Horticulture

Cycles included in report:
Cycle #3 8/1/14 to 7/31/15

Program Name: Horticulture
Program Cycle: #3 8/1/14 to 7/31/15

1 Program Summary

HandbookProgramReviewFall2014 [PDF 2,136 KB 9/2/14]
Horticulture [PDF 716 KB 9/2/14]

1.1 Degree Offerings Horticultural Sciences

Since I am the Chair and the only full-time faculty member in the Horticultural Sciences department, this program document is being written by me, Dr. Lekha Sreedhar, Associate professor.

Horticulture is the science and art of producing, improving, marketing, and using fruits, vegetables, flowers, and o plants. Horticulture differs from botany and other plant sciences in that horticulture incorporates both science and (American Society for Horticultural Sciences). Plant improvement is achieved by Plant Breeding and Plant Biotec the past horticulture has sometimes been called "Applied Botany". Horticulture goes hand-in hand with disciplines Entomology and Plant Pathology. To grow a successful crop, we apply the science of botany, plant physiology, c biochemistry, mathematics, plant pathology, entomology, soil science, and genetics. There is art involved in prop techniques such as grafting and specializations such as Landscape Horticulture.

Horticulture requires more intensive management and offers a higher gross return per unit area per unit time com disciplines like forestry and agriculture. In horticulture, the individual plant matters. Globally, with exponential hum population growth, scarce natural resources, and shortage of productive land, horticulturists will be in demand no than ever.

Within horticulture there are several divisions. These include: Olericulture, Pomology, Viticulture and Enology, Flo Greenhouse Management, Turfgrass Management, Nursery Management, Arboriculture, Landscape Horticulture Interiorscaping, and Horticultural Therapy.

In Kansas, green industry is a billion dollar industry (http://www.nass.usda.gov/Statistics_by_State/Kansas/Publications/Economics_and_Misc/Horticulture/horticultur About 97% of the $1billion revenue is from ornamental horticulture.

Environmental horticulture is one of the fastest growing segments of the nation's horticultural economy (http://www.ufei.org/files/pubs/EconomicImpactsoftheUSGreen%20Industr(NUCFACfinalreport).pdf. At JCCC, Ho Sciences program offers endless career opportunities to our students.

JCCC Horticultural Sciences program offers: Horticultural Sciences AAS, Horticultural Sciences Certificate, Lands Technician Certificate.

1. Horticultural science AAS degree program is designed to prepare students with the scientific knowledge and jo required for employment in the green industry. Upon completion of the AAS degree, students will possess the co to be successful at entry-level and higher positions in ornamental horticulture such as horticulture specialists in b gardens and arboretums, sports field managers, golf course managers, parks and recreation managers, landscap designers, landscape installation and maintenance managers, grounds maintenance supervisors, field supervisor landscape technicians, greenhouse production and management supervisors, commercial pesticide applicators, I pest management specialists, ecological restoration project supervisors, plant science laboratory technicians, an related occupations. Total program hours is 64-75.

We have 2+2 articulation agreements with Kansas State University. Below are links to the two agreements:

http://www.jccc.edu/files/pdf/counseling/transfer-programs/ksu-horticulture-bs-golf-turf-mgmt-specialization.pdf

http://www.jccc.edu/files/pdf/counseling/transfer-programs/ksu-horticulture-bs.pdf

Please note: At K-State, for B.S Horticultural Sciences, students have to complete 29 credit hrs of core Hort cours Students will then take additional courses to specialize in areas such as golf course management, greenhouse management, landscape design, nursery management, etc.The transfer agreement we have with K-State allows

students to transfer 15 Hort credit hrs, i.e 50% of core Hort course work from JCCCs Hort program to K-State, at sophomore and junior level. Please see section 4.3 for a detailed discussion regarding this transfer agreement.

(Horticultural Sciences - Major Code 2150; State CIP Code 01.0601 and Business Plan - Major Code 4810; State 52.0710)

Science

Associate of Applied Science

First Semester
HORT 201 Introduction to Horticultural Science 4 (*Please see my comments in section 6, 'Curriculum reflection', this introductory course that transfers to K-State at the sophomore level)
HORT 214 Woody Plants I, Deciduous 3
BIOL 125 General Botany 5
HORT 220 Herbaceous Plants 3
ENGL 121 Composition I* 3
Total Hours 18

Second Semester
HORT 205 Plant Propagation* 3
HORT 215 Woody Plants II, Evergreens 3
HORT 260 Horticulture Soils 3
MATH 116 Intermediate Algebra* (or higher) 3
Social Science/Economics Elective ^ 3
Health and/or Physical Education Elective ^^ 1
Total Hours 16

Social Science/Economics Elective

Health and/or Physical Education Elective

Third Semester
Electives (see below) 6-8
HORT 140 Turfgrass I 3
HORT 235 Landscape Maintenance and Techniques 3
Humanities/Art Elective ^ 3
Total Hours 15-17

Humanities/Art Elective

Fourth Semester
Horticulture Electives (see below) 6-8
HORT 160 Garden Center Operations 3
HORT 225 Plant Problems* 3
HORT 270 Horticulture Internship* 3
Total Hours 15-17

Horticulture Electives
HORT 135 Landscape Design 3
HORT 150 Fruits, Vegetables and Herb Crops 2
HORT 165 Arboriculture 3
HORT 240 Turfgrass II* 3
HORT 255 Pest Control Management 3
HORT 265 Landscape Construction 3
FLR 130 Principles of Traditional Design 3
FLR 150 Contemporary Design Styles 3

List of Electives

BUS 140 Principles of Supervision 3
BUS 150 Business Communications* 3
FL 130 Elementary Spanish I 5
BIOL 121 Introductory Biology for Non-Majors 4
CHEM 122 Principles of Chemistry* 5
HORT 150 Fruits, Vegetables and Herb Crops 2

Additional add-on Business Plan Certificate: 7 hrs.
Business Plan Certificate This certificate is designed for students who are interested in opening their own service providing administrative assistance to businesses. Coursework focuses on fundamental knowledge necessary to operate an entrepreneurial venture, evaluating the feasibility of the business idea, and concludes with writing a bu plan to start, grow and sustain a business venture. The business plan certificate is recommended for students to Horticultural Sciences degree.

2. Horticultural Sciences Certificate. Upon completion of this 31-38 hour certificate, students will possess the scie knowledge and competencies to be successful at entry-level or higher positions in landscape design and mainten care, garden centers and nurseries, wholesale greenhouse growers, and greenhouse operations and other relate occupations. Until 2013, the horticultural certificate program was a cooperative program with the Metropolitan Co Colleges. However, recently MCC cancelled all Hort courses. Horticultural Sciences Program at JCCC is a major students in Greater Kansas city and Lawrence because of our comprehensive curriculum and faculty expertize.

Horticultural Sciences - Major Code 6180; State CIP Code 01.0601 and Business Plan - Major Code 4810; State 52.0710.

First Semester
HORT 140 Turfgrass I 3
HORT 214 Woody Plants I, Deciduous 3
HORT 220 Herbaceous Plants 3
HORT 201 Introduction to Horticultural Science 4
HORT 235 Landscape Maintenance and Techniques 3
Total Hours 16

Second Semester
HORT 215 Woody Plants II, Evergreens 3
HORT 225 Plant Problems* 3
HORT 135 Landscape Design 3
HORT 205 Plant Propagation* 3
Elective (see below) 3
Total Hours 15

Elective (choose one course)
BUS 121 Introduction to Business 3
BUS 145 Small Business Management 3
HORT 160 Garden Center Operations 3
HORT 255 Pest Control Management 3
HORT 260 Horticulture Soils 3
HORT 270 Horticulture Internship* 3

Total Program Hours: 31

Additional Add-On Business Plan Certificate, 7 hrs.

3. Landscape Technician Certificate. This 31-credit-hour certificate program is designed to prepare students for a landscape design and maintenance. Upon completion of this certificate, students will possess the scientific knowl competencies to be successful at entry-level or higher positions in landscape design and maintenance and other occupations.

Landscape Technician -Major Code 6190; State CIP Code 01.0605 and Business Plan -Major Code 4810; State 52.0710)

Science

First Semester
HORT 201 Introduction to Horticultural Science 4
HORT 214 Woody Plants I, Deciduous 3
HORT 140 Turfgrass I 3
HORT 220 Herbaceous Plants 3
HORT 235 Landscape Maintenance and Techniques 3
Total Hours 16

Second Semester
Landscape Elective (see list below) 3
HORT 215 Woody Plants II, Evergreens 3
HORT 225 Plant Problems* 3
HORT 135 Landscape Design 3
HORT 265 Landscape Construction 3
Total Hours 15

Landscape Electives
HORT 150 Fruits, Vegetables and Herb Crops 2
HORT 205 Plant Propagation* 3
HORT 260 Horticulture Soils 3
HORT 240 Turfgrass II* 3
HORT 270 Horticulture Internship* 3
BUS 121 Introduction to Business 3
BUS 145 Small Business Management 3

Total Program Hours: 31

Additional Add-On Business Plan Certificate, 7 hrs.

Degree information for Horticultural Sciences can be found at:
http://catalog.jccc.edu/fall/degreecertificates/horticulture/horticultural-sciences-aas/

More info about our Horticultural Sciences program is available at http://www.jccc.edu/science/horticulture.html.

1.2 Certificate Offerings Course offerings

As discussed in the previous section, JCCC Horticultural Sciences department offers Horticultural Sciences AAS, Horticultural Sciences Certificate, Landscape Technician Certificate. Below is a list of courses this department offers towards the two certificate programs and the AAS we offer. All courses, except Hort 255 Landscape Pest management, have a lecture and a lab component.

Hort 115 Home Horticulture, offered Fall and Spring.
Hort 135 Landscape Design, offered Fall.
Hort 140 Turf grass 1, offered Fall.
Hort 150 Fruits, Vegetables and Herb crops, offered Summer.
Hort 160 Garden Center Operations, offered Summer.
Hort 165 Arboriculture, offered every other Fall.
Hort 201 Introduction to Horticultural Sciences (transfers to K-State as Hort 201, Principles of Horticultural Science), two sections offered in Fall and one section in Spring. Please read my comments regarding Hort 201 in section 6 (Curriculum reflection).
Hort 201* Honors, offered Fall and Spring.
Hort 205 Plant Propagation (transfers to K-State as Hort 350, Plant Propagation), offered Spring.
Hort 214 Woody Plants 1, Deciduous (transfers to K-State as Hort 374), offered Summer and Fall.
Hort 215 Woody Plant 11, Evergreens (transfers to K-State as Hort 375), offered Spring.
Hort 220 Herbaceous Plants (transfers to K-State as Hort 376), offered Summer and Fall.

Hort 225 Plant problems, offered Spring
Hort 235 Landscape Maintenance and Techniques, offered Fall.
Hort 240 Turf Grass Management 11, offered Spring.
Hort 255 Landscape Pest Control, offered Fall.
Hort 260 Horticulture Soils, offered Spring.
Hort 265 Landscape Construction, offered Spring.
Hort 270 Horticulture Internship (not a lecture or lab course), offered Summer, Fall and Spring.

We offer multiple sections of Hort 115, Hort 135, Hort 201, Hort 205, Hort 214, Hort 215, and Hort 220.

For core transfer courses such as Hort 201, Hort 205, Hort 214, and Hort 215, we use the same text books and lab manuals as K-State.

For detailed course information please visit:
http://classsearch.jccc.edu/student/ClassSearch/class/results?query=hort&s=&term_type=Credit

The relevancy of each of these courses to the Hort program at JCCC is discussed in section 6 (Curriculum reflection).

2 Program Resources

ProgramReview data2014 [PDF 716 KB 11/27/14]

3 Reflection on Institutional Data

Program Resources:
Student credit hours and enrollment by faculty type.

Since the program inception in 2006-07, this program/department has only had one full-time faculty member, Dr. Lekha Sreedhar (me), who is currently serving as Associate Professor/Chair of the Department. However, with active recruitment from the industry and K-State there has been a significant increase in our adjunct faculty pool. Five of the Horticultural Sciences advisory board members also teach for the program.

The data on student credit hours and enrollment by faculty type provided by JCCC's Office of Institutional Research (IR) for academic year 2013 -2014 is incorrect. They have shown two full-time faculty members, each for fall and spring 2013. For Fall 2012, the additional full-time faculty member listed is Stu Shafer, Professor of Sociology and Chair of the Sustainable Agriculture Certificate (SAG) program. Professor Shafer has been the Chair of SAG program since 2008, has no academic credentials in Horticultural Sciences, has never taught a course for this program, and reports directly to the Science Division Dean. It is my understanding that SAG is also undergoing a program review this year. So, I do not understand why Prof. Shafer is listed as a full time faculty member in the Horticultural Sciences department. For Spring 2013, the additional full-time faculty member listed by IR is Mary Harmon, Associate professor, Biology who has taught just one Hort course, Hort 150 Fruits, vegetables and Herb Crops, a 2 credit elective with 7 students. Prof. Harmon also reports directly to the Science Division Dean and does not have any academic credentials in Horticultural Sciences. These mistakes were acknowledged by IR and the message I received from the assessment office after repeated emails to correct the data was "Per my discussion with Andy and my email to you yesterday, we are not planning to rerun the data. As with the pilots, we believe you can address these issues through the narrative in Program Review".

To my knowledge, the end goal of the program review process is to assess program quality, currency, and determine future direction, by analyzing components of the instructional program including instruction, curriculum, support services and administrative support. Therefore, for the process to be effective, every effort should be made by IR to provide accurate data pertaining to the program.

The total student credit hours offered, decreased from 879 (2011-2012) to 762 (2012-13) and then increased slightly to 804 (2013-14). This fluctuation is because of class cancellations when there are less than 10 students enrolled in classes, mainly electives.

Enrollment by faculty type: Since I am the only one full time faculty member and I am also the Chair of the program, there are restrictions on how many courses I can teach. I was hired in 2006 as the only full-time Horticultural Sciences faculty member. The program was approved by Kansas Board Of Regents (KBOR) in 2007. Since then, I have developed and taught nine courses (Hort 201, Hort 201H, Hort 205, Hort 214, Hort 215, Hort 220, Hort 225, Hort 260, Hort 270) for the program. After becoming Chair of the program in 2010, because of the administrative responsibilities associated with the job, I only teach 9 credit hours/semester. Since then our adjunct pool has increased considerably. In 2012, the ratio of full-time to part-time was 1:2.8, and in 2013 it was 1:2.1. Data for 2014 should be the same as 2013.

Enrollment data for Horticultural Sciences based on science division data, first day of semester. In the Science division, it has been a tradition to look at enrollment the first day of class. This data is useful to calculate revenue for the program. Not all students who take Horticulture courses declare Horticulture as a major (DOM). Therefore, enrollment cannot be based on DOM.

NA = data not available.

Year***** Spring ****Summer**** Fall *** Total
2006 **** NA ****** NA******** 191
2007**** 121****** NA ******** 212
2008 **** 139***** NA ******** 182
2009***** 113 ***** NA ********* 207
2010***** 133**** NA ******** 200
2011***** 181**** 10 ******** 177 *********368
2012***** 130 ***** 29 ******** 134 ***** 293
2013***** 93 ***** 19 ********* 135*******242
2014**** 129 ****** 34 ********* 186 **** **349

Average Class Size, completion, success and attrition: Enrollment data since Fall 2006, clearly shows steady Fall and Spring enrollment since the program inception in 2006-2007. Since 2012-2013 was a drought year, the green industry in this greater Kansas City area suffered significantly. This crisis is reflected in our enrolment data for those years. Horticulture enrollment for Fall 2014 is currently at 186+ students which equates to a 42% increase in enrollment from last Fall. Two classes, one section of Woody 1 and Arboriculture, were cancelled even before registration opened up for Fall semester. Except for two lean years (2012 and part of 2013), overall Fall enrollment of >180 students is respectable. Our Fall to Spring retention/persistence is on par or higher than JCCCs persistence rate of 66%for College-wide retention.

We offer few courses in summer because our students work during summer months in the industry or K-State, either as seasonal employees or as interns. The money they make from such employment helps them come back in Fall to complete the program. This is another reason why we started offering hybrid classes since 2010. For hybrid classes, lecture material is posted online. Students are expected to read the lecture notes and relevant text book chapters before coming to class. In class discussions and laboratory work help cement concepts and techniques they learned in class.

Average class size for this program as per IR data is low for several reasons. First and foremost. as discussed before, SAG program courses have Hort prefix. SAG courses over the years have consistently had low enrollment (2-8 students/course). Some of these courses are mixed in with Hort courses. Another reason is Hort elective courses. For any degree or certificate there are core courses and electives. For Horticultural Sciences we have to offer diverse electives because the industry is very diverse. Examples of some of the electives we offer are Hort 165 Arboriculture and Hort 150 Fruits, Vegetables and Herb crops. Some of these elective courses have low enrollment. However, we have to offer these electives to meet the needs of the industry. Another reason for the low average class size is because Hort 270 Internship is counted as a regular course session. This internship course is offered all three semesters. However, this internship as the title indicates is a capstone course where students take up employment in the industry. It is not a regular lecture or lab course. Students work 320 hrs in the industry or K-State to complete this internship, i.e. more of a job training than a course. For Hort 270, a 3 credit course, the teaching load is just 1 credit hour for up to 8 students. For

calculating average class size for Hort program, Hort 270 internship and all SAG courses should be excluded. As of Fall 2014, in an effort to increase average class size, we are offering some electives only every other year.

IR Data on % completers for all courses is in the 92 - 95% range for all three academic years under study. This high retention % in the program is quite an achievement and speaks volumes about both faculty and student commitment to the program. The % completer success has gone up from 75% in 2011 to 85% in 2013. As indicated earlier, retention is quite high in the program which translates as lower attrition rates (< 7%).

Course Completion, Success and Attrition by distance learning and on-campus courses by Course #.

IR collects enrollment data only the 20th day after classes start. Therefore, IR data that was provided for this report does not match some of our data from the first day of class. For all the courses we offer completion rate equals and in some cases exceeds JCCCs overall completion rate of 88.9% over the last five fall semesters. So also is the case with success rate (those students receiving an A, B, C, or P grade as a percent of students completing the course). JCCCs average is about 82% and as for our classes they are either on par or higher. The attrition rate for courses overall at JCCC was 9.9% in fall 2013 and that is more or less the same for Horticultural Sciences also.

The following analysis of each course is based on IR data collected the 20th day of the semester:

Hort 115, Home Horticulture. This elective course has been offered since 2012 Fall. Percentage completion for this course is 92-96% and completer success is 83%. Great introductory course for students interested in Horticultural Sciences, but under-prepared for the rigorous curriculum required for Horticultural Sciences AAS.

Hort 135, Landscape Design. This F2F course was offered Fall and Spring. However, since average class size is only 12 students, as of this year we will only be offering this course every fall. This is a required course for Landscape Technician Certificate and Horticultural Sciences Certificate, and an elective for Hort AAS. % completion has fluctuated from 83 % in 2011 to100% in 2013. Completer success has increased from 70- 88%. Attrition rate for this course has improved from 17% in 2011to 0% in 2013.

Hort 140, Turf 1. Required F2F course for all three programs we offer. 100% completers and 86-92% completer success.

Hort 150, Fruits, Vegetables and Herb crops. This F2F elective course has low enrollment. Currently this course is offered during spring. Starting this year, we will be offering this course in summer to make use of the growing conditions during our long summer months. Although this course has low enrollment, there is 100% completion and 70-91% completer success.

Hort 160, Garden Center Operations. This F2F course is a required course for AAS Hort. Course is offered F2F only in summer when generally our enrollment tends to be low. 100% completion and 100% completer success.

Hort 165, Arboriculture. This F2F class is an elective for AAS. This course prepares students for the certification exam to become an ISA Certified Arborist. Average enrollment is 11. Therefore, starting this year we will only be offering this class every other fall. % Completion is 80% and completer success is 87-100%.

Hort 201. Introduction to Horticultural Sciences. Introductory course required for all three programs we offer. The course outline and content for this course matches that of K-States Hort 201, Principles of Horticultural Science. We offer hybrid sessions and F2F sessions for this course. IR data shows average class fill for F2F course in the 25-28 range for two sections. % completer 83-96%, % completer success 50-71%. Attrition is high some years (14%) and low in other years as in 2012 (4%). As for the hybrid session, class size was 15 in 2011, 24 in 2012 and 17 in 2013. % complete is >80%. %completer success was low in 2011 (46%). However, since then that number has increased to >70%.

Hort 205. Plant Propagation. Transfers to K-State as Hort 350, Plant Propagation. We offer one F2F session and one hybrid session. Hort 201 is a pre-req for this course. Completion is 100% and % completer success is >85%.

Hort 214, Woody Plants 1, Deciduous. Required course for all three programs. Transfers to K-State as a core requirement. % complete is >90% and % completer success is >70% for hybrid and > 85% for F2F.

Hort 215, Woody Plants 11, Evergreens. Required course for all three programs. Transfers to K-State as a core requirement. F2F and hybrid sessions offered. % complete and % completer success is >80% for both sessions.

Hort 220, Herbaceous Plants. Required course for all three programs. Transfers to K-State as a core requirement. F2F and hybrid courses. % completion and % completer success is >85% for both sessions.

Hort 225, Plant Problems. Required course for AAS. Hybrid course. Transfers to K-State as an elective. %complete is 100% and % completer success is 77-100%.

Hort 235, Landscape Maintenance and Techniques. Required course for all three programs. % complete is 88-94% and % completer suucess increased from 53% in 2011 to 86% in 2013.

Hort 255, Landscape Pest Control. Through this course we offer training for students to become State-certified. Students have to take the Certification exam on their own. Enrollment in the 8-16 range. Since there is no lab component to this course, as of Fall 2014 we are offering this course as a 5-week on-line course. % complete is >88% and % completer success has increased from 67% in 2011 to 100% in 2013.

Hort 260, Horticulture Soils. Required course for AAS. Enrollment is 15-22. 94-100% complete and % completer success is 77-80%.

Hort 265, Landscape Construction. Required course for Hort AAS. Average class size is 10. 100% complete the course and % completer success is 89-100%.

Hort 270, Horticulture Internship. Required capstone course for AAS. Elective for other two certificates. For this course, students intern for 320 hrs (16 weeks x 20 hrs/week) with a green industry business, K-State or a Government agency of their choice. This course prepares the student for the workforce, upon graduation.

Number of degrees/certificates awarded:

There is no selective admission to this program. Therefore, we have a wide range of students in the program. Our student demographics include traditional students, non-traditional students, transfer students, students with degrees in other majors, students who are looking to take just one or two classes, students looking to change career, students seeking a second career, and students seeking to advance/further their career. This program is also a relatively new program with a significant number of students going to school part-time. Every year we have about 60-85 students declare Hort AAS as their major.

The KS Board of Regents, who sets the guidelines for threshold of importance of programs, seems to be weighted towards career oriented programs, which definitely works in our benefit. However, the horticulture program has a disadvantage when you look at actual completion rates. Many students go straight into a 4-year program without getting the Associates degree first. From my conversations with Dr. Stu Warren, Chair of the Horticulture Program at K-State, it was obvious there is a significant number of students who transfer to K-State (please see attached letter from Dr. Stu Warren). Likewise, many students go directly into the industry before completing the program due to the abundance of well-paying jobs for students who have had some course-work at JCCC. In addition, sometimes students enroll with the intention of only taking a few courses to enhance their personal knowledge

while others enter the program as a second career, already having a 4-year degree. It should be noted that JCCCs average graduation rate is approximately 20% (Source: IR). Therefore, campus-wide efforts are required to improve retention and graduation rates for all programs.

A fall 2012 survey of undergraduate students at JCCC suggests that while students have a variety of reasons for enrolling in classes, their main goals are to find employment or prepare for transfer to four-year colleges and universities. According to the study, 0.5% were reviewing basic skills, 5.4% were improving skills for their present job, 9.8% were preparing to change careers, 10.6% were pursuing personal interests and working on self-improvement, 11.5% were exploring career paths, 12.2% were preparing to enter the job market, 13.8% were undecided, and 36.2% were preparing to transfer to a college or university (Survey information from IR).

Area green industry businesses like Suburban Lawn and Garden and Loma Vista reimburse their employees for schooling, but do not typically cover electives nor do they offer incentive for completion of program. The Horticulture program at JCCC is unique in this area and addresses the needs of the horticulture industry in Greater Kansas City and Douglas County. Because of these factors, this program has the potential to solidify its niche in the industry while working towards higher graduation rates. The corporate advisory board members are aware of the program needs and are considering tuition reimbursement for all courses as well as offering possible incentives for completion. Additionally, sponsorship funds from our annual Horticultural Sciences Day and revenue from the annual plant sales of the Horticultural Sciences Students' Association (HSSA) have allowed set-up and distribution of scholarships exclusively for Hort students, so they can graduate on time.

As stated earlier, green industry (ornamental horticulture) in Kansas is a billion dollar industry. A 2012 study released by JCCCs Office of Institutional Research indicates that all graduates who participated in the study are successfully employed full time with an average hourly wage of $20.00 (http://www.jccc.edu/files/pdf/program-outlooks/horticulture.pdf). The number of well-paid jobs in this industry exceeds the number of Horticulture students enrolled at JCCC. Therefore, some students choose to work full-time and enroll part-time at JCCC.

Our program receives Carl D. Perkins program improvement grants from the U.S. Department of Education. This grant is based on the number of concentrators in the program. A concentrator as per the Kansas Board Of Regents (KBOR) Carl Perkins handbook is a postsecondary student, with a Declared Major in a Perkins approved program, who has passed 12 tiered credit hours in that major over a three year time period. This is again proof that we have a significant part-time pool of students. Perkins grants are funds that are intended to help the continued improvement of vocational and technical education. The Perkins funds we receive is used for purchasing much needed equipment and laboratory supplies, travel to conferences for professional development, and sponsorship to invite speakers for the annual Horticultural Sciences day.

Number of graduates transferring: We have a 2+2 agreement with K-State. IR does not collect data on students who transfer to K-State. Since 2006, there has been three Horticulture Department Chairs at K-State. I have maintained excellent relationships with all three Chairs. However, this frequent change in leadership at K-State has been a problem in gathering transfer data at my end. The attached letter from Dr. Stu Warren (Chair of K-State HFRR Department from 2008-2014), although written for my Distinguished service award nomination, clearly makes references to our students and their success at K-State.

Percent of graduates working in a related field: This data is based on % of students responding to the survey. Data is incomplete and inconclusive. IR data also shows that 50% of AAS students, 100% of Horticultural Sciences certificate students, and 100 % of Landscape Technician students work in a related field.

Expenditure and Revenue: Data is provided on student credit hours and cost per credit hour for 2012-2013 and 2013-2014. Since Sustainable Agriculture Certificate (SAG) program courses have the same prefix as us (Hort), most likely the data on cost per credit hour provided by IR, i.e. $319.99 and $334.73, respectively, includes SAG program costs also.

As for our annual budget, our budget for 2012-2013 was $224,689.12 and 2013-2014 was $225,

158.00. For academic year 2014-2015, in an attempt to reduce cost, I requested only $209, 697.42. This includes salaries, benefits, travel, and supplies.

As for revenue, since Horticultural Sciences is also a career (technical tiered) program, KBOR reimbursed the college $104, 888 dollars, and $158, 863, respectively for 2012-13 and 2013-14. There was also tuition reimbursement of $63,635 and $68,014 respectively for 2012-13 and 2013-14. Therefore, total revenue for 2012-2013 was $168,523.00 and for 2013-14 was $226,877.00.

Total expenditure and total revenue are on par for 2012-2013 and 2013-2014.

It should be duly noted that since 2008, Sustainable Agriculture Certificate program (SAG) and Foral Design program (FLR), have operated independently with their own program Chairs. However, these programs share HSC building and Greenhouse space with Horticultural Sciences. Also, the services of the GH Manager, Stephen Young. However, there has been NO cost-sharing between these programs. Horticultural Sciences encumbers all costs.

K-State Chair letter [PDF 92 KB 3/20/15]

4 Student Success

Student success for this program can be assessed several ways. Since this is both a career program and a transfer program, end goal is to make sure our graduates have successful careers in the industry or transfer to K-State. Our curriculum is geared towards giving students a strong background in applied plant science (Horticultural Sciences), to promote critical thinking and develop problem-solving skills. Through our capstone internship course, Hort 270, students demonstrate knowledge and skills acquired to potential employers. These internships have often resulted in well paid, full-time careers for our students. A 2012 study released by IR indicates that all graduates who participated in the study are successfully employed full time with an average hourly wage of $20.00 (http://www.jccc.edu/files/pdf/program-outlooks/horticulture.pdf). Several of our students start their own Landscape Maintenance business after they graduate from our program.

The Bureau of Labor Statistics (BLS) predicts an average of 12% job growth in the horticultural industry between 2010 and 2020. Job opportunities for landscapers, groundskeepers, and nursery workers are expected to grow 18% (http://www.lwtchort.com/horticulture-jobs.html).

As for transfer data, IR only provides data on students who transferred to University of Kansas and not K-State. However, based on conversations I have had with the Chair of Horticultural Sciences at K-State, there is a significant number of students transferring to K-State every year. Faculty at K-State are very pleased with the quality of our curriculum and instruction. Please see attached letter from K-State Horticultural Sciences Department Chair in section 3.

Our annual Horticultural Sciences day is also a career day for our students. Several prominent local green industry businesses, K-State, USDA, KDA, and Missouri Dept of Ag set up exhibits, so students can network and find jobs/careers. This a great way to introduce students to the industry and vice-versa. Our Horticultural Sciences day is held every year in February, because that is when employers start hiring for their businesses. Prominent businesses such as Suburban Lawn and tree, Hermes Landscaping, Family Tree Nursery, Loma Vista Nursery and a few others have booths at the the Horticultural Sciences day every year and recruit directly.

Attached are a few internship/seasonal/career opportunities that were emailed to me this year. I have also attached a few letters and recent emails from graduates of the Horticultural Sciences program, who have successful careers/jobs in the industry.

1. Email dated 1/15/2015 from Austen.

Dear Lekha,
I am a former graduate of the Horticulture program at JCCC. My name is Austen Gearheart and I am currently the superintendent at Prairie Highlands Golf Course in Olathe, Kansas. I will be hiring seasonal employees starting the first week of March, and was wondering if it would be possible to put a

job posting on the board inside the Horticulture building on campus. If this is possible I will send you a flyer for the board.
Also, I was wondering if you had anyone looking for internships on the golf course. Having completed my internship for JCCC, I understand what is expected of the interns before graduation. I would appreciate it greatly if these things are possible. I look forward to hearing from you.

Sincerely,

Austen Gearheart

2. From Aaron Espe dated 02/19/2015

Lekha,

Hope you are doing well! This is Aaron Espe. I graduated from the horticulture program in 2010. I know that students at that time needed an internship to finish their graduation requirements. If that is still in place than I have a question for you. I currently oversee the horticulture and landscape department for Brookridge Country Club in Overland Park, KS. We are under new management and have been told to also take care of the grounds of a large upscale apartment complex also in Overland Park. My job duties at the golf course and apartment complex involve ordering all annual plants for the properties. Layout and design of annual beds, pots and containers. Maintenance of all woody perennials, trees and shrubs on both properties. Watering, fertilizing, controlling pest problems of all said plants. Landscape maintenance of both properties including irrigation and sprinkler testing and repair. Anyway, with this new work load of the apartment complex this year my boss is looking for someone to help me with these duties. I told him that I would like to contact you and see if setting up an internship with one of your students would be a good way to go. I know most of the students there would more than likely be familiar with plant varieties and knowledgeable on plant care and maintenance. If this sounds like a decent idea to you please feel free to let me know the next step in this process. Thank you for your time with this matter. Aaron Espe.

Over the years our graduates have attained successful careers in several local businesses, K-State, and even out-of-state enterprises. Last year one of our students, Kimberly Oxley, was hired as a full time lab associate at K-State, Olathe, after she completed Hort 270. Kim made the initial contact with k-State at our annual Horticultural Sciences day. To keep track of at least some of our graduates, I maintain an email list.

Anna [PDF 212 KB 4/8/15]
Hort Internships and career opp2015 [PDF 854 KB 3/20/15]
Hort summer jobs 2 [PDF 2,101 KB 3/23/15]
JCCChortletterfrom student [PDF 118 KB 3/23/15]
Jessica [PDF 340 KB 4/8/15]
K-State Chair letter [PDF 92 KB 3/23/15]
seasonal jobs & internships [PDF 2,376 KB 4/8/15]
Summer 2015 more Hort jobs and internship opp [PDF 546 KB 4/28/15]

4.1 Define Student Success

Student success is achieved by:

1. Persistence: to successfully complete courses they are enrolled in
2. Retention: attainment of a Certificate, AAS degree, or other educational goal.
3. Transfer: achieve seamless transfer to K-State at the junior level
4. Career/transfer success: students attain and succeed at subsequent educational and occupational endeavors for which our program is designed to prepare them.

4.2 Achieve/Promote Student Success

Student success for Horticultural Sciences is achieved by:

1. helping students set appropriate goals and expectations based on their educational and personal background.
2. helping students chart out a plan of study for the completion of their academic goals.
3. providing guidance when needed for course selection every semester
4. providing academic advising when needed to help the students pursuit of academic goals.
5. by allowing course substitutions on a case-by-case basis
6. by periodically reviewing and renewing the 2+ 2 articulation agreement we have with K-State
7. by providing networking opportunities with industry, K-State and Government agencies, so students can find internship opportunities and successful careers.
8. providing scholarship opportunities.

Items 1-5 listed in this section are achieved by providing one-on-one academic advising by me to students who either stop by or make appointments to discuss their plan of study.

Item #7 and 8 are achieved by networking and organizing outreach events such as the Horticultural Sciences day. This year, I again organized and hosted the 5th annual Horticultural Sciences day Feb 20th, 2015. This event which I initiated five years ago is open to the public and helps recruit students to Horticultural Sciences at JCCC, provides information about career opportunities in horticulture and brings together speakers from academia, business and government to initiate discussions and share views on varied topics relevant to 21st century horticulturists. Attendees are able to network with faculty from K-State, industry leaders, and horticulturists from government agencies who set up exhibits at the event. The theme for this years event was 21st century Horticulture: Innovations, Trends and Challenges. Videos of this event can be found at http://www.jccc.edu/academics/agriculture/horticultural-sciences/tab-credit.html#.VT_fZIIlwwk.

This year, for the all-day event, apart from several regional Speakers and Canada who shared their views on 21st century horticulture, there were also 29 exhibits including K-State, Kansas Department of Agriculture, Missouri Department of Agriculture, US Department of Agriculture, and several green industry businesses. Horticultural Sciences is a very broad, diverse discipline. Our annual Horticultural Sciences day, in addition to introducing students to the Hort industry, also helps students find their niche in the industry. This year again, more than 400 + people, including Horticulture students from Olathe South, Olathe North and Olathe NW, attended the event.

Through outreach activities such as this, I strive to maintain close ties with potential employers in the community and K-State, not just for internships, but also for currency and relevancy of the Horticultural Sciences curriculum.

Thus far, this event has raised more than 9K in external sponsorship funds that will be used exclusively to provide scholarships to students enrolled in the Horticultural Sciences program at JCCC. Horticultural Sciences day is organized, hosted and promoted using sponsorship funds and not the Horticultural Sciences department budget, which is used exclusively to purchase supplies for various classes and GH.

Attached are a few examples of scholarship opportunities available to students enrolled in JCCC's Horticultural Sciences program.

Scholarships for JCCC Hort students [PDF 627 KB 3/23/15]

4.3 Successful Transfer

Yes. JCCC Horticultural Sciences has 2+2 transfer articulation agreements with K-State's Horticultural Sciences Department.

1. For Horticulture B.S. http://www.jccc.edu/files/pdf/counseling/transfer-programs/ksu-horticulture-bs.pdf
2. For Golf course management or Sports turf Operations Management B.S http://www.jccc.edu/files/pdf/counseling/transfer-programs/ksu-horticulture-bs-golf-turf-mgmt-specialization.pdf.

At K-State, for B.S Horticultural Sciences, students have to complete 29 credit hrs of core Hort courses before they take additional courses to specialize in different fields. e.g. golf course management. The transfer

agreement we have with K-State allows our students to transfer 15 Hort credit hrs, i.e 50% of core Hort course work from JCCCs Hort program to K-State at the sophomore and junior level.

K-State has requested that a faculty with background in horticultural sciences and a doctorate in a plant science field teach our Intro to Hort (Hort 201) and Plant Propagation (Hort 205)courses. I concur with K-State in that a "plant science based doctorate is necessary to present the course materials to a depth of knowledge required for a bachelor of science or a further advanced degree. i.e. the reason for seeking transfer credit."

Intro to Hort (Hort 201), Plant Propagation (Hort 205), Plant problems (Hort 225)and Horticultural Soils (Hort 260) courses are science intensive courses. They are the important science foundational courses upon which all other horticulture courses are built. Most of the other courses we offer relate to the art, the practice of applying horticultural science to achieve the productive and aesthetic qualities horticulturists desire and strive to attain and maintain.

For Hort 201 (Intro to Hort), Hort 205 (Plant Propagation), Hort 214 (Woody 1), and Hort 215 (Woody 2), we use the same textbooks, lab manual, and plant lists as K-State.

For Hort 201, the text book we use is 'Sustainable Horticulture', Poincelot, P.R. Pearson Education.

For Hort 205 the text book we use is the same text book (different edition with two more authors) I used when I was an undergrad student, i.e. Plant Propagation, Hartman and Kester. Most Universities and Colleges use this text book. Recently, upon invitation, I reviewed the 8th edition of this text book. This indeed is an honor considering how invaluable this text book is for educators world-over.

Fort Hort 214 and Hort 215, we use 'Manual of Woody landscape Plants", Michael Dirr.

At K-State, last year Hort 374, Hort 375, and Hort 376 were modified to develop Hort 374 and Hort 375 (Landscape Plants 1 and 2). As the attached transfer agreement shows, K-State will accept our Hort 214, Hort 215, and Hort 220 at the junior level as transfer equivalencies for their Hort 374 and Hort 375. Since the Horticultural Sciences Program at JCCC is also a career program, it is best not to change the course content of Hort 214, Hort 215 and Hort 220 that we offer. The plant lists for these courses is from K-State. Collectively these three courses familiarizes our students with almost all plants used in landscapes in this region. Text book for Hort 214 and Hort 215 is "Manual

Attached is a letter from K-State's Horticulture Department Chair Dr. Stu Warren (Chair from 2008- 2014) acknowledging transfer students from JCCC. This letter, although written in another context, still provides proof that a significant number of JCCC Hort students transfer to K-State.

K-State Chair letter [PDF 92 KB 3/20/15]

k-State transfer [PDF 1,311 KB 3/23/15]

5 Assessment of Student Learning Outcomes

Assessment&CurriculumChart [XLS 41 KB 9/2/14]

5.1 Reflection on table provided on assessment.

Assessment data 2014 [XLS 43 KB 11/18/14]

5.2 Significant Assessment Findings

No formal assessment yet for courses in this program. However, I do administer mock exams before and after some lectures for Hort 201, Hort 205, Hort 214 and Hort 215, to see : 1. if students come prepared for class 2. if students have understood lecture material after class.

Over the last couple of years, I have had several discussions with my adjunct faculty regarding the importance of assessing student learning outcomes. Thus far, our contention has been that for a program as successful as ours, in terms of enrollment, transfer, career options and much more, additional assessment is not required. However, this Spring at least one adjunct faculty member is conducting assessment in one of his classes.

5.3 Ongoing Assessment Plans

Attached is the assessment plan for 2015-2016. I will be meeting with the assessment office soon to discuss the proposed assessment plan.

Since Horticultural Sciences is a career/transfer program, none of our courses qualify for general education status.

Assessment plans for 2015 [XLS 40 KB 11/18/14]

6 Curriculum Reflection

At JCCC, students enrolled in the horticultural sciences program learn how to grow healthy food, essential plants, design, create and manage sustainable landscapes, manage golf courses, sports fields, arboretums, botanical gardens, as well as plant and manage community and private gardens.

Our comprehensive, cohesive curriculum emphasizes sustainable best management practices including integrated pest management (IPM), that will conserve and protect our irreplaceable natural resources. In 2010, upon my recommendation, our Greenhouse was fitted with an insect barrier screen to manage pest populations in the GH, so we can reduce pesticide sprays.

Highlights of JCCC's Horticultural Sciences program:

1. It is both a career program and a transfer program
2. The only program of its kind in the metro area
3. Number of well-paid jobs exceeds the number of graduates
4. Courses are offered to area High Schools through College Now
5. Students have the option of adding a 7 -credit fast paced business certificate if they are interested in starting their own businesses.
6. It is a Perkins-funded program.
7. Some courses like Hort 265, Hort 205, Hort 220, Hort 150 have an additional course fee ranging from $50.00 - $100.00/student, which I am told is a critical component of the annual Hort supplies budget (approximately $14,500 for 19 courses with labs and Greenhouse supplies).
8. Our program is tiered-technical program, and therefore eligible for significant KBOR revenue.

After I joined the faculty here in 2006-2007 as Assistant professor, Horticultural Sciences, I interned with three local prominent green industry businesses to get a sense of what the industry is looking for in our graduates/students. This was possible because of a small scholarship I received through Career Pathways. One aspect that stood out from my discussions with different business owners and managers is that they were not looking to hire more basic level employees. They had a fairly large Hispanic labor force at their disposal. The demand was for students with good inter-personal skills who could lead a team. They emphasized the need for graduates with credentials in Horticultural Sciences, excellent critical thinking skills, and problem-solving skills. Most employers also stressed the importance of incorporating Spanish in our curriculum, since the local labor force is predominantly Hispanic.

Sometime in 2007, I also met with the Chair and faculty of the Horticultural Sciences Department at K-State to better understand transfer expectations. Subsequent development of courses and adjunct hiring for JCCC Horticultural Sciences program were all based on the input I received from the industry and K-State.

The Horticultural Sciences department at JCCC offers 19 courses in various specializations within Horticulture. e.g. Horticultural Science specialization, Landscape Design specialization, Landscape Management specialization, and Greenhouse Production specialization. These courses are offered in a variety of formats: F2F, hybrid, online. They are also offered for different lengths of time: 16 weeks, 12 weeks, 8 weeks, and 5 week courses. Courses are offered week days from 8:00 AM to 9:00 PM and Saturdays from 9:00 - 3:00 PM to accommodate the needs of full-time and part-time students. Every semester, we re-visit the course offerings to ensure academic rigor, student success, and % completion. Attached is a copy of our program brochure. The program brochure is frequently updated with help from JCCC's Publication department to ensure we provide accurate information to our students. Most of the photographs in the brochure are those of our students and faculty. This gives our

students a sense of belonging and ownership.

It should be noted that our introductory Hort course, Hort 201, Intro to Horticultural Sciences, is an 200-level science course. Title of the course Hort 201, Intro to Horticultural Sciences can be misleading. Hort 201 transfers to K-State at the sophomore level as Hort 201, Principles of Horticultural Science. We use the same course outline, text book, and lab manual as K-State. In addition to providing solid science foundation and some knowledge of plant science and Horticulture, this course also helps develop critical thinking skills, problem diagnosing skills, and writing skills (lab reports), that are required for other courses in the program. In my view, Hort 201 is the most challenging course in the program, both for students and the instructor alike. Ideally, Botany (Biol 125) should be a pre-requisite for Hort 201. In botany, using layman's terms, you learn about plants (pure science). In Horticulture you learn about plants, how to grow plants, and how to use plants (applied science). At JCCC, for Hort AAS, Biol 125 Botany (5 credit hr)is a co-requisite for Hort 201 (4 credit hr) the very first semester. K-State also recommends High school biology/botany or concurrent enrollment in botany for Hort 201.

At JCCC, to my knowledge, Botany is taught as a survey course where all three kingdoms, namely protists, fungi and plants are surveyed. For students in the Horticultural Sciences program, the morphology and physiology of vascular plants is what sets the foundation for other aspects of Horticulture. With restructuring of the Plant Kingdom, modern day Botany as offered in most Colleges and Universities, gives very little importance to protists and mycology, and places more emphasis on morphology and physiology of vascular plants. From what my students tell me, student retention is also a serious concern in this 5 credit botany course. These issues have been discussed at all curricular administrative levels at JCCC and the Horticultural Sciences Advisory Board for at least the last 4- 5 years. We even considered developing a new course called Botany for Horticultural Sciences. For now, I am holding off on this proposal because another botany course will cause redundancy and repetition. Recently, I was told by our science division Dean that within the next year or so, BIOL 125 Botany will be undergoing curricular alignment (Kansas Core Outcomes Group Project (KCOG) to articulate core outcomes for courses to be recommended for system-wide transfer) with other Colleges in KS. Once this is done, we will have to revisit this issue.

K-State has requested that either me or another faculty member with a graduate degree in horticulture and a doctorate in a plant science field teach the Intro to Horticultural Sciences (Hort 201) and Plant Propagation (Hort 205) transfer courses. A plant science based doctorate is necessary to present the competencies to a depth of knowledge required for a bachelor of science. These courses along with Hort 260 Horticultural Soils and Hort 225 Plant Problems, are the science foundational courses upon which all other horticulture courses are built upon. Hort 201 is a pre-requisite for Hort 205. Hort 205 transfers to K-State as Hort 350 Plant Propagation.

Currently Hort 201 and Hort 205 are taught by Dr. Seckinger and me. My colleagues (Dr. Seckinger, Dr. Stevens) and I have added some extra labs to these courses to provide additional hands-on training for students not transferring to K-State. Through various lab exercises, in addition to learning techniques, students also learn to collect data from experiments, analyze data, interpret data and write lab reports. Currently, we offer three sections of Hort 201 and two sections of Hort 205.

In terms of complexity of the subject matter, some of the introductory courses in Biology such as BIOL 135, Principles of Cellular and Molecular Biology, (freshman course required for all biology majors at most Colleges and Universities), and BIOL 230, Microbiology, which I have taught before, are much more difficult that Hort 201. However, it is the perception by some incoming students that 'Horticulture is gardening' that causes the problem. Over the years, I have had several discussions with our Science Division Dean regarding some of the challenges associated with teaching Hort 201 the very semester, to a class with different levels of academic preparation and credentials. In previous years, in our schedule, we had a footnote for Hort 201 suggesting that some HS course work in Biology would be helpful to succeed in this course. As of 2012, to help non-traditional students and students who have not had any HS biology succeed in Hort 201, we are offering Hort 115 Home Horticulture, both in Fall and Spring as a two week late start course. Counselors are regularly updated of these changes, so they can advise students accordingly. I am currently working with our Science Resource Center to see if our students can get some tutoring at least a few hours every week for this course.

As of 2013, we have started offering Hort 115 at four area High Schools (HS) in the Olathe School

District through College Now. Enrollment in this class doubled this year (53 students in total). In addition to being a great recruitment tool, offering Hort 115 at HS also ensures some level of academic preparation for AAS Hort.

I am hopeful that community outreach/recruitment events such as our annual Horticultural Sciences Day and my frequent visits to various High Schools to talk about our program will help quell this gardening misconception about Horticulture. For e.g. this year after students from Olathe Northwest High School attended our5th annual Horticultural Sciences Day, their teacher Camden Burton emailed me a thank you note which said 'I know I had several students responding afterwards how they didnt realize what opportunities horticulture provided them, I think some of them thought it was just a gardening profession'.

Intro to Horticultural Sciences (Hort 201), Plant Propagation (Hort 205), Plant problems (Hort 225)and Horticultural Soil Science (Hort 260) courses are science intensive courses. They are the science foundational courses upon which all other horticulture courses are built upon. Some of the other courses we offer relate to the art, the practice of applying horticultural science to achieve the productive and aesthetic qualities horticulturists desire and strive to attain and maintain. e.g. Hort 135 Landscape Design, Hort 235 Landscape Maintenance and Techniques.

Hort 225 Plant problems is a multi-disciplinary course. Course content includes Entomology, Plant Pathology, Agronomy and Plant Physiology. This is a very useful course for students planning to work in the industry. I have developed this course to focus on plant problems of the Midwest. My power point presentations were developed using photographs of 'plant problems' provided by Kansas Department of Agriculture, Missouri Department of Agriculture and US Department of Agriculture. Plant problem diagnosis skills is critical for students seeking managerial/supervisory positions in the industry.

Upon successful completion of Hort 255 Landscape Pest management, students will be prepared to take the Kansas or Missouri licensing examination to become a certified applicator of restricted horticultural pesticides. Graduates who possess this license usually earn a higher wage than their colleagues.

Hort 165, Arboriculture course is offered as an elective every other year. This course prepares students to take the arboriculture certification exam and become an ISA certified arborist. http://www.isa-arbor.com/findanarborist/arboristsearch.aspx

Hort 214 Woody 1, Hort 215 Woody 11, Hort 220 Herbaceous Plants are the 'plant materials' courses. These courses transfer to K-State at junior level. We offer two sections of these courses. To meet transferability requirement, at least one of the sections of these courses are taught by me or Dr. Seckinger. The other section is usually taught by Mr. Boyce with over 40 years green industry experience. For students not transferring to K-State, usually I recommend the latter section. There are far more cultivars today than say 20 years ago. Therefore, to teach this course it is important we keep up with industry trends.

Hort 140 Turfgrass 1, Hort 240 Turfgrass 11, Hort 165 Arboriculture, Hort 235 Landscape maintenance and Techniques, Hort 265 Landscape Construction are technical courses required for Landscape Horticulture. These courses are heavily sought after by students pursuing a career in Landscape Maintenance and Management, golf course management, sports field management, landscape construction and much more. Students who own existing lawn care businesses or are planning to start Landscape Maintenance Companies also enroll in these courses.

Hort 150 Fruits, Vegetables and Herb crops is designed to familiarize students with some aspects of olericulture and pomology, a vital component of most urban landscapes these days. We have revitalized this course to keep up with trends in 'edible landscapes'.

Hort 160 Garden Center Operations provides knowledge and training in elements necessary to successfully manage a nursery, greenhouse, propagation facilty, or a garden center.

Hort 270 Horticultural Sciences Internship is an important course, for the student, the program and local businesses. Students are encouraged to enroll in this course after they have completed most of

the course work towards the Hort AAS degree program or the Certificate program. Students are also encouraged to find an employer of their choice, i.e. find their niche. This internship is more structured than a summer job experience. Students follow an internship plan which is explained in the 'Cooperative Internship Agreement' form signed by the employer and the student. The intern is required to submit bi-weekly progress reports to me, so I can monitor the progress of the internship. Occasionally, I visit the job-site/business to track the progress of the internship, especially if biweekly reports are not submitted on time. At the end of the internship, the on-site business supervisor evaluates the intern, and also attests to the 320 hrs work hours required to complete the internship. Students then submit a final report which is a summary of their internship experience, if and how JCCC's course work prepared them for the internship, and comments on anything else we should be doing differently at our end. Grades are assessed based on timely completion of all paper-work including contracts for the internship, biweekly reports, evaluation by the employer and the final report. For our students, these internships, provide valuable employment experience in the industry and often result in full-time jobs/career opportunities, with the same business. For the employer, these internships help identify and train potential full-time employees for their business. For our program, these internships help validate the currency and relevancy of our curriculum.

Since Horticultural Sciences is a technical program also at JCCC, almost all the courses we offer have a lab component to provide hands-on technical training required by the industry. As for the greenhouse, benches are designated as laboratory space for various courses we offer. There are also benches for stock plants that are used by students in our program to practice various propagation techniques, and a mist bench for propagation of select species. For integrated pest management as of 2009-10, we added an insect barrier screen to the east side of the GH, so we can minimize pesticide application in the GH.

In our commitment to water use effeciency, rainwater collected in a 10,000-gallon underground tank through cisterns near the front entrance of the building is used to irrigate the outside gardens where we grow plants for courses like Hort 220 Herbaceous plants.

JCCC Horticultural Sciences Advisory Board is comprised of Horticultural Science full time faculty member (me), representatives from Kansas State University and the local green industry. For a list of advisory board members, please visit: http://www.jccc.edu/academics/agriculture/horticultural-sciences/tab-credit.html#.VSWEhVIlwwk. The Board meets once a semester to give advice on curriculum and to ensure that the program is meeting the needs of area employers as well as the needs of students. Through our outreach activities such as our Annual Horticultural Sciences day and Native Plant Symposium, we strive to maintain close ties with potential employers in the community and K-State, not just for internships, but also for currency and relevancy of our curriculum. As discussed before, our capstone Hort 270 Internship course helps students demonstrate knowledge and skills learned to potential employers and often leads to well-paid career pathways in the industry and K-State.

Attached is a copy of the 2014 Advisory Board survey. As can be seen from the survey, the members have affirmed that this career program is relevant to today's industry, and that the program is meeting the needs of the local Horticultural Science industry.

201401-Horticulture Advisory Board Survey [PDF 58 KB 11/25/14]

Hort brochure. [PDF 2,365 KB 11/25/14]

6.1 Honors Contract(s)

Hort 201H, Introduction to Horticultural Sciences was developed in 2012. Our Honors course provides undergraduate research opportunity to students interested in experimentation and analysis. After discussions with their mentor, students are encouraged to pursue research projects of their choice. Students are graded on weekly attendance, literature review, research project, and a required final research report.

Each semester exemplary honors student papers and projects are published on a nationally searchable site hosted by the JCCC Library. The Fall 2013 issue of the JCCC Honors Journal published on ScholarSpace. had Terrarium Tales by Megan Gladbach. Faculty mentor for the project was Lekha Sreedhar, Horticultural Sciences (me).

6.2 New Course Offerings

No new courses were developed within the last 2 years. Horticultural Sciences at JCCC is a relatively new program. Therefore, there has not been a need to develop new courses yet. Currently the courses we offer transfer to K-State either as core courses or Hort electives. The Hort core courses we offer were developed after extensive conversations with K-State faculty and Chair of Horticultural Sciences. As has been the case at previous meetings, at the recent November 2014 Horticultural Sciences Advisory Board meeting also, members expressed satisfaction with JCCC' s Horticultural Sciences program. They were very highly pleased with the academic quality of the program, rigor, and students entering the Horticulture work-force.

7 Faculty Success

Continuous professional development is key to faculty success. Membership in professional organizations such as American Society for Horticultural Sciences, American Society for Plant Biology, Society of American Florists, Association of Horticulture professionals, and National Council for WorkForce Education has been very helpful for my professional development and continued suucess. Horticultural Sciences is a discipline that is rapidly advancing. In fact, the theme for our next year's (2015) annual Horticultural Sciences day is 21st Century Horticulture: Innovations, Trends and Challenges.

To stay current with the latest research, and keep up with the innovations and trends in the industry, I regularly attend conferences, symposiums, work-shops and trainings. This helps me bring the latest information back to the class room, and the Department. Also, update equipment and infrastructure for the program. At these meetings, I actively network and invite speakers to give guest lectures for the various courses we offer and for our annual Horticultural Science day. When I first started teaching for this program in 2006, for the labs, all I had were a few microscopes. Now, with Perkins and divisional funding, I have acquired lab supplies and equipment for almost all the labs we offer. I was also able to secure funding to renovate and maintain the JCCC green house (GH) infrastructure and computer controls. GH is valuable lab space for most courses we offer. Through JCCC's Scholar-in-Residence program, I was able to invite Dr. Murat Kacira, GH engineer and Professor, Controlled Environment Agriculture center (CEAC), University of Arizona to give a series of talks to JCCC and the Community. While Dr. Kacira was visiting, he also served as a consultant for GH infrastructure improvement.

As of 2012, our plant tissue culture lab is fully equipped and functional. With Perkins funding, we have purchased an autoclave and a Plant tissue culture incubator. Although space is limited, our plant tissue culture lab is equipped to teach in vitro micropropagation, a very important aseptic propagation technique for 21st century horticulturists.

In addition to attending conferences, and symposiums, I also enroll in online classes to further my knowledge. Recently, in 2013, I successfully completed an online Viticulture course with University of California, Davis. In 2011, I completed the Intensive Greenhouse Crop Production Training course at the University of Arizona's Controlled Environment Agriculture Center.

7.1 Departmental Accomplishments

Attachments: 2014 Horticultural Sciences Advisory Board Survey

The Horticultural Sciences Department at Johnson County Community College has grown tremendously since the program inception in 2006-2007. The department offers a Horticultural Sciences Certificate, a Landscape Technician Certificate and an AAS in Horticultural Sciences which transfers to Kansas State University.

The Horticulture program at JCCC is unique in this area and addresses the needs of the horticulture industry in Greater Kansas City and Douglas County. The collective effort of all the faculty, staff and students of this program have transformed what was once a hobby horticulture program into an exemplary, highly visible program. Student enrollment has gone up consistently over that last 7 years. A 2012 study released by JCCCs Institutional Research indicates that all Horticulture graduates who participated in the study are successfully employed full time with an average hourly wage of $20.00. This is a good measure of the program's success and highly commendable. Over the years, students

who have graduated from this program, have shown significant upward mobility in their professions.The quality and credibility of our work has won us steadfast support from Kansas State University, Kansas Department of Agriculture, Missouri Department of Agriculture, the USDA-APHIS, industry organizations, local green businesses and the community. This allows us to bring discipline-specific experts as guest lecturers for the various courses we teach, providing students additional perspectives as well as an opportunity to network and explore job opportunities. I have also pioneered hybrid sections of Horticultural Sciences courses in which students have access to lecture material/note packets online, so students in the program who work long hours can still take classes and graduate. The annual Horticultural Sciences day which I initiated five years ago is open to the public and helps recruit students to the horticultural field, provides information about job opportunities and careers in horticulture and brings together speakers from academia, business and government to initiate discussions and share views on varied topics relevant to 21st century horticulturists. Attendees are able to network with faculty from K-State and industry leaders from local nurseries, plant retail centers, landscaping companies, parks and recreation districts, tissue culture labs, government agencies and other Green industry businesses who set up booths at the event. Feedback and comments from the 500 or more attendees, i.e. employers, students and the general public, every year has been excellent.

This year, at the 5th annual Horticultural Sciences day, three Horticultural Sciences Advisory Board members were honored by Kansas Board of Regents (KBOR). The members namely, Dalton Hermes (CEO Hermes Landscaping) , Matt Stueck (Suburban VP) and Lyndsi Clear (Loma Vista, CEO) were awarded KBORs workforce education employer engagement initiative award. They were recognized at the Champion level, highest level of honor possible, for supporting and promoting JCCCs Horticultural Sciences program. To honor the nominees, in attendance at the event, was Seth Carter, Associate Director, Career and Technical Education, KBOR.

Here's the youtube video link to this year's annual Horticultural Sciences Day:
https://www.youtube.com/playlist?list=PLHhe-2tIHRqG5bHtM2dVDnwy0o-QzjY8r.

Last year, I also organized the first ever Native Plant Symposium and Native Plant Propagation Workshop at JCCC. Outreach events such as these have helped raise our visibility in the community.

To organize community outreach/recruitment/career fairs such as Horticultural Sciences Day and Native Plant Symposium, we rely on sponsorship funds, fees from workshop registration, booth registration, and lunch registration. We do not use funds from our Hort budget to organize and host these events. External sponsorship dollars (e.g. green industry sponsorships) go to a Hort scholarship fund managed by JCCC's foundation office and is distributed to eligible students annually.

Our program receives Carl D. Perkins program improvement grants from the U.S. Department of Education. The Perkins funds we receive is used for purchasing much needed equipment and laboratory supplies, travel to conferences for professional development, and sponsorship to invite speakers for the annual Horticultural Sciences day.

Additionally, using funds from local garden clubs and donations from local nurseries, in 2009, I initiated and planted a conifer arboretum/garden around HSC building, for use in classes like Hort 215. In summer months, in addition to growing stock plants in the GH, we also grow plants required for classes like Hort 220, around the HSC building. Labs for almost all core classes have the necessary supplies, plant materials, and equipment now.

As can be seen from the attached 2014 advisory board survey, the members have endorsed this career program as being relevant and important to today's green industry.

201401-Horticulture Advisory Board Survey [PDF 58 KB 11/17/14]

7.2 Faculty Accomplishments

The Horticultural Sciences program at JCCC is successful because of the collective effort of all the Hort faculty, staff and students and the collaborative partnerships we have established both within JCCC and outside JCCC.

All of our faculty, both full-time and part-time, bring unique strengths and expertize to the program. For a discipline as broad as Horticultural Sciences, it is important that teaching faculty have in addition to a graduate degree in Horticultural Sciences, either extensive research background in Plant Science or green industry experience.

The teaching profiles of the Hort faculty members can be obtained from:
http://www.jccc.edu/academics/agriculture/horticultural-sciences/tab-credit.html#.VRxvQFIlwwk

To teach courses such as Hort 201 Intro to Horticultural Sciences, Hort 205 Plant Propagation, Hort 225 Plant Problems, and Hort 260 Horticultural Soils, strong academic credentials in plant science and Horticultural sciences are required. Faculty with doctorate degrees in a plant science field are preferred to teach these courses.

To teach courses such as Hort 140 Turfgrass 1, Hort 265 Landscape Construction and Hort 235 Landscape Maintenance, in addition to academic credentials in Horticultural Science, hands-on green industry experience is required.

To teach plant material courses such as Hort 214, Hort 215 and Hort 220, in addition to academic credentials in Horticultural Sciences, experience in nursery management/green industry management is required.

To teach Hort 165 Arboriculture, in addition to academic credentials in Horticultural Sciences, ISA Arborist certification is required.

To teach Hort 160 Garden Center Operations, in addition to B.S Horticulture, garden center and nursery management experience is helpful.

This diverse need is reflected in our faculty pool. This program is unique in that five of the Hort advisory board members also teach for the program.

They are:
1. Dr. Alan Stevens, Director of K-State's Floriculture Research program, nominated for Lieberman Adjunct teaching award. Ph.D. Horticultural Sciences.
2. Dr. Gary Seckinger, Technical Services Manager, PhytoTechnology Laboratories. Ph.D in Ornamental Horticulture and Botany.
3. Larry Ryan, CEO of Ryan Lawn and Tree
4. Dr. Rodney St. John, Agronomist, Ryan Lawn and Tree. Ph.D. Agronomy.
5. Randy James, M.S. Horticultural Sciences, CEO of Growing Concerns and Tree Biologics, Inc.

Other adjunct members of our faculty pool are:

6. Martha Bach, Landscape Architect
7. Brian Boyce, 40 years experience in the Green industry in addition to undergraduate credentials in Horticulture
8. Thomas Elder, Horticulture undergraduate degree and over 15 years management expertize of a local Golf course.
9. Tyler Fyke, Horticulturist and Certified Arborist
10. Dr. Karen Thum, doctorate in Plant Physiology (has since moved to Indiana)

Our adjunct faculty are integral to the success of this program. Because they have such demanding professions outside of JCCC, they could not provide me a brief write-up of their achievements on time. However, I have highlighted below some of their achievements that are of relevance to this program.

Dr. Alan Stevens, Director of K-State's Floriculture Research program, was nominated by me in 2014 for Lieberman Adjunct teaching award. Due to time-constraints, Alan could not submit his portfolio for the teaching award. Alan was also the State Leader of Extension Horticulture Programs for K-State until 2014. Alan is the founder of the 'Prairie Star' program at K-State. This program trials and lists the best performing annual flowers (and the Prairie Bloom list of perennial flowers) for this region. In September 2015, Kansas State University's Prairie Star Flower blog written by Alan Stevens and his

research associate was named the winner of the Outstanding Education Materials Award by the American Society for Horticultural Science Extension Division.

For JCCC, Alan has been teaching Hort 135 Landscape Design for several years. For this course, Alan selects 5 residential sites off campus, so students can learn to design landscapes on-site, develop networking skills and further their communication skills.

Alan retired from K-State early this year. Staring this Spring, Alan will be teaching Hort 260 Horticulture Soils, and Hort 265 Landscape Construction at JCCC. Alan has also taught Hort 201 once in 2010.

2. Dr. Gary Seckinger has been teaching for us since 2012-13. Gary teaches Hort 201, Hort 205 Hort 220, and occasionally Hort 115 at JCCC. Gary was a Horticulture faculty at Purdue University in the 80s, before moving to private industry to conduct research in somatic cell genetics.

3. Larry Ryan, Founder and CEO of Ryan Lawn and Tree, one of the biggest green industry businesses in the mid-west. Since 2013 fall, Larry has been teaching Hort 140, Turf 1 for us.

4. Dr. Rodney St. John, Agronomist, Ryan Lawn and Tree. At JCCC, since 2013, Rodney has been teaching Hort 235, Landscape maintenance and Hort 255 Pest Management. Rodney was an Assistant professor at K-Sate for several years prior to joining Ryan Lawn and Tree.

Greenhouse (GH): Our greenhouse manager, Stephen Young, has a bachelor's in Horticultural Sciences from U.K. Stephen has worked in the green industry, both in the U.K. and here in the U.S.

Stephen was hired in 2010 and is a great asset to this program. Stephen and I meet every day to discuss greenhouse management, HSC garden plantings, and class room needs. Our GH is managed as a 'teaching GH' to meet the needs of the various courses we offer.

Accomplishments of the full-time Hort faculty:

My academic credentials: B.S Agricultural Sciences (India), M.S Horticultural Sciences (India), M.S. Horticultural Sciences/Plant Agriculture (Canada), Ph.D. Botany (specialization: Plant Physiology) (Canada), Post-doctoral research: Agricultural Biotechnology (Rutgers University, NJ).

As the only full-time faculty member, I have had to devote a huge amount of time in a relatively short period of time (7 years) to develop and market this program to be recognized regionally as one of the best career/transfer programs for Horticulture in KS. Since the very first semester at JCCC, i.e. Fall 2006, I was asked to develop and teach four courses with lab exercises (8 preps/semester). For these courses there were minimal to no lab supplies, no plant materials, and access to just 1/2 bench (10ft x 6ft) space in the GH.

For fall 2006, the courses I had to develop and teach were Hort 201, Hort 214 (two sections), and Hort 220 (17.25 contact hrs/semester, 8 different preps including labs) and for Spring 2007 the courses I had to develop and teach were Hort 205, Hort 225 (two sections) and Hort 215 (16.25 hrs, 8 different preps with labs). My days went from 7:00 AM in the morning to 10:00 PM at night teaching and developing labs. Also, when I had some spare time, I had to drive around town to collect plant materials for Hort 214 (deciduous trees, Woody 1) and Hort 215 (conifers, Woody 11). Unlike the lead instructors of some other programs, I did not get any release time to develop these courses and the Hort program. Also, unlike Biology text books, Hort text books do not come with ppt presentations or lecture notes. Therefore, most week-ends I was busy preparing lecture and lab materials. Meanwhile, several of my colleagues who were hired with me in Science and other divisions only had to teach a couple of existing courses or the same course again and again. For the next couple of years this teaching load was routine. Then in 2008, I was asked to develop and offer two more courses: Hort 260 Horticultural Soils and Hort 270 Internship, which I did.

In summer of 2007, I received selective admission to attend the Asian Studies Infusion Institute, organized by the East-West center, at the University of Hawaii, Manoa campus. While attending this 3 1/2 week institute at Hawaii, I proposed to develop and offer at the East -West Center, an Ethno-botany course, integrating Horticulture and Humanities. The proposal was approved by the

East-West Center and upon return to Kansas, I networked and found a Humanities professor to co-teach this course with me in Hawaii. Hort 270, Ethnobotany: exploring Asian cultures through plants was developed and taught as planned at the U. of Hawaii that very same year (Dec 2007). Eighteen students enrolled and successfully completed this course.

What is interesting to me is that although Hort is a career program, and this program's success depends on career possibilities, seasonal job, and internship opportunities for our students, nobody took the time to introduce me to any local green industry business or K-State professionals. Me, being a woman in a male dominated industry, an Asian, and not a K-State graduate, i.e. a triple minority, I had to fend for myself and the program, and make all necessary professional contacts myself. There were also problems associated with establishing the HSC building and the greenhouse (GH) in 2001, before the Horticultural Sciences program was officially initiated in Fall 2006. Since this is a Program review process and not a grievance forum, I do not wish to discuss this in this report. I was eventually made Chair of this program in 2010. Since then, I have had access to Hort budget and other resources. This has significantly accelerated the development and growth of this program and department.

In spite of all these hurdles, Horticultural Sciences program at JCCC is a 'stand-out' program and is the only Horticulture program catering to green industry demand in this region. Courses are updated regularly to keep up with advances in the industry. Attached is a letter from Dalton Hermes, CEO of Hermes landscaping, one of the largest green industry businesses in the mid-west, and Horticultural Sciences advisory board member. For the last 20 years or so, Dalton has also served on the executive board of JCCC's foundation office. Dalton has eloquently pointed out in his letter that he has not seen such a positive turnaround for a Hort program in such a short period of time in any other School. Also, attached is a letter from Dr. Alan Stevens, Hort advisory board member, about the caliber of our program and students, and how I made contacts to promote the program and develop positive relationship with the local green industry and K-State.

Recent accomplishments of Lekha Sreedhar, Chair/Associate Professor, the only full-time faculty member for the program:

1. Developed nine of the nineteen courses that are being currently offered : Hort 201, Hort 201H, Hort 205, Hort 214, Hort 215, Hort 220, Hort 225, Hort 260, Hort 270.

2. Developed, evaluated and revised 2+2 Articulation Agreements with Kansas State University

3. Developed, evaluated and revised articulation agreements with area High Schools (Career Pathways)

4. Developing two study abroad programs focusing on Botany, Biotechnology, and Ornamental Horticulture with Tyumen State University and the Tyumen Agricultural Academy located in Russia.

5. Involved in preliminary conversations in implementing a Native Plants Project and Habitat restoration Project in Gulu, Northern Uganda as part of JCCC's Uganda International Service Learning.

6. Developed educational materials and taught an Interdisciplinary Horticulture and Humanities course at the University of Hawaii, Manoa Campus in collaboration with the East-West Center and Asian Studies Development Program (ASDP).

7. Initiated, coordinated, marketed, and scheduled guest speaker for an educational outreach Scholar in Residence Program. Through JCCC's Scholar-in-Residence program, I was able to invite Dr. Murat Kacira, Greenhouse engineer and Professor, Controlled Environment Agriculture center (CEAC), University of Arizona to give a series of talks to JCCC and the Community. Talks were: a. Improving Production Quality and Resource-Use Efficiency by Plant Sensing and Monitoring" b. Engineering Concerns and Opportunities for Sustainable Greenhouse Systems".

8. Co-hosted, coordinated, and marketed the annual Green Symposium with Ryan Lawn and Tree (2010- 2012) that features the benefits of producing a healthy, sustainable environment.

9. Initiated a College Now to area high schools that have existing horticulture programs. Enrollment in College Now doubled this year.

10. Chair/Advisory Committee, Horticultural Sciences Advisory Board, 2008 - present

11. Member, Science Division Curriculum Committee, 2008 present.

12. Member, Sustainability Committee, 2008 2012.

13. Member, Sustainable Agriculture Certificate Advisory Board, 2012-2013.

14. Member, Educational Affairs Committee, 2010 2014.

15. Member, Task Force Committee to review online and hybrid courses, 2011 2012.

16. Co-Chair, Procedures Subcommittee of Ed Affairs, 2012 2013.

17. Member, Workload Committee, 2012 - present

18. Collegial Steering Committee, 2012 - 2013

19. Member, Interdisciplinary Committee, Stan Herd Art and Landscape (featured on JCCC campus), 2010 - 2014

20. Board of Directors, Laura Conyers Smith Municipal Rose Garden and the Kansas City Rose Society (KCRS), 2010 - 2012

21. Increased enrollment/recruitment and student retention rates over 50% by marketing the program and participating in numerous career fairs.

22. Developed internship programs with Kansas State University, government agencies, and several local green businesses.

23. Established the Master Gardener Scholarship, Hermes Nursery and Landscaping Scholarship, Greater Kansas City Gardeners of America, and the JCCC Horticultural Scholarship, which provides valuable student aid.

24. Obtained Carl Perkins Grant financial support for Horticultural Sciences by conducting frequent program reviews.

25. Invited panel member of the National Science Foundation Advanced Technological Grant Review. Evaluated biotechnology grant proposals for the National Science Foundations Advanced Technological Education (ATE) Program.

26. Featured in several JCCC publications including Imprint, Reconnect, and various college websites for having developed the Horticultural Sciences Program at JCCC.

27. Interviewed and appeared on 'Its Our Community', a local television program.

28.Established and oversees the annual Horticultural Sciences Day, which features booths/exhibits for networking by green industry businesses and all day lectures by industry, Government agencies such as EPA, Missouri Department of Agriculture, Kansas Department of Agriculture, USDA, and University experts and contributes to student recruitment and promotes horticulture career opportunities. This event, through sponsorship opportunities, also raises scholarship funds for the program.

Planning for the 6th annual Horticultural Sciences day is under way. To view video tapes from previous Hort days please visit http://www.jccc.edu/science/horticulture.html and view video play list. Last year attendance was >500 for the two day event.

29. Founded and serves as the academic advisor for the Horticultural Sciences Students Association (HSSA), since 2007. HSSA members, through their weekly or biweekly meetings, are actively involved with promoting Horticulture within JCCC and the community. Their annual plant sale, whereby they grow plants from either seeds, cuttings, or plugs, helps raise sufficient funds for a Hort scholarship fund managed by JCCC's Foundation Office and Student Life.

30. Spearheaded, promoted, and directed a Native Plant Symposium held at JCCC.

31. In 2012, I initiated the Horticultural Sciences Speaker Series, whereby industry and University experts present various topics to JCCC and the community on a regular basis all through the year. Topics range from Lawn Care and management to 100 best annuals and perennials for the garden.

32. Initiated a College Now Program to area high schools that have existing horticulture programs, so High School students can take our Hort 115 in their HS.

33. Presented for the 'Noon at the Nerman' cross-disciplinary program (Arts and Horticulture). Topic: Eulalia Cabezons woven basket

34. Since 2012, I have participated in JCCC's free College Day, whereby I offer a free lecture/lab course to the community.

35. Judge for the Kansas Junior Academy of Science (KJAS) since 2005 - 2013.

36. Judge for the annual Greater Kansas City Science and Engineering Fair. Since 2008.

37. Served on the Academic Quality Improvement Program (AQIP) task force to revitalize the program review process at JCCC. This task force developed a program review template and data set for programs that will be used to evaluate programs as part of a cycle of continuous quality improvement of programs. To develop this template, the task force considered the recommendations from the Higher Learning Commission (HLC), the regional accrediting body for JCCC. 2013-2014.

38. Appointed to review textbook for Plant Propagation: Principles and Practices by Hartmann, Kester, Davies, and Geneve (Prentice Hall).

39. Hired to assess a textbook for The Fundamentals of Horticulture by Chris Bird (Cambridge University Press).

40. Burlington Northern Sante Fe Railway Faculty Teaching Award, 2012

41. Distinguished Service Award (recognized for exceptional attitude, skill, productivity, judgment, and motivation) from Johnson County Community College, 2011 - 2012 , 2013-2014.

42. Designated as an alternate for the Fulbright Core Teaching award in Russia, 2014-15 academic year, from J. William Fulbright Foreign Scholarship Board. Organized by Institute of International Educations Council for International Exchange of Scholars

from Alan Stevens [PDF 585 KB 3/24/15]
from Dalton Hermes [PDF 486 KB 3/24/15]

7.3 Innovative Research, Teaching or Community Service

Innovative teaching, research and Community service:

I pioneered hybrid sections of Horticultural Sciences courses in which students have access to lecture material/note packets online, so students in the program who work long hours can still take classes and graduate.

I use the 'flipped classroom/teaching' strategy for all hybrid courses.

I use case studies to highlight different aspects of a concept. e.g. Genetic engineering pros and cons. I have written one myself on GMO crops.

I also developed Hort 201H course where the emphasis is on undergraduate student research.

The annual Horticultural Sciences day which I initiated five years ago is open to the public and helps recruit students to the horticultural field, provides information about job opportunities and careers in horticulture and brings together speakers from academia, business and government to initiate discussions and share views on varied topics relevant to 21st century horticulturists. Attendees are able to network with faculty from K-State and industry leaders from local nurseries, plant retail centers, landscaping companies, parks and recreation districts, tissue culture labs, government agencies and other Green industry businesses who set up booths at the event. Feedback and comments from employers, students and the general public has been excellent. There were more than 500 attendees last year.

Last year I also organized the first ever Native Plant Symposium for JCCC students, staff and the community.

The Horticultural Sciences Speaker Series offered all through the year is open to the public, and highlights important horticultural topics relevant to the community.

In 2013, our plenary speaker for the Horticultural Sciences day was also the speaker for JCCC's Polsky Enrichment Series.

Through JCCC's Scholar-in-Residence program, I was able to invite Dr. Murat Kacira, GH engineer and Professor, Controlled Environment Agriculture center (CEAC), University of Arizona to give a series of talks to JCCC and the Community.

I have offered lectures for the 'Free College Day' since 2012.

Horticultural Sciences web page is maintained and reviewed periodically to provide program related information, career possibilities, and much more. There are also embedded video- links to our various initiatives for raising awareness about the importance and significance of horticulture in today's society, community outreach, recruitment, and raising scholarship dollars for the Horticultural Sciences program.

Program URL is
http://www.jccc.edu/academics/agriculture/horticultural-sciences/index.html#.VRG-KFIlwwk.

Also, http://youtu.be/p77iHoQeFSE for a photo montage of the Horticulture Sciences Program at Johnson Community Community College. These Photos span 2007 through 2014.

Attachments: Program brochure and Poster for our 3rd Annual Horticultural Sciences day, Program brochure and Poster for our 4th Annual Horticultural Sciences day, Proposed Program for our 5th annual Horticultural Sciences Day.

Photographs used for all publications are those of our students, faculty, and advisory board members.

1274_fl_hortday_3_2014_1113 [PDF 2,817 KB 11/25/14]
1274_fl_hortfday_v8c_1112 [PDF 1,026 KB 11/25/14]
1274_po_hortfday_v13 [PDF 3,190 KB 11/25/14]
1274_po_hotdayposter [PDF 3,671 KB 11/25/14]
2015 Horticultural Sciences day [PDF 289 KB 11/25/14]

8 Goal Setting and Action Plan

8.1 Long-term Goals

1. To increase # of graduates and transfer students. That would entail:

a. More one-on-one academic advising
b. Working with IR to get transfer data for students transferring to K-State

KPIs 1, 2, 3, and 4.

2. An additional full-time faculty member with a doctorate in Landscape Horticulture and industry experience, will complement by credentials and expertize, and would be an additional asset to this program. Courses such as Turf 1, Turf 11, Landscape Maintenance, Landscape Construction, and Landscape Design can be taught by this faculty member, so students can take the PLANET exam to become Landscape Industry Certified. PLANET was formed in 2005 by the merger of two long-standing industry associations, the Associated Landscape Contractors of America (ALCA) and the Professional Lawn Care Association of America (PLCAA). The Professional Landcare Network, or PLANET is the
foremost landscape and lawn care industry association in the United States.
Such certifications will help our graduates attain credibility and increased wages with government agencies.

KPI #4.

3. As for Program expansion, in the best interest of students, and the Horticultural Sciences program, input should be sought from the Hort advisory board periodically to determine needs of the local green industry and future direction of the program. Two options worth considering would be a Plant Biotechnology Certificate program and an AAS Landscape Architecture degree. However, a 'needs assessment' survey will have to be first conducted by IR to determine if graduates with these qualifications will be hired by local businesses. Under the current political climate, with so much negativity towards GE crops and GMOs, Plant Biotech program is not a feasible option.

General Outcomes Links

Key Performance Indicators	Campus-wide KPIs
Full-time Graduate and Transfer	Full-time Graduate and Transfer (3-year cohort)
2 - Part-time Graduation and Transfer	Part-time and Graduation and Transfer (6-year cohort)
3 - Persistance	Persistence Fall-to-Fall
4 - Student Satisfaction	(Measured by Noel-Levitz Student Satisfaction Inventory) on the following indicators: Instructional Effectiveness Registration Effectiveness Concern for Individual Academic Advising/Counseling Safety and Security

8.1.1 Actions/Resources Required

1. To increase # of graduates and transfer students.

Resources needed:

Compensation for time required/spent for academic advising and program promotion activities during summer months, when I am not on contract.

8.1.2 Updates on Long-Term Goals

8.2 Short-Term Goals

Short term goals:
1. To determine ideal course length to meet the needs of todays students. Current options are 8 weeks, 12 weeks, and 16 weeks. KPI #1,2,3,4.

2. To determine if in addition to the existing F2F, hybrid, and on-line courses, we should be offering more distance learning courses. Currently, we offer only one course on-line. KPI #1,2,3,4.

3. Ensure lab supplies for each and every class we offer. Classes like Turf 1, Turf 11, Landscape Maintenance, and Landscape Construction require specialized tools and equipment for various labs. Some of these are expensive. We will look into renting options first. Also, seek money from Perkins and donations/sponsorships from local Green industry. KPI 1,2,3,4.

4. Continue efforts to increase enrollment until all Hort courses, core and electives, are full. KPI #1,2,3,4.

8.2.1 Actions/Resources Required

Resources required:

1. Funds to purchase equipment for Hort 135, Hort 140, Hort 235, and Hort 265. Most likely, cost/equipment will be over $300.00. Therefore, funds to purchase these items will have to be requested via a separate procedure. Perkins federal funds is also an option. KPIs# 1, 2, 3 and 4.

2. Provide compensation for me during summer for individual academic advising and program promotion. KPI # 1, 2, 3, and 4.

General Outcomes Links

Key Performance Indicators	Campus-wide KPIs
Full-time Graduate and Transfer	Full-time Graduate and Transfer (3-year cohort)
2 - Part-time Graduation and Transfer	Part-time and Graduation and Transfer (6-year cohort)
3 - Persistance	Persistence Fall-to-Fall
4 - Student Satisfaction	(Measured by Noel-Levitz Student Satisfaction Inventory) on the following indicators: Instructional Effectiveness Registration Effectiveness Concern for Individual Academic Advising/Counseling Safety and Security

8.2.2 Updates on Short-Term Goals

9 Accreditation Standards

Meeting student and Other:

1. Academic advising provided to students enrolled in the program
2. participating in Campus-wide recruitment activities
3. Visiting local HS for recruitment purposes
4. Offering courses through College Now.

5. initiating and establishing new scholarship opportunities

Valuing employees:

1. helping/guiding GH manager manage the GH, and various labs, order supplies, practice IPM in the GH, adopt BMPs.
2. helping work-study students
3. supervising adjunct faculty
4. Successfully nominating Hort Advisory Board member and CEO of Hermes landscaping, Dalton Hermes, for KBOR's Employer Engagement Initiative.
5. Nominated adjunct faculty member Dr. Stevens for Lieberman award.

Planning and Leading:

1. Developed departmental curriculum and scheduled courses for 13 adjunct faculty members.
2. Planning and leading Horticultural Sciences Advisory Board meetings every semester
3. Initiating, planning, organizing, and leading annual Horticultural Sciences day
4. Initiating, planning, organizing, and leading Native Plants Symposium
5. Planning and leading the overall direction for the Horticultural Sciences program after extensive consultation with stakeholders, both University and Industry.

Understanding Students' and Other Stakeholders needs:

1. Providing internship/job/career opportunities
2. applying for the NSF S-STEM grant that provides scholarships to students in STEM fields

Building collaborative relationships:

1. College Now with local High Schools
2. Annual Horticultural Sciences day (students, community, green businesses, Government agencies, k-State)
3. 2+2 transfer agreement with K-state
4. organizing and implementing the Native plant symposium
5. organizing and executing Horticultural Sciences Speaker series
6. establishing collaborative internship opportunities with green industry and K-state

Supporting Institutional operations:

1. offering courses to area HS through College Now
2. developing study abroad programs
3. participating in Campus-wide committees such as Work-load task force
4. developed and taught an Interdisciplinary Horticulture and Humanities special topics course at the University of Hawaii, in collaboration with the East-West Center
5. participated in the Asian Studies Infusion Institute, East-west center, University of Hawaii, Manoa, Oahu.
6. Recipient of the Fulbright Core alternate Fellowship to Russia
7. recently submitted application for NSF S-STEM grant that provides scholarships to students in STEM fields
8. Served on the Academic Quality Improvement Program (AQIP) task force established to revitalize the program review process at JCCC. This task force developed a program review template and data set for programs that will be used to evaluate programs as part of a cycle of continuous quality improvement of programs To develop this template, the task force considered the recommendations from the Higher Learning Commission (HLC), the regional accrediting body for JCCC. 2013-2014.

General Outcomes Links

Student Learning Outcomes	SLOs
#1 - Access and evaluate	Access and evaluate information from credible sources

#2 - Collaborate	Collaborate Respectfully with others
#3 - Communicate Effectively	Communicate effectively though the clear and accurate use of language
#4 - Demonstrate an understanding	Demonstrate and understanding of the broad diversity of the human experience and the individual's connection to society
#5 - Process numeric	Process numeric, symbolic and graphic information
#6 - Read, analyze, and synthesize	Read, analyze and synthesize written, visual and aural material
#7 - Select and apply	Select and apply appropriate problem-solving techniques
#8 - Use technology	Use technology efficiently and responsibly

External Outcomes Links

Student Learning Outcomes	SLOs
#1 - Access and evaluate	Access and evaluate information from credible sources
#2 - Collaborate	Collaborate Respectfully with others
#3 - Communicate Effectively	Communicate effectively though the clear and accurate use of language
#4 - Demonstrate an understanding	Demonstrate and understanding of the broad diversity of the human experience and the individual's connection to society
#5 - Process numeric	Process numeric, symbolic and graphic information
#6 - Read, analyze, and synthesize	Read, analyze and synthesize written, visual and aural material
#7 - Select and apply	Select and apply appropriate problem-solving techniques
#8 - Use technology	Use technology efficiently and responsibly

9.1 Specialized Accreditation

None

10 Resource Request/Adjustment

BudgetChart [XLS 2,000 KB 9/2/14]
Projected budget [XLS 2,001 KB 11/24/14]

10.1 Long-range Adjustment to Resources

1. Provide financial compensation to the existing full-time faculty during summer months for one-on-one academic advising and recruitment efforts.
2. Since Horticultural Sciences is a rapidly advancing field, provide additional travel funds to attend meetings, seminars, symposiums and conferences.
3. Provide subscription to journals relevant to Horticultural Sciences. e.g. Hort Science, Hort Technology, Journal of the American Society for Horticultural Science (ashs.org), Planet.

10.2 Educational Technology Support

1. Class room and Office computers, hardware and software updates
2. Special software for IPM (which we have)
3. Greenhouse climate control computer software, which will need updating in a couple of years.

Not much need at the moment. However, it is difficult to predict what the future needs will be.

End of report