile

Economics, Environmental Resource Management, Agricultural Business & Applied Studies

IV. Majors in the Program	2013-14	2014-15	2015-16	2016-17	2017-18	5yr Avg
MAJORS (Fall term)						
Undergraduate Students (seeking first BS)	158	180	192	160	151	168.2
Postbac Students (seeking second BS)	1	4	3	0	0	1.6
Postbac Students (seeking credential or no degree)	0	0	1	0	0	0.2
Graduate Students	0	0	0	0	0	0.0
Total Majors	159	184	196	160	151	170.0
Program's Proportion of All CSUB Declared Majors						
Undergraduate Students	2%	2%	2%	2%	2%	2%
Postbac Students (seeking second BS)	4%	17%	16%	0%	0%	8%
Postbac Students (seeking credential or no degree)	0%	0%	0%	0%	0%	0%
Graduate Students	0%	0%	0%	0%	0%	0%
AGRICULTURAL BUSINESS						
Undergraduate Students (seeking first BS)	3	7	14	35	50	21.8
Postbac Students (seeking second BS)	0	0	0	0	0	0.0
Postbac Students (seeking credential or no degree)	0	0	0	0	0	0.0
Graduate Students	0	0	0	0	0	0.0
Total Majors	3	7	14	35	50	21.8
Program's Proportion of All CSUB Declared Majors						
Undergraduate Students	0%	0%	0%	0%	1%	0%
Postbac Students (seeking second BS)	0%	0%	0%	0%	0%	0%
Postbac Students (seeking credential or no degree)	0%	0%	0%	0%	0%	0%
Graduate Students	0%	0%	0%	0%	0%	0%

Economics, Environmental Resource Management, Agricultural Business & Applied Studies

	2013-14	2014-15	2015-16	2016-17	2017-18	5yr Avg
AGRICULTURAL BUSINESS						
Undergraduate Students (seeking first BS)						
Main Campus	3	7	14	35	50	21.8
Antelope Valley Campus	0	0	0	0	0	0.0
Total Undergrad Majors	3	7	14	35	50	21.8
Graduate Students						
Main Campus	0	0	0	0	0	0.0
Antelope Valley Campus	0	0	0	0	0	0.0
Total Graduate Majors	0	0	0	0	0	0.0
Postbac (2nd Bachelors)						
Main Campus	0	0	0	0	0	0.0
Antelope Valley Campus	0	0	0	0	0	0.0
Total Postbac Majors	0	0	0	0	0	0.0
Postbac (2nd Credential/No Degreee)						
Main Campus	0	0	0	0	0	0.0
Antelope Valley Campus	0	0	0	0	0	0.0
Total Postbac Majors	0	0	0	0	0	0.0

Economics, Environmental Resource Management, Agricultural Business & Applied Studies

	2013-14	2014-15	2015-16	2016-17	2017-18	5yr Avg
AGRICULTURAL BUSINESS						
Undergraduates (seeking first BS)						
Continuing Students	2	4	8	11	28	10.6
New First Time Freshmen	1	1	3	15	7	5.4
New Transfer Students	0	2	3	9	15	5.8
Returning Students	0	0	0	0	0	0.0
Transitory Students	0	0	0	0	0	0.0
Total Undergrad Majors	3	7	14	35	50	21.8
Postbac (2nd Bachelors)						
Continuing Students	0	0	0	0	0	0.0
New First Time Students	0	0	0	0	0	0.0
Returning Students	0	0	0	0	0	0.0
Total Postbac Majors	0	0	0	0	0	0.0
Postbac (Credential/No Degree)						
Continuing Students	0	0	0	0	0	0.0
New First Time Students	0	0	0	0	0	0.0
Returning Students	0	0	0	0	0	0.0
Transitory Students	0	0	0	0	0	0.0
Total Postbac Majors	0	0	0	0	0	0.0
Graduate Students						
Continuing Students	0	0	0	0	0	0.0
First Time Students	0	0	0	0	0	0.0
Returning Students	0	0	0	0	0	0.0
Total Graduate Majors	0	0	0	0	0	0.0

Economics, Environmental Resource Management, Agricultural Business & Applied Studies

V. Degrees Awarded in the Program	2013-14	2014-15	2015-16	2016-17	2017-18	5yr Avg
DEGREES BY LEVEL (CY)						
First Bachelors	39	38	55	45	37	43
Second Bachelors	0	0	2	0	1	1
Graduate Students	0	0	0	0	0	0
Total Degrees Awarded	39	38	57	45	38	43
Program's Proportion of All CSUB Degrees Awarded						
Undergraduate Degrees (First BS)	3%	3%	3%	3%	2%	3%
Second Bachelors	0%	0%	11%	0%	3%	3%
Graduate Degrees	0%	0%	0%	0%	0%	0%
Total Degrees Awarded	2%	2%	2%	2%	2%	2%
AGRICULTURAL BUSINESS						
First Bachelors	0	0	2	2	7	2
Second Bachelors	0	0	0	0	0	0
Graduate Students	0	0	0	0	0	0
Total Degrees Awarded	0	0	2	2	7	2
Program's Proportion of All CSUB Degrees Awarded						
Undergraduate Degrees (First BS)	0%	0%	0%	0%	0%	0%
Second Bachelors	0%	0%	0%	0%	0%	0%
Graduate Degrees	0%	0%	0%	0%	0%	0%
Total Degrees Awarded	0%	0%	0%	0%	0%	0%

*Continued on next page

Economics, Environmental Resource Management, Agricultural Business & Applied Studies

	2013-14	2014-15	2015-16	2016-17	2017-18	5yr Avg
AGRICULTURAL BUSINESS						
First Bachelors*						
Main Campus	0	0	2	2	7	2
Antelope Valley Campus	0	0	0	0	0	0
Extended University	0	0	0	0	0	0
Total Degrees Awarded to Undergraduates	0	0	2	2	7	2
Second Bachelors						
Main Campus	0	0	0	0	0	0
Antelope Valley Campus	0	0	0	0	0	0
Extended University	0	0	0	0	0	0
Total Degrees Awarded to Second Bachelors	0	0	0	0	0	0
Graduate Degrees						
Main Campus	0	0	0	0	0	0
Antelope Valley Campus	0	0	0	0	0	0
Extended University	0	0	0	0	0	0
Total Degrees Awarded to Graduates	0	0	0	0	0	0

Economics, Environmental Resource Management, Agricultural Business & Applied Studies

Time-to-Degree (TTD) by Program & School (in median years)

Based on a cohort of students who received degrees during the stated years. The process calculates the median number of years between the matriculation and graduation dates of the cohort. Outliers beyond 10 years are excluded from the calculation.

Important Note: These median rates are not comparable to previous years' average rates.

First-Time Freshmen
Lower Division Transfer Students
Upper Division Transfer Students
Graduate Students

Economics, Environmental Resource Management, Agricultural Business & Applied Studies					
4-year Median TTD 2013-14 to 2017-18			2-year Median TTD 2015-16 to 2017-18		
Economics	School BPA	University CSUB	Economics	School BPA	University CSUB
4.75	4.44	4.74	4.64	4.30	4.74
2.75	2.74	2.76	2.75	2.44	2.76
2.21	1.98	2.21	2.10	1.96	1.98
0.00	3.49	3.76	0.00	1.67	4.65

First-Time Freshmen
Lower Division Transfer Students
Upper Division Transfer Students
Graduate Students

Agricultural Business					
4-year Median TTD 2013-14 to 2017-18			2-year Median TTD 2015-16 to 2017-18		
Agricultural Business	School BPA	University CSUB	Agricultural Business	School BPA	University CSUB
4.76	4.44	4.74	4.76	4.30	4.74
0.00	2.74	2.76	0.00	2.44	2.76
1.81	1.98	2.21	1.81	1.96	1.98
0.00	3.49	3.76	0.00	1.67	4.65

Economics, Environmental Resource Management, Agricultural Business & Applied Studies
AGRICULTURAL BUSINESS

XIV. Student Diversity - Majors (Fall Term)		2013-14	2014-15	2015-16	2016-17	2017-18	5yr Avg	% (5yr avg)
UNDERGRADS (seeking first BA)		3	7	14	35	50	21.8	
Majors by Gender								
	Female	0	2	4	12	18	7.2	33.0%
	Male	3	5	10	23	32	14.6	67.0%
	Total	3	7	14	35	50	21.8	100.0%
POSTBAC (2nd Bachelors)		0	0	0	0	0	0.0	
Majors by Gender								
	Female	0	0	0	0	0	0.0	0.0%
	Male	0	0	0	0	0	0.0	0.0%
	Total	0	0	0	0	0	0.0	0.0%
POSTBAC (Credential/No Degree)		0	0	0	0	0	0.0	
Majors by Gender								
	Female	0	0	0	0	0	0.0	0.0%
	Male	0	0	0	0	0	0.0	0.0%
	Total	0	0	0	0	0	0.0	0.0%
GRADUATE STUDENTS		0	0	0	0	0	0.0	
Majors by Gender								
	Female	0	0	0	0	0	0.0	0.0%
	Male	0	0	0	0	0	0.0	0.0%
	Total	0	0	0	0	0	0.0	0.0%
Grand Total		3	7	14	35	50	21.8	

Economics, Environmental Resource Management, Agricultural Business & Applied Studies
AGRICULTURAL BUSINESS

XIV. Student Diversity - Majors (Fall Term, Cont.)		2013-14	2014-15	2015-16	2016-17	2017-18	5yr Avg	% (5yr avg)
Majors by Age Group (Undergraduate)								
	19 and younger	3	3	4	17	21	9.6	44.0%
	20-24	0	4	9	14	19	9.2	42.2%
	25-29	0	0	1	4	7	2.4	11.0%
	30-34	0	0	0	0	2	0.4	0.2%
	35-49	0	0	0	0	0	0.0	0.0%
	50 and over	0	0	0	0	1	0.2	0.1%
	Total	3	7	14	35	50	21.8	97.6%
Majors by Age Group (Postbac - 2nd Bachelors)								
	19 and younger	0	0	0	0	0	0.0	0.0%
	20-24	0	0	0	0	0	0.0	0.0%
	25-29	0	0	0	0	0	0.0	0.0%
	30-34	0	0	0	0	0	0.0	0.0%
	35-49	0	0	0	0	0	0.0	0.0%
	50 and over	0	0	0	0	0	0.0	0.0%
	Total	0	0	0	0	0	0.0	0.0%
Majors by Age Group (Postbac - Credential/No Degree)								
	19 and younger	0	0	0	0	0	0.0	0.0%
	20-24	0	0	0	0	0	0.0	0.0%
	25-29	0	0	0	0	0	0.0	0.0%
	30-34	0	0	0	0	0	0.0	0.0%
	35-49	0	0	0	0	0	0.0	0.0%
	50 and over	0	0	0	0	0	0.0	0.0%
	Total	0	0	0	0	0	0.0	0.0%

Economics, Environmental Resource Management, Agricultural Business & Applied Studies
AGRICULTURAL BUSINESS

XIV. Student Diversity - Majors (Fall Term, Cont.)

	2013-14	2014-15	2015-16	2016-17	2017-18	5yr Avg	% (5yr avg)
Majors by Ethnicity (Undergraduate)							
American Indian/Alaskan Native	0	0	0	2	3	1.0	4.6%
Asian	0	0	0	0	0	0.0	0.0%
Black or African American	0	0	0	0	0	0.0	0.0%
Hispanic/Latino	3	4	8	21	30	13.2	60.6%
Native Hawaiian or Other Pacific Islander	0	0	0	0	0	0.0	0.0%
White	0	3	5	9	12	5.8	26.6%
Two or More Races	0	0	1	1	3	1.0	4.6%
Declined/Unknown/Other	0	0	0	2	1	0.6	2.8%
Non-Resident Aliens	0	0	0	0	1	0.2	0.9%
Total	3	7	14	35	50	21.8	100.0%
Majors by Ethnicity (Postbac - 2nd Bachelors)							
American Indian/Alaskan Native	0	0	0	0	0	0.0	0.0%
Asian	0	0	0	0	0	0.0	0.0%
Black or African American	0	0	0	0	0	0.0	0.0%
Hispanic/Latino	0	0	0	0	0	0.0	0.0%
Native Hawaiian or Other Pacific Islander	0	0	0	0	0	0.0	0.0%
White	0	0	0	0	0	0.0	0.0%
Two or More Races	0	0	0	0	0	0.0	0.0%
Declined/Unknown/Other	0	0	0	0	0	0.0	0.0%
Non-Resident Aliens	0	0	0	0	0	0.0	0.0%
Total	0	0	0	0	0	0.0	0.0%

Economics, Environmental Resource Management, Agricultural Business & Applied Studies
AGRICULTURAL BUSINESS

XV. Student Diversity - Degrees (CY)

	2013-14	2014-15	2015-16	2016-17	2017-18	5yr Avg	% (5yr avg)
First Bachelors	0	0	2	2	7	2.2	
Degrees by Gender							
Female	0	0	0	1	4	1.0	45.5%
Male	0	0	2	1	3	1.2	54.5%
Total	0	0	2	2	7	2.2	100.0%
Second Bachelors	0	0	0	0	0	0.0	
Degrees by Gender							
Female	0	0	0	0	0	0.0	0.0%
Male	0	0	0	0	0	0.0	0.0%
Total	0	0	0	0	0	0.0	0.0%
Graduate Degrees	0	0	0	0	0	0.0	
Degrees by Gender							
Female	0	0	0	0	0	0.0	0.0%
Male	0	0	0	0	0	0.0	0.0%
Total	0	0	0	0	0	0.0	0.0%
Grand Total	0	0	2	2	7	2.2	

Economics, Environmental Resource Management, Agricultural Business & Applied Studies
AGRICULTURAL BUSINESS

XV. Student Diversity - Degrees (CY, Cont.)

	2013-14	2014-15	2015-16	2016-17	2017-18	5yr Avg	% (5yr avg)
Degrees by Age Group - First Bachelors							
19 and younger	0	0	0	0	0	0.0	0.0%
20-24	0	0	2	1	4	1.4	63.6%
25-29	0	0	0	1	2	0.6	27.3%
30-34	0	0	0	0	1	0.2	9.1%
35-49	0	0	0	0	0	0.0	0.0%
50 and over	0	0	0	0	0	0.0	0.0%
Total	0	0	2	2	7	2.2	100.0%

Economics, Environmental Resource Management, Agricultural Business & Applied Studies

AGRICULTURAL BUSINESS

XV. Student Diversity - Degrees (CY, Cont.)

	2013-14	2014-15	2015-16	2016-17	2017-18	5yr Avg	% (5yr avg)
Degrees by Ethnicity - First Bachelors							
American Indian/Alaskan Native	0	0	0	0	1	0.2	9.1%
Asian	0	0	0	0	0	0.0	0.0%
Black or African American	0	0	0	0	0	0.0	0.0%
Hispanic/Latino	0	0	2	1	2	1.0	45.5%
Native Hawaiian or Other Pacific Islander	0	0	0	0	0	0.0	0.0%
White	0	0	0	1	3	0.8	36.4%
Two or More Races	0	0	0	0	0	0.0	0.0%
Declined/Unknown/Other	0	0	0	0	1	0.2	9.1%
Non-Resident Aliens	0	0	0	0	0	0.0	0.0%
Total	0	0	2	2	7	2.2	100.0%

Economics, Environmental Resource Management, Agricultural Business & Applied Studies

AGRICULTURAL BUSINESS

XV. Student Diversity - Degrees (CY, Cont.)

	2013-14	2014-15	2015-16	2016-17	2017-18	5yr Avg	% (5yr avg)
Degrees by Minority Status - First Bachelors							
Under-Represented Minorities (URM)	0	0	2	1	3	1.2	54.5%
Not Under-Represented Minorities (non-URM)	0	0	0	1	3	0.8	36.4%
Declined/Unknown/Other	0	0	0	0	1	0.2	9.1%
Non-Resident Aliens	0	0	0	0	0	0.0	0.0%
Total	0	0	2	2	7	2.2	100.0%
Degrees by Minority Status - Second Bachelors							
Under-Represented Minorities (URM)	0	0	0	0	0	0.0	0.0%
Not Under-Represented Minorities (non-URM)	0	0	0	0	0	0.0	0.0%
Declined/Unknown/Other	0	0	0	0	0	0.0	0.0%
Non-Resident Aliens	0	0	0	0	0	0.0	0.0%
Total	0	0	0	0	0	0.0	0.0%
Degrees by Minority Status - Graduate Degrees							
Under-Represented Minorities (URM)	0	0	0	0	0	0.0	0.0%
Not Under-Represented Minorities (non-URM)	0	0	0	0	0	0.0	0.0%
Declined/Unknown/Other	0	0	0	0	0	0.0	0.0%
Non-Resident Aliens	0	0	0	0	0	0.0	0.0%
Total	0	0	0	0	0	0.0	0.0%
Grand Total	0	0	2	2	7	2	

* As of 2012-13, this figure includes those students awarded degrees in two majors at the time of graduation (double majors).

B. Catalog Copy

Department of Economics- Agricultural Business

School of Business and Public Administration

Program Director: John Deal

Department Office: Business Development Center, A149

Telephone: (661) 654-2181

Email: jdeal@csub.edu

Website: <http://www.csub.edu/bpa>

Faculty: M. Evans (Emeritus), R. Gearhart, A. Grammy (Emeritus), S.A. Hegde, N. Kamyabi, M. Malixi, N. Michieka

The Bachelor of Science in Agricultural Business prepares students for entry-level employment in the business management of the food and fiber sectors. Agricultural business includes the range of activities, from farming to retail sales of food (also known as 'farm to fork'), that is integral to modern food production.

The Bachelor of Science in Agricultural Business is a '2+2' program that combines core upper division undergraduate courses in agricultural business at CSUB, with lower division agricultural science and agricultural business foundation courses completed at a community college. This degree enables students to enhance their foundation agricultural courses, completed at a community college, with upper division knowledge and skills so as to better prepare them for entry-level management positions in the agriculture and food sector.

The upper division requirements provide knowledge and skills valued in all agricultural business (agribusiness) organizations, such as (1) communications skills, (2) quantitative and evaluative skills, (3) subject matter knowledge of agriculture and food sector, and (4) integrative problem solving and decision-making. The culminating experience for the major requires candidates to propose and carry out a project that applies competencies developed within the major.

Degree and program requirements: Admission to the BS Agricultural Business (BS AGBS) program requires the completion of one of the following: (1) a TMC in Agriculture Business from a California Community College; or (2) at minimum, the foundational agricultural science and agricultural business courses identified below.

Requirements for the Bachelor of Science in Agricultural Business

Total Units Required to Graduate	120 units
Major Requirements*	77 - 80 units
Foundation Courses I	12 - 13 units
Foundation Courses II	18 - 20 units
Upper Division	47 units
Minor Requirements	0 units
Free Units	8 - 11 units

GE Requirements **32 units**

Foundational Skills*:	9 units
LD Area B1 + B2*:	0 units
LD Area C1 + C2:	6 units
LD Area D* :	3 units
American Institutions:	6 units
SELF*:	0 units
FYS:	2 units
JYDR:	3 units
UD Theme (Need Area C):	3 units
GWAR*:	0 units
Capstone*:	0 units

*Some GE requirements are included in major;

A. Foundation Agricultural Courses I (Equivalentents may be taken at a Community College) - 12 or 13 units

1. AGBS 1010 Introduction to Soil Science **(Area B1)**
2. AGBS 1220 Agriculture Sales and Communication
3. AGBS 1250 Agriculture, Environment, and Society
4. AGBS 1030 Introduction to Plant Science OR
BIOL 2120 Introductory Biology - Plants (4 units) **(Area B2)**

B. Foundation Agricultural Courses II (Can be completed at a Community College or CSUB) – 18 or 20 units

1. AGBS 2900 Introduction to Agriculture (1 unit)
2. AGBS 1230 Agricultural Economics or ECON 2018 Principles of Microeconomics
2. ACCT 2200 Introduction to Financial Accounting and Reporting
3. ACCT 2210 Introduction to Managerial Accounting
4. CMPS 1200 Basic Computer Skills OR
___MIS 2000 Software Productivity Tools (1 unit)
6. ECON 2028 Principles of Macroeconomics
7. MATH 1209 Statistics in the Modern World (4 units)

C. Upper Division Agricultural Business Courses (Must be taken at CSUB) – 47 units

1. AGBS 2510 Principles of Agricultural Law
2. AGBS 3500 Agribusiness Management
3. AGBS 3510 Agribusiness Marketing
4. AGBS 3520 Economics of Agriculture & Natural Resource
5. AGBS 3530 Agricultural Trade Policy
6. AGBS 3540 Agricultural Finance
7. AGBS 3570 Agribusiness Accounting
8. AGBS 4860 Internship in Agricultural Business
9. COMM 3008 Technical and Report Writing **(GWAR)**
10. ECON 3030 Analyzing Economic Data
11. ECON 3508 Environmental Economics
12. ECON 4908 Senior Capstone (4 units) **(SELF and Capstone)**
13. ERM 4110 Environmental Law

14. INST 4200 Legal Research Methods (1 unit)
15. PLSI 3648 Food Policy and Politics
16. SCI 3329 Water and the West (**GE UD B course**)

C. Roadmaps to graduation

Table 6 is a roadmap for students starting their post-secondary education at CSUB (first-time freshmen), who would then complete the foundational agriculture business and science courses at BC, before returning to CSUB to finish their degree. While students can deviate from this roadmap and choose to complete all of the required BC courses in one semester, it is recommended that they instead take those courses over different terms.

Table 6 AGBS Roadmap

	Fall	Spring
Freshman Year	Area A1	Area A3
(Year One)	Area A2	AI - History
	Econ 2018	Econ 2028
	Area C1	Area C2
	Math 1209	CSUB 1019 (1 unit)
	CSUB 1009 (1 unit)	
30 Units	17 units	13 units
Sophomore Year	AGBS 1250 @ BC (AGRI B1)	AGBS 1010 @ BC (SOIL B1)
(Year Two)	AGBS 1220 @ BC (AGRI B6)	AGBS 1030 @ BC (CRPS B1)
	AI – Government	AGBS 1020 @ BC (ANSI B1)
	ACCT 2200	ACCT 2210
	Area D (Non-Econ)	Free Elective (3 units)
30 Units	15 units	15 units
Junior Year	AGBS 2510	AGBS 3510
(Year Three)	AGBS 3500	AGBS 3530
	ERM 4110	UD C course
	Inst 4200 (1 unit)	SCI 3329 (UD B Course)
	Econ 3508	ECON 3030
	JYDR Course	GWAR Exam (0 units)
31 Units	16 units	15 units
Senior Year	AGBS 3520	AGBS 3540
(Year Four)	AGBS 4860	AGBS 3570
	PLSI 3648	ECON 4908 (4 units)
	Free electives (6 units)	Free electives (4 units)
29 Units	15 units	14 units

ADT Student from community college

The typical student who enrolls in the AGBS major will be a student transferring to CSUB from a community college with an ADT. This person is also assumed to be general education certified and as such will not need to complete any lower division general education requirements. Table 6 lists the roadmap for such a student.

Table 7 Advising Roadmap for Transfer ADT Students

	Fall	Spring
	AGBS 2510	AGBS 3510
Junior Year	AGBS 3500	AGBS 3530
(Year One)	ERM 4110	UD C course
	Inst 4200 (1 unit)	SCI 3329 (UD B Course)
	Econ 3508	ECON 3030
	JYDR Course	GWAR Exam (0 units)
31 Units	16 units	15 units
	AGBS 3520	AGBS 3540
Senior Year	AGBS 4860	AGBS 3570
(Year Two)	PLSI 3648	ECON 4908 (4 units)
	Free electives (6 units)	Free electives (4 units)
29 Units	15 units	14 units

D. Program Faculty Qualification

John Deal, Lecturer, Department of Economics - CV

Ph.D. North Carolina State University, 2004
BA University of North Carolina at Charlotte, 1979

Academic Positions

California State University at Bakersfield, Bakersfield, CA.

Teaching Appointments

Lecturer, Sept 2016 - Present

Administrative Appointments

Director of Agricultural Business Program, Fall, 2017 - Present

Manchester University, North Manchester, IN

Teaching Appointments

Associate Professor (2011 – 2016)

Assistant Professor (2005 – 2011)

Select Publications (Peer-Reviewed)

1. Thomas Blake, Sreenath Majumder, John Deal, Matthew Hendryx, and Karla Conrad. (2018). "Examining the Impact of Class Difficulty on Transition and Success in College," *Journal of The First-Year Experience & Students In Transition*, 29 (1),
2. John Deal and Aaron Hegde. (2015). "The Development of Transferable Skills in a Variety of Economics Classes," *International Research in Education*, 3(2), 145-157.
3. Aaron Hegde and John Deal. (2014). "Areca Nut Farming in Southern India: A Case Study," *International Journal of Business and Social Science*, 5 (10). 40-45.
4. Jason Elliott, John Deal, and Matthew Hendryx. (2014). "Exposing Academic Dishonesty: Prevalence and Correlates at a Small, Midwestern Liberal-Arts School," *Journal of Academic and Business Ethics*, vol. 9 (December), 1-18.
5. Barry Goodwin, Monte Vandever, and John Deal. (2004). "An Empirical Analysis of the Acreage Effects of Participation in the Federal Crop Insurance Program," *American Journal of Agricultural Economics*, 86 (4), 1058-1077.

Select Publications (Other)

1. John Deal. (2017). "Whole Farm Revenue Protection in Kern County," *Kern Economic Journal*, vol. 19, issue 4.
2. Aaron Hegde and John Deal. (2017). "California Pistachio Exports – An Overview," *Kern Business Journal*, April 10.

Select Conference Papers

1. "Kern County Agriculture: A Case Study" - *Selected Paper at the Western Economic Association International Meetings, June, 2018, Vancouver, British Columbia.*

2. "Using an Inter-Disciplinary Approach to Affect Behavior for Sustainable Management of Resources" - *Selected Paper at the Association of Environmental Studies and Sciences, June, 2016, Washington, D.C.*
3. "The Development of Transferable Skills in a Variety of Economics Courses" - *Selected Paper at the Western Economic Association Meetings, July, 2015, Honolulu, HI.*
4. "Income Inequality and Air Pollution: A County-Level Analysis" - *Selected Paper at the Midwest Economic Association Meetings, March, 2015, Minneapolis, MN.*

Select Courses Taught

AGBS 3520 Agricultural and Natural Resource Economics

AGBS 3540 Agricultural Finance (2017 and 2019)

ECON 2018 Principles of Microeconomics (2016-2018)

ECON 2028 Principles of Macroeconomics (2017-2019)

ECON 2200 Quantitative Methods for Business and Economics (2016-2019)

Awards and Recognition

2014 Howard S. and Myra Bates Brembeck Associate Professor of Economics endowed chair

2004 "Nancy Pollock Dissertation Award" for the dissertation that most benefits the people of North Carolina, College of Management, N.C. State University.

2004 Kenneth Keller award for "Outstanding Dissertation of 2004" for the College of Agricultural and Life Sciences at N.C. State University (nominated)

S. Aaron Hegde, Chair and Professor, Department of Economics - CV

Ph.D. North Carolina State University, 2004
MA University of Missouri, Kansas City, 1995
BA University of Western Ontario, London, Canada, 1993

Academic Positions

CSU Bakersfield, Bakersfield, CA. – Department of Economics

Professor and Chair, *Sep 2017 - Present*
Professor, *Sep 2015 – Present*
Director, AGBS Program, *Jan 2012 – Aug 2017*
Associate Professor, *Sep 2010 – Aug 2015*
Assistant Professor, *Sep 2005 – Aug 2010*
Lecturer, *Sep 2003 – Aug 2005*

Pennsylvania State University, University Park, PA – Department of Energy, Environmental and Mineral Economics

Visiting Lecturer, *Feb 2002 – May 2003*

Select Publications (Peer-Reviewed)

1. John Deal and Aaron Hegde. 2015. “The Development of Transferable Skills in a Variety of Economics Classes,” *International Research in Education*, 3(2), 145-157.
2. Aaron Hegde and John Deal. 2014. “Areca Nut Farming in Southern India: A Case Study,” *International Journal of Business and Social Science*, 5 (10). 40-45.

Select Publications (Other)

1. Aaron Hegde and John Deal. 2017. “California Pistachio Exports – An Overview,” *Kern Business Journal*, April 10.
2. Hegde, S.A. 2008. *Hedging and Contracting: Risk Management in the Broiler Industry*. Saarbrücken: VDM Verlag Dr. Muller Publishing.
3. Hegde, S.A. 2007. “Agricultural Subsidies and Their Impact on Trade under WTO Paradigm” in *Food Politics at Home and Abroad*, S. Clark (Editor), Kendall/Hunt Publishing

Select Conference Papers

1. “Kern County Agriculture: A Case Study” - *Selected Paper at the Western Economic Association International Meetings, June 2018, Vancouver, British Columbia.*
2. “Using an Inter-Disciplinary Approach to Affect Behavior for Sustainable Management of Resources” - *Selected Paper at the Association of Environmental Studies and Sciences, June 2016, Washington, D.C.*
3. “The Development of Transferable Skills in a Variety of Economics Courses” - *Selected Paper at the Western Economic Association Meetings, July 2015, Honolulu, HI.*
4. “Real-World Simulations In Agriculture Classes: A Case Study” - *Panel Presentation, 2015 AESS Conference, June 2015, San Diego, CA*

Select Teaching

- AGBS 3520 Agricultural and Natural Resource Economics
- AGBS 3530 Agricultural Trade and Policy
- AGBS 3540 Agricultural Finance
- ECON 2018 Principles of Microeconomics
- ECON 2028 Principles of Macroeconomics
- ECON 3508 Environmental Economics
- ECON 4908 Senior Seminar

Select Administrative Accomplishments

- 2014 Developed curriculum for BS in AGBS – shepherded pilot program approval
- 2012 Developed AGBS concentration within BS BA degree
- 2008 Developed endowed concentration in OSHM in ERM degree – helped secure \$800,000 Aera Energy endowment

Select Awards and Recognition

- 2015 Promotion to Professor
- 2010 Tenure and promotion to Associate Professor
- 2009 E. (Kika) De La Garza Fellowship
- 2009 AEA Teaching Innovations Program (TIP) in Economics

Abrán Padilla

EDUCATION

Northwestern University

Master of Predictive Analytics -- Emphasis on Advance Predictive Modeling and Risk Analytics

Loyola Marymount University

Master of Business Administration -- Double concentration in Finance and Computer Information Systems

California State University, Bakersfield

Bachelor of Arts -- Double major in Economics and Political Science with a Spanish minor

EMPLOYMENT HISTORY

05/16 - Present **Partner**, Baja Ag Solutions, Inc., Ceres, CA.

50% owner in a trading company exporting dried fruits and nuts to countries throughout the Americas, Asia, Europe, and Oceania.

2013 – Present **Owner/Manager**, Spectrum Data Analytics, LLC, Bakersfield, CA.

Developed data analytics models in agribusiness and public transit in fields such as operations, logistics, and market and strategy analytics (to name a few) with more than \$60MM in cost savings and/or returns since 2013.

Developed predictive pricing algorithms using a combination of multivariate regression and machine learning algorithms to assist in monthly pricing decisions in both the almond industry (buy/sell) and in public transit (diesel fuel).

Developed custom data and operations models focused on spoilage avoidance, production leveling, and automation that reduced inventory losses by more than half in less than one year while reducing order to shipment duration by 75%.

09/12 – Present **Adjunct Faculty**, California State University, Bakersfield, Bakersfield, CA.

Teaching courses in Agribusiness Management, Economics, and Spreadsheet Based Data Analytics

03/10 - 05/15 **Adjunct Faculty**, Taft Community College, Taft, CA.

Teaching courses in General Business, Management, and Economics

07/15 – 05/16 **Chief Operating Officer**, California Gold Almonds, LLC, Modesto, CA.

Oversaw all aspects related to almond processing—including sales, logistics, processing, and finance.

Implemented operational and financial analytics tools which significantly reduced costs versus the prior year.

Implemented an operations and sales strategy which resulted in a 40% increase in shipment capacity with half the staff.

11/07 – 07/15 **Director of Operations Finance**, Paramount Farms Inc. (aka Wonderful Pistachios and Almonds), Lost Hills, CA.

Designed, developed, and implemented PFI's Business Intelligence initiatives in areas such as Finance, Operations, Inventory Management, and Human Resources—via databases, data analytics, and dashboard visualizations.

Developed various machine learning algorithms and optimization models for almond and pistachio processing, scheduling, inventory management, crop size and quality estimates, and sales price analytics.

Developed and oversaw the inventory management models for Pistachio and Almond operations (totaling more than 400 million lbs. annually), along with managing the corresponding operations and financial analytics staff.

05/05 – 11/07 **Director of Almond Operations**, Paramount Farms Inc. (aka Wonderful Pistachios and Almonds), Lost Hills, CA.

Decreased inventory spoilage and losses to the lowest levels in the company's history in one-year after taking over the division—followed by the second lowest level in the second year.

In one-year, reduced direct labor costs by 30% and overhead by more than 20%.

Decreased Almond Operations downtime by 20-30% by reducing/eliminating production flow bottlenecks.

05/02 - 05/05 – **Finance Officer**, First 5 Kern, Bakersfield, CA.

04/01 - 05/02 – **Plant Accountant**, Dopaco Inc., Bakersfield, CA.

08/99 - 04/01 – **Cost Accountant and MIS Technician**, Treehouse Farms Inc., Earlimart, CA.

PERSONAL AND TECHNICAL SKILLS

- Fluent in the Spanish language (Speaking, Reading and Writing)
- Ability to design/develop/implement analytics models via databases, advanced spreadsheet modeling, and statistical software
- Trained and experienced in the implementation of Lean Manufacturing and Data Analytics in processing & manufacturing.

ACTIVITIES AND AWARDS

- **Alumnus of the Year**, California State University, Bakersfield, School of Business, 2015
- **Member**: Beta Gamma Sigma (National Business Honor Society), LMU Chapter, 2006 - Present.
- **Member**: Alpha Sigma Nu (National Jesuit University Honor Society), 2006 - Present.
- **Member**: National Society for Hispanic MBAs (Los Angeles Chapter), 2003 - 2006.
- **Member**: Omicron Delta Epsilon (National Economics Honor Society), 1999 - Present.

Other Practitioner Instructors

Mr. Jeff Green, General Counsel, Grimmway Farms (Retired)

Mr. Green teaches the Agricultural Law class. He recently retired as the general counsel at Grimmway after having worked in agriculture for over two decades. An alumnus of CSUB, Mr. Green is an active member of the agriculture community.

Ms. Melissa Poole, Regulatory Affairs Manager, Wonderful Orchards

Ms. Poole has a law degree from UCLA. As the Regulatory Affairs Manager for Wonderful Orchards, Ms. Poole represents Wonderful's interest in various agriculture issues, such as water rights. She brings this knowledge and experience to her Environmental Law class (ERM 4110). Given the importance of water issues in California agriculture, students gain valuable insights from a water law expert such as Ms. Poole.

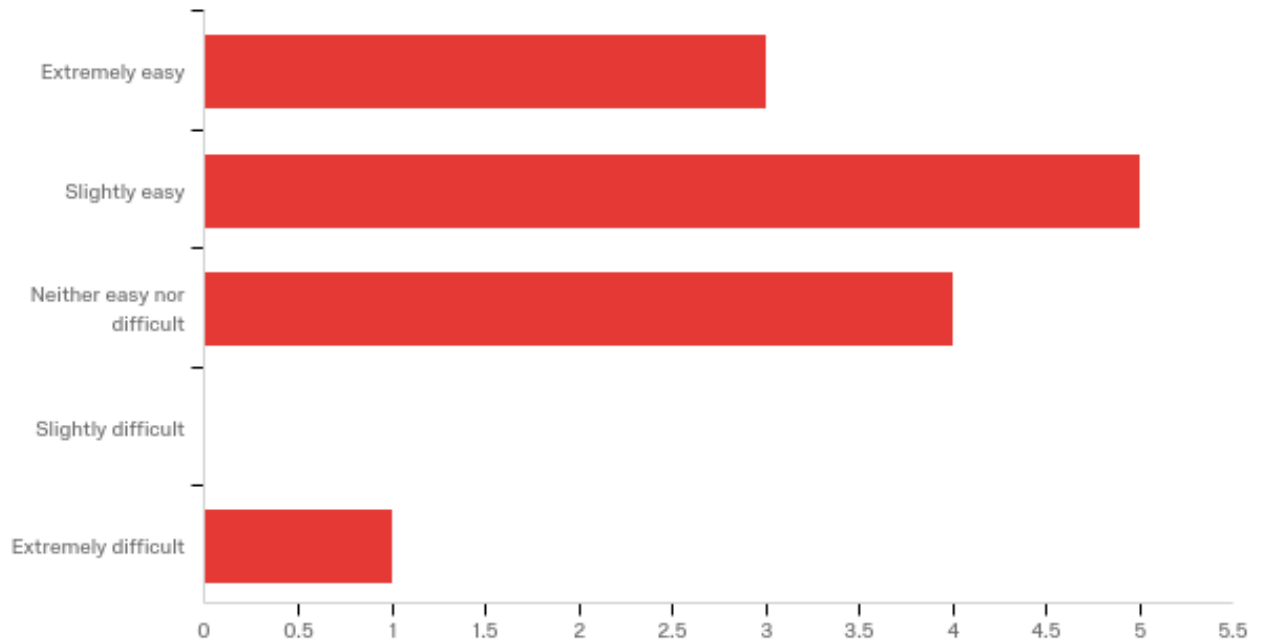
Mr. Clay Watson, CEO Jim Supply Co.

Mr. Watson teaches AGBS 3570 (Agribusiness Accounting) for the program. He is currently the CEO of Jim Supply Company, the leading manufacturer and supplier of agricultural solutions for small and large growers.

E. Student Feedback

AGBS Program Review Student Survey

Q1 - How easy is it to obtain the resources that you need from the university library system?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How easy is it to obtain the resources that you need from the university library system?	1.00	7.00	3.19	1.63	2.65	16

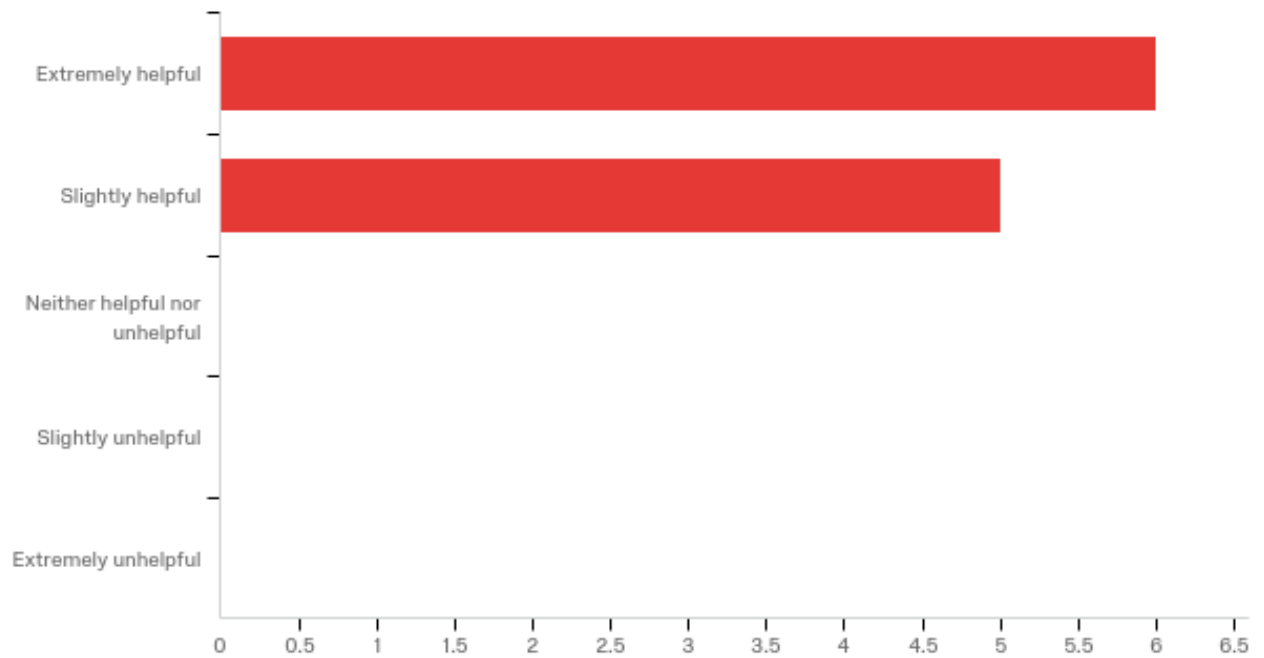
#	Answer	%	Count
1	Extremely easy	23.08%	3
3	Slightly easy	38.46%	5
4	Neither easy nor difficult	30.77%	4
5	Slightly difficult	0.00%	0
7	Extremely difficult	7.69%	1

Total

100%

13

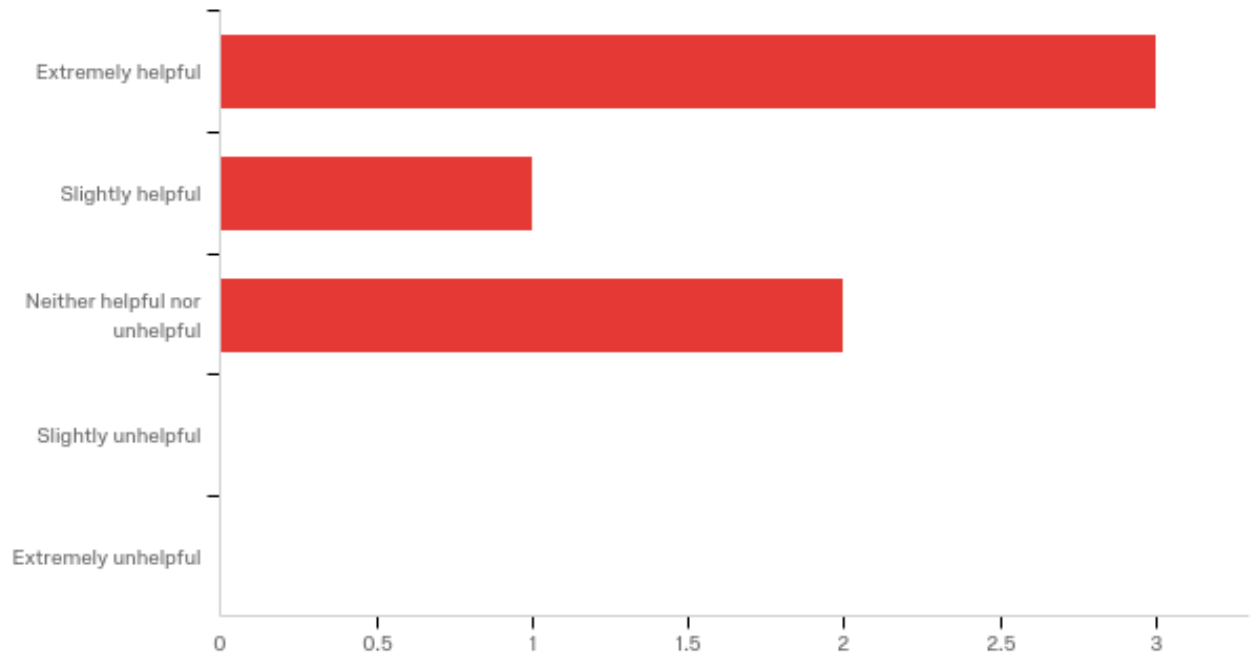
Q2 - How helpful are your AGBS academic advisors?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How helpful are your AGBS academic advisors?	1.00	6.00	2.19	1.29	1.65	16

#	Answer	%	Count
1	Extremely helpful	54.55%	6
3	Slightly helpful	45.45%	5
4	Neither helpful nor unhelpful	0.00%	0
5	Slightly unhelpful	0.00%	0
7	Extremely unhelpful	0.00%	0
	Total	100%	11

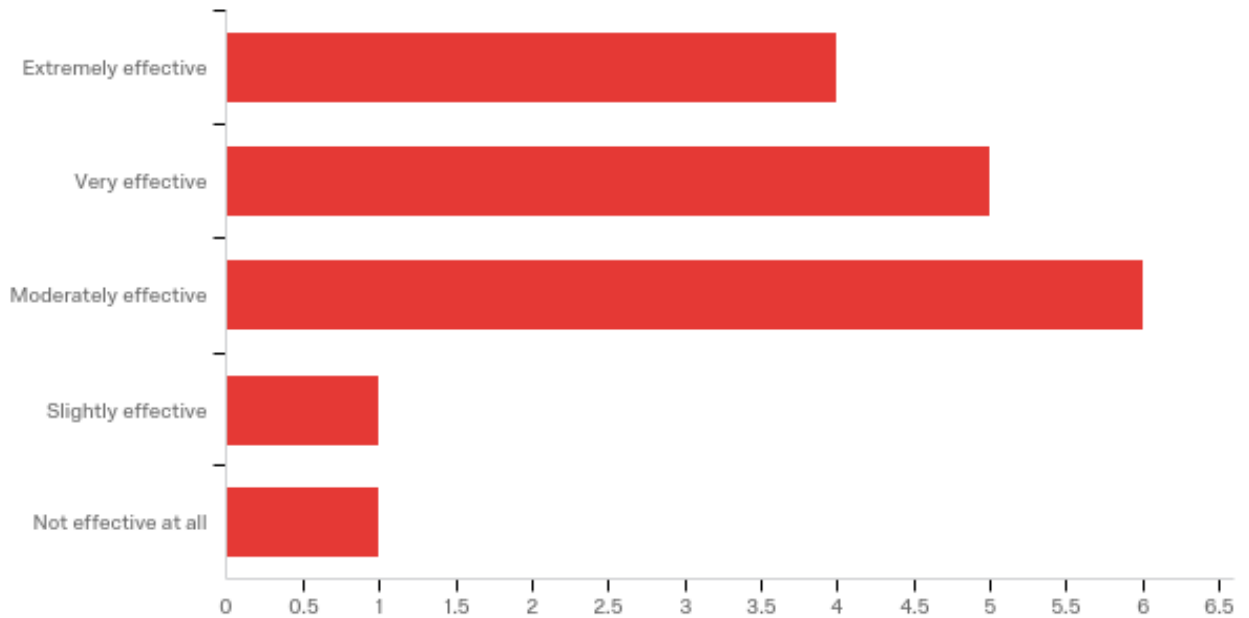
Q3 - How helpful are your AGBS program faculty?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How helpful are your AGBS program faculty?	1.00	4.00	2.33	1.37	1.89	6

#	Answer	%	Count
1	Extremely helpful	50.00%	3
3	Slightly helpful	16.67%	1
4	Neither helpful nor unhelpful	33.33%	2
5	Slightly unhelpful	0.00%	0
7	Extremely unhelpful	0.00%	0
	Total	100%	6

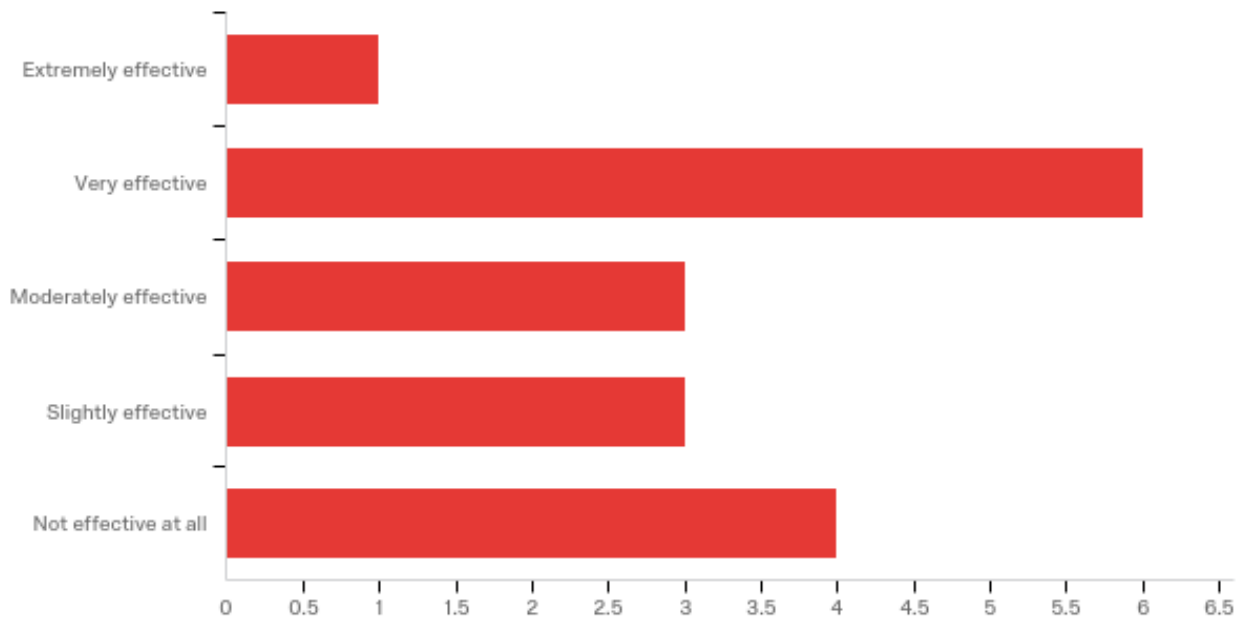
Q4 - Think of all the courses taken for the AGBS major. How effective was the teaching within the major?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Think of all the courses taken for the AGBS major. How effective was the teaching within the major?	1.00	5.00	2.41	1.09	1.18	17

#	Answer	%	Count
1	Extremely effective	23.53%	4
2	Very effective	29.41%	5
3	Moderately effective	35.29%	6
4	Slightly effective	5.88%	1
5	Not effective at all	5.88%	1
	Total	100%	17

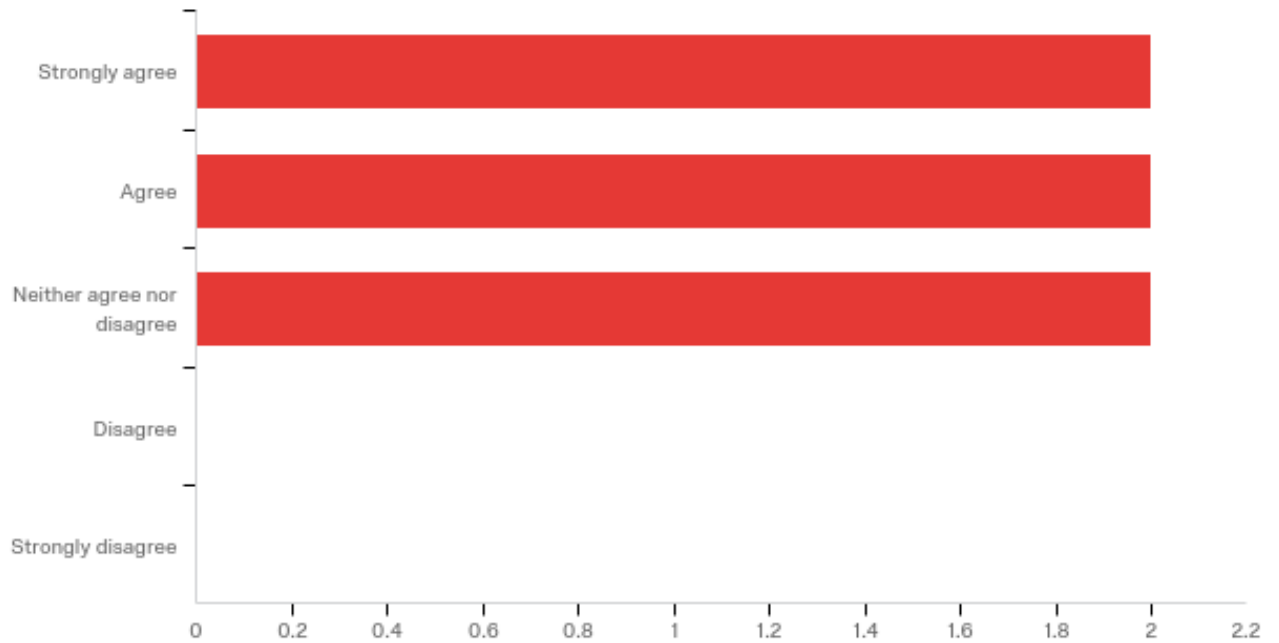
Q5 - How effective is the teaching outside the AGBS major at CSUB?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How effective is the teaching outside the AGBS major at CSUB?	1.00	5.00	3.18	1.29	1.67	17

#	Answer	%	Count
1	Extremely effective	5.88%	1
2	Very effective	35.29%	6
3	Moderately effective	17.65%	3
4	Slightly effective	17.65%	3
5	Not effective at all	23.53%	4
	Total	100%	17

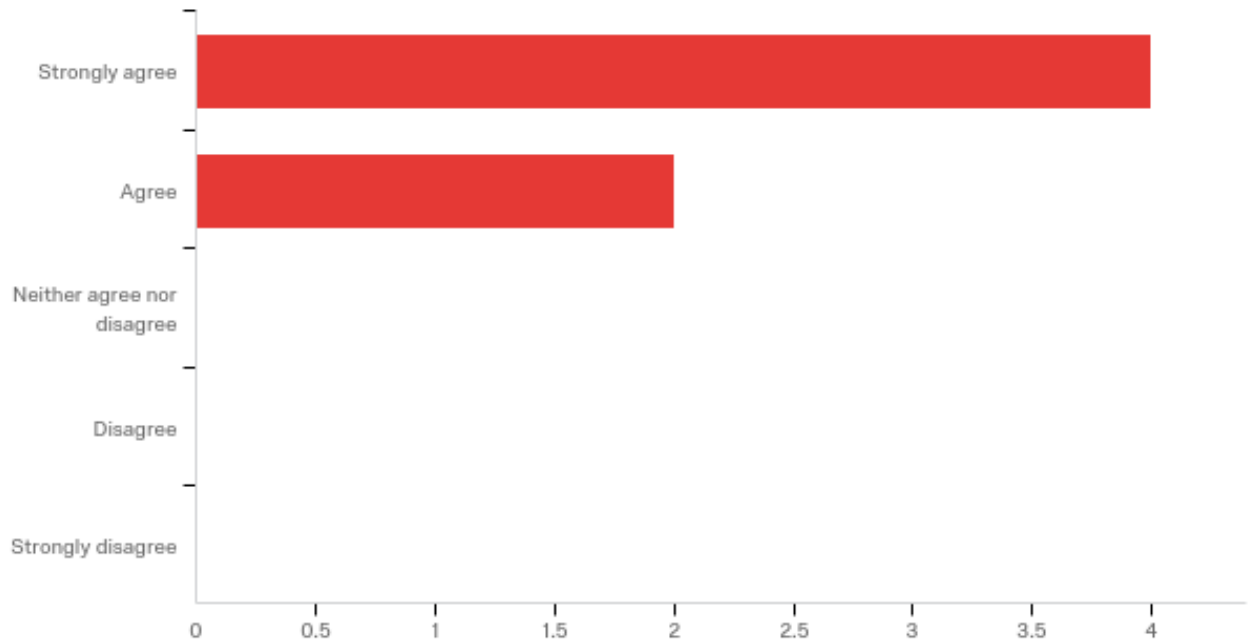
Q6 - The program adequately prepared me to use technology in my study/profession.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The program adequately prepared me to use technology in my study/profession.	1.00	4.00	2.33	1.25	1.56	6

#	Answer	%	Count
1	Strongly agree	33.33%	2
2	Agree	33.33%	2
4	Neither agree nor disagree	33.33%	2
6	Disagree	0.00%	0
7	Strongly disagree	0.00%	0
	Total	100%	6

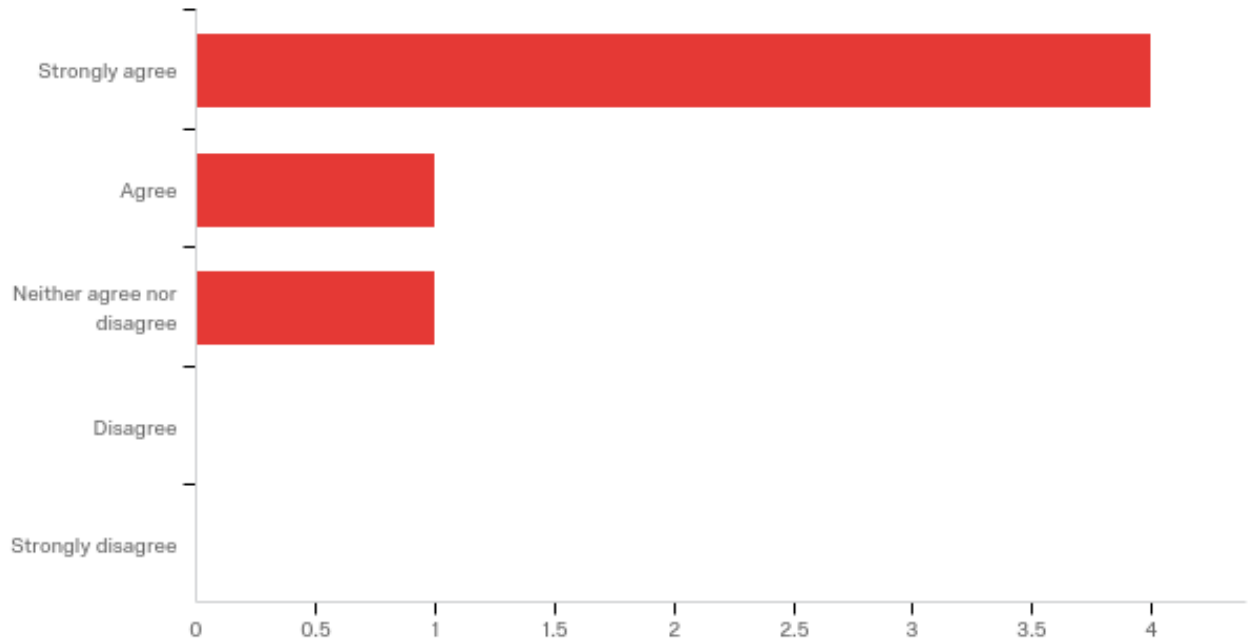
Q7 - The program faculty were accessible to and supportive of students.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The program faculty were accessible to and supportive of students.	1.00	2.00	1.33	0.47	0.22	6

#	Answer	%	Count
1	Strongly agree	66.67%	4
2	Agree	33.33%	2
4	Neither agree nor disagree	0.00%	0
6	Disagree	0.00%	0
7	Strongly disagree	0.00%	0
	Total	100%	6

Q8 - The courses reasonably matched the program goals. [Goal 1: Communication Skills. Goal 2: Critical Thinking Skills. Goal 3: Knowledge of Regional Agriculture and Food Industry. Goal 4: Application Skills.]

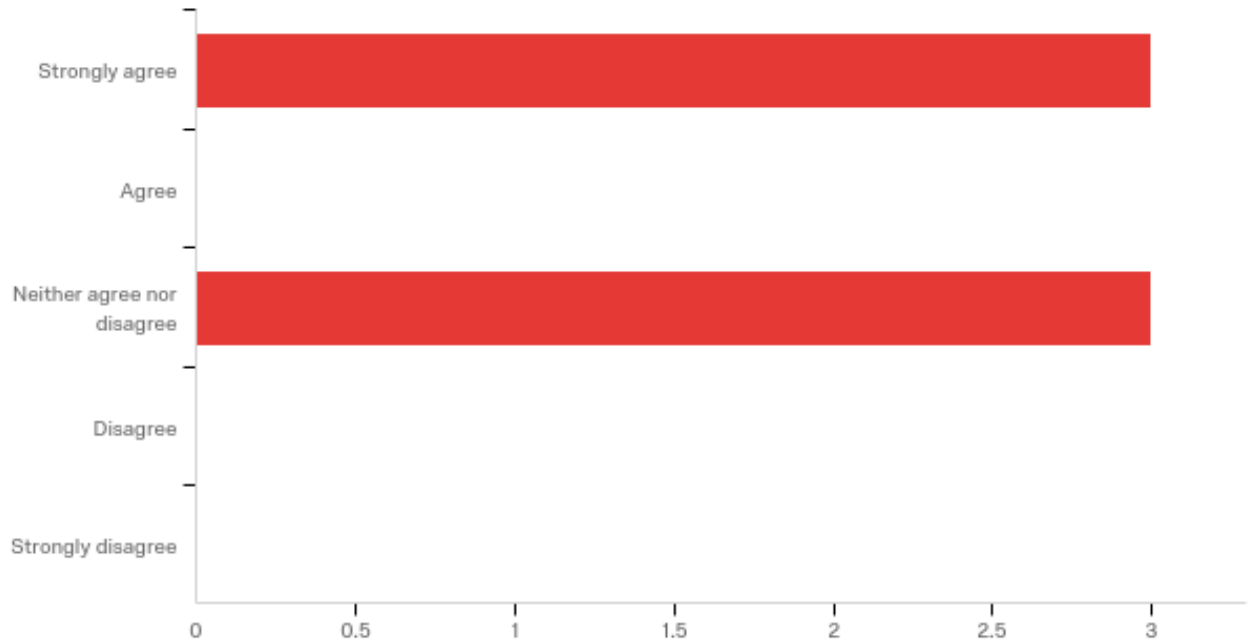


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The courses reasonably matched the program goals. [Goal 1: Communication Skills. Goal 2: Critical Thinking Skills. Goal 3: Knowledge of Regional Agriculture and Food Industry. Goal 4: Application Skills.]	1.00	4.00	1.67	1.11	1.22	6

#	Answer	%	Count
1	Strongly agree	66.67%	4
2	Agree	16.67%	1
4	Neither agree nor disagree	16.67%	1
6	Disagree	0.00%	0

7	Strongly disagree	0.00%	0
	Total	100%	6

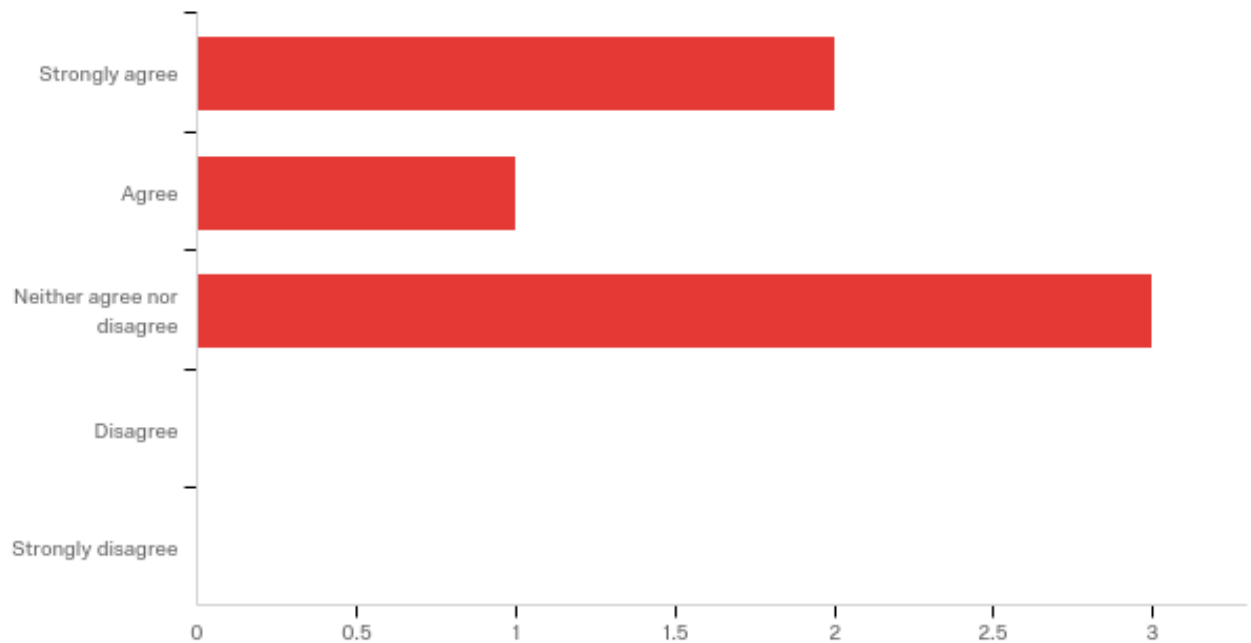
Q9 - My internship experience helped me better understand the agriculture and food industry.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	My internship experience helped me better understand the agriculture and food industry.	1.00	4.00	2.50	1.50	2.25	6

#	Answer	%	Count
1	Strongly agree	50.00%	3
2	Agree	0.00%	0
4	Neither agree nor disagree	50.00%	3
6	Disagree	0.00%	0
7	Strongly disagree	0.00%	0
	Total	100%	6

Q10 - My internship experience helped me apply knowledge gained within the curriculum.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	My internship experience helped me apply knowledge gained within the curriculum.	1.00	4.00	2.67	1.37	1.89	6

#	Answer	%	Count
1	Strongly agree	33.33%	2
2	Agree	16.67%	1
4	Neither agree nor disagree	50.00%	3
6	Disagree	0.00%	0
7	Strongly disagree	0.00%	0
	Total	100%	6

F. Letters of Support

Wonderful

pistachios & almonds

March 7, 2019

Dr. S. Aaron Hegde, Ph.D.
CSUB
9001 Stockdale Hwy
Bakersfield, CA 93311

SUBJECT: CSUB Agricultural Business Degree Program

Dear Dr. Hegde,

On behalf of Wonderful Pistachios and Almonds, I would like to express our appreciation for the AGBS degree program, and the contributions made by graduates of the program to California central valley agricultural businesses like ours.

As you know, we have hired many CSUB graduates into our Wonderful Leadership Program, with the objective of providing two years of experience rotating through various functions in the company in preparation for significant leadership roles in our business. Several of these new leaders have come directly from the Agricultural Business program and are excelling in their roles at Wonderful Pistachios & Almonds.

Graduates with this background have also been in demand with other divisions of our company, and no doubt with other companies in the area as well who aspire to recruit local talent to grow with their organizations.

I hope CSUB will continue the program. We continue recruit new leaders annually to enhance the growth of the Wonderful company, and CSUB is one of our key suppliers of new talent for future leadership of our company.

Sincerely,



Mr. Loren Meigide

Sr. Director, Employee Development

Wonderful pistachios & almonds

Direct: (661) 797-6451

<http://wonderfulpistachiosandalmonds.com/>



CSUB Agribusiness Program

I, Robert Bender the Chief Executive Officer and President of Tasteful Selections LLC., would like to extend this letter of appreciation to the CSUB BS Agribusiness Program that has provided us with an excellent pool of talent that has sustained our fast pace growth over the years.

Tasteful Selections LLC. started in 2010 and we quickly grew to be the leading bite sized potato grower/packaging facility in the United States. As we continue to grow in the Agricultural Industry we are constantly in search to add new talent to our team. We increased production by 34% in 2018 and continue to expand at a rapid rate. Historically Agriculture has been one of the largest industries in Kern County, therefore there is such a vast need for the next generation to understand the specific needs of Agriculture.

Our Facility, which employees over 700 people, is located in Arvin, California and we are consistently in search for new talent within the Agribusiness field. Without the local Agribusiness program Tasteful Selections would unfortunately be forced to recruit from colleges out of the area, when we would rather, support our community by employing alumni from our local university. We have also offered internships as well as part-time positions to students from CSU, Bakersfield in the past.

We've had the pleasure of working closely with the Agribusiness Program and we are nothing but satisfied of the graduates who have become full-time employees. Our Analyst, Finance, and Management departments continues to grow, and we hope to continue this great endeavor with the Agribusiness Program.

Thank you for what this program has brought to Tasteful Selections and we are excited for what the future holds in our partnership.

A handwritten signature in blue ink that reads "Robert Bender".

Robert Bender

Chief Executive Officer and President

Tasteful Selections



12 March 2019

To whom it may concern:

I work in Bakersfield, California with the USDA Natural Resources Conservation Service (NRCS). Twenty students from the California State University in Bakersfield (CSUB) Agricultural Business volunteered over the last four years to work with local farmers and ranchers. Each of these student volunteers would make worthy full-time employees at NRCS.

The coursework that makes up the CSUB Agricultural Business degree meets the qualifications for what NRCS refers to as a soil conservationist or conservation planner. Three semester hours in soil science and three semester hours in crops or plant science along with a total of 30 semester hours in courses related to the agricultural field.

The degree prepares students for jobs at NRCS. At NRCS, we provide financial and technical assistance to local farmers and ranchers for on farm improvements. The ability to understand the business of agriculture and the language of agriculture are critical.

In working with students from the CSUB Agricultural Business program, I observed an ability to work directly with local farmers and ranchers. Not only are they comfortable communicating with our local farmers, students also provide useful information to assist farmers in making decisions for on farm improvements.

The agricultural sector is continuing to expand and become more complex. Having a pool of students with practical training and real-world experience is necessary to fill the demand for agricultural experts. In California, the NRCS has over 33 vacancies that need to be filled. The CSUB Agricultural Business degree is preparing students to fill these positions.

Sincerely,

A handwritten signature in blue ink that reads "Marcos Perez".

Marcos Perez



Spectrum Data Analytics
Visionary Models. Insightful Analyses.

March 7, 2019

California State University, Bakersfield
Attn: University Program Review Committee
9001 Stockdale Highway
Bakersfield, CA 93311

Dear UPRC Committee Members:

The purpose of this letter is to recognize both the need and the success of the Agricultural Business (AGBS) program at California State University, Bakersfield (CSUB). As a CSUB alumnus, an agribusiness educator, and an agribusiness entrepreneur/professional, I know the AGBS program is serving a need to local firms (small and large) while simultaneously offering local high school graduates a competitive and applied degree that was previously only available in places such as San Luis Obispo or Fresno.

Upon graduating from CSUB in 1999, my first job was in agribusiness. I was hired as a cost accountant by a mid-sized almond processor. Later, I was hired by Wonderful Pistachios and Almonds (WP&A)—the largest grower processor of almonds and pistachios in the world—and served in various senior management roles over a 10-year period—including Director of Almond Operations and Director of Operations Finance. Despite my successes, I found my early years difficult because my education, while invaluable, did not prepare me for nuances found in agribusiness. Furthermore, a lack of networking opportunities with local agribusiness firms while in college left me on my own when it came to job searching after graduation. In contrast, the CSUB agribusiness program actively engages with local agribusiness companies, establishes mentorship opportunities with agribusiness leaders, and facilitates internships.

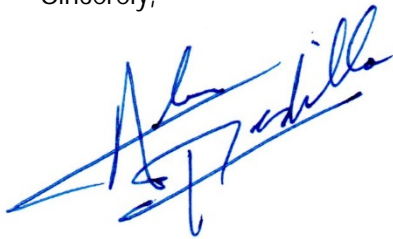
In 2011, I was contacted by Dr. Mark Evans informing me that CSUB started an agribusiness program. Dr. Evans asked if I was interested in teaching an agribusiness course in 2012 and I enthusiastically agreed because I saw it as a way to give back to CSUB. My first class was agribusiness management and enjoyed the experience/students so much that I am still teaching seven years later. I can tell you that the content in the classes is very applied and students learn not only about local agribusiness products but are also given opportunities to meet and hear lectures from the Presidents, Vice Presidents, and entrepreneurs of agribusiness companies throughout the Central Valley.

As a business professional, I know the importance of having well-rounded, hands-on, and skilled candidates—and that is what the AGBS is known for by local firms. As a senior manager at WP&A, I started an internship which hired over 12 students in a two-year time span—and was later rolled into an agribusiness leadership program that still exists today is a feeder for managers at the company.

After leaving WP&A, I became an entrepreneur and started an agribusiness consulting company while also forming two businesses with a partner: a commodity export business and an almond processing company (both located in Ceres, CA). In my consulting endeavors, I have personally employed CSUB agribusiness students for analytics projects while also recommending many students to local firms for internships and full-time positions. As an entrepreneur, I know what skills I need my candidates to have in order to support my ventures and as a consultant, I know what skills and knowledge local business need from their candidates to grow their businesses to compete in a global marketplace. As such, I incorporate the needs expressed by local firms into my lectures and assignments. The results of having a locally educated and trained pool of candidates is self-evident, over the last several years, I have successfully placed over 80 students in either internships and/or full-time positions with local agribusiness companies and they are now actively recruiting CSUB agribusiness students and graduates. In fact, one Director of Operations for a local firm which controls two-thirds of their commodity in the United States told Dr. Hegde and I that his “future management team will come from the graduates we hire from this program”—over lunch in October 2018.

Thank you for your time and consideration. I hope this letter provides you with some insight on the value of the program to the students, the local community, and the local firms which benefit from the graduates of the program. I can speak from the perspective of a CSUB alumnus, an educator, and an employer when I say that I enthusiastically support the agribusiness degree without reservations. If you have any questions, please feel free to contact me at (661) 477-6221.

Sincerely,



Abrán Padilla, MBA, MSPA
Owner/Manager, Spectrum Data Analytics, LLC
Partner, Baja Ag Solutions, Inc.
Partner, Baja Ag Inc.