

Extension Education Methods

Perceptions of Land-grant University Specialists Regarding Competition and Collaboration with Community College Programs in Viticulture and Enology

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SUMMARY. Junior college (JC) and community college (CC) programs offering viticulture and enology courses have proliferated in recent years in many states, especially outside of traditional grape growing regions. A survey was sent to 69 land-grant (LG) horticulture, viticulture, and enology specialists who may interact with JC and CC programs offering viticulture and enology courses. Forty answered for a response rate of 58%. Results indicated that most LG horticulture/viticulture programs are not interacting with the JC/CC programs and that LG specialists do not believe the education received by students of the JC/CC program is sufficient to create well-trained industry professionals. JC/CC programs are generally regarded as positive for the viticulture and enology industry by LG specialists, but some question the quality of instruction. Many LG respondents do not believe the JC/CC programs are impacting their own programs and do not see the JC/CC programs as competitors to their programs; however, documented actions of JC/CC programs would dictate otherwise, especially in the area of Cooperative Extension programming. LG viticulture and enology programs should no longer consider JC/CC programs as noncompetitors for funding and clientele interaction, especially in states with limited resources. LG programs should seek to develop appropriate partnerships with JC/CC programs to benefit the viticulture and enology community. However, any collaboration must be mutually beneficial, well-designed, well-coordinated, and conducted with reciprocal respect for each program.

The grape (*Vitis* sp.) and wine industry in the United States is growing, especially in nontraditional regions such as the midwestern United States. The expansion creates opportunity for economic development; however, until recently, educational programs have been limited to the traditional grape and wine areas of the country. In the past decade, several JC and CC programs in viticulture and enology have emerged to address the lack of educational programming. By

establishing viticulture and enology programs, some JC/CCs were started in response to the already emerging industry (Velluzzi, 2010), whereas others claim to have instigated an emerging wine industry in their respective states (Hensel, 2009). One particular program, the Viticulture and Enology Science and Technology Alliance (VESTA) has gained traction in the midwestern United States but has not sought out connections with LG schools in all states in which they operate.

The mission of a CC has been defined to include four areas of emphasis: preparing students to matriculate or transfer to 4-year institutions, education in vocational programs, general education programs, and not-for-credit community outreach (Breneman and Nelson, 1981; Dowd, 2003; Labaree, 1997). Although these emphasis areas remain important, the model for JC/CC programs has shifted in recent years from primarily serving local community needs to serving the economy by focusing on programs that produce trained labor (Levin, 2000; Velluzzi, 2010). While these programs are intended to reduce public sector spending by providing trained labor to the economic community, their overall mission has become somewhat ambiguous as to how they continue to serve local needs. The new mission has been termed “the new vocationalism” (Levin, 2000), where the programs serve the engines of the economy first and foremost by teaching applied skills that create employability. More and more, students are viewed in economic terms, while some programs within the institutions are run using a business model rather than focusing on higher learning. Levin (2000) stated that the function of these programs was fluid in nature, not conforming to academic norms, and may or may not have professional faculty, rather faculty have been replaced by a systems approach, whereby the program uses adjunct instructors from the vocational field.

The American Association of Community Colleges (2000) stated that the JC/CC programs should emphasize workforce development as their primary function and use this new direction as a means of conveying their uniqueness to policymakers and funders (Jacobs and Dougherty, 2006). The established mission of workforce development positions JC/CCs to seek new market niches and new clientele outside of their traditional programs (Dowd, 2003).

The new clientele and niche markets include viticulture and enology programs, many of which were recently formed. The results reported here used a survey designed to assess perceptions of emerging JC/CC viticulture and enology programs among LG institution horticulture, viticulture, and enology specialists, especially those with Cooperative Extension Service appointments. This study was conducted because many new viticulture and enology

programs at the JC/CC level are emerging and are conducted in states where LG viticulture and enology research and extension programs reside. The potential benefits of coordinating JC/CC programs with LG Cooperative Extension and research programs are substantial, not only to the participating institutions but also to the industry. Yet, even though the positive benefits seem great, obstacles also exist from financial, political, and institutional aspects. This survey was designed to capture perceived advantages and disadvantages of JC/CC and LG viticulture and enology program collaboration from the perspective of LG specialists that conduct viticulture and enology activities.

Materials and methods

The researcher-designed survey instrument (Table 1) was sent to 69 individuals at LG institutions (Table 2) via e-mail who worked with the grape and wine industries in their states, primarily those with Cooperative Extension appointments most likely to come into contact with the JC/CC programs operating in their state. After 1 month, unresponsive contacts were sent a second survey. Final results were tallied after a 2-month period. In all, potential respondents in 41 states were contacted to take the survey and responses came from 28 states. Of the 69 individuals contacted, 40 responded to the survey for a 58% response rate. Of the 40 who responded, 17 indicated that they had no JC/CC viticulture and enology program in their state. The remaining 23 respondents provided all or some answers, thus data were summated from 14 states. Respondents were given the option of providing additional comments pertaining to each question as well as demographic information (data not

shown). The reliability of the survey was established after administration for internal consistency using Cronbach's alpha (Cronbach, 1951). The Cronbach's alpha for questions 3–10 was 0.83 (SD = 3.8) and 0.71 for questions 13–18 (SD = 2.4). Since 0.70 or above is considered the minimum standard of reliability, this survey can be considered reliable. There were no attempts to generalize the results of this survey to the population.

Results and discussion

PERCEIVED IMPACT OF JC/CC PROGRAMS ON THE VITICULTURE AND ENOLOGY INDUSTRY. Just under one-half (45%) of the respondents were uncertain what kind of impact the JC/CC programs were having on the industry, whereas several stated that the programs were having a positive or extremely positive impact on the local viticulture and enology industry [question (Q)13]. LG institutions can offer more local expertise and have more resources than JC/CC institutions, but JC/CC institutions can create and offer educational programs that universities cannot justify due to expense and return on investment. Therefore, potential exists for a synergy of JC/CC and LG for teaching, research, and extension programming.

As one survey respondent astutely pointed out, the community of interest (COI), in this case the grape and wine industry, demands more and better services as the industry grows and expands. Institutions with similar programming have opportunities to create unified allegiances that could improve the programming of any individual institution; however, the boundaries between what universities with a Cooperative Extension Service offer and CC outreach programs are blurring.

The traditional role of Cooperative Extension is to teach adults in an informal setting to nontraditional audiences, acting as a liaison between researchers and the public. Cooperative Extension relies on disseminating information that is based in scientific study, thus avoiding nonfactual or anecdotal information that is not proven to work in a wide range of settings. CCs are strongly driven by professional personnel from the trade field (i.e., consultants, winery owners/workers, vineyard managers, etc.). What once was a formal teaching environment has transformed into a hybrid classroom/field

experience educational environment that operates under different standards and structure than traditional programs (Jacobs and Dougherty, 2006). The curriculum is primarily technically driven and focused on learning vocational skills and as one respondent pointed out in this survey, students may not complete the coursework required for a degree or certificate before leaving school.

JC/CC PROGRAM SUSTAINABILITY. In regard to program sustainability, most respondents were unsure. Most indicated that they did not know if the JC/CC programs were sustainable (52%) or did not think they were (10%, Q14). One respondent stated that JC/CC viticulture and enology programs are already graduating students into the market in which few positions exist, thus casting doubt on future graduation rates in that state.

Indicators of success for JC/CC schools include several factors: retention and graduation rates, job placement, graduation credits and time students take to complete a degree, test scores, workforce training and development, and matriculation and transfer rates (Burke and Serban, 1998; Dowd, 2003). Another respondent indicated that too many programs were being developed for the needs of the industry, resulting in an oversupply of trainees. Velluzzi (2010) found that some students could not find work after graduation and thus planned to open their own wineries as a way to stay in the industry.

MATRICULATION OF JC/CC STUDENTS TO 4-YEAR PROGRAMS. Fifty-two percent of the respondents indicated that there were no established links between the JC/CC viticulture and enology program and the LG university program and/or institution (Q10). The lack of articulation between JC/CC programs and LG programs is one of the larger concerns reported by respondents. The JC/CC viticulture and enology programs would benefit from in-state expertise in several agriculture/horticulture related disciplines, regardless of LG viticulture or enology expertise. The JC/CC could function as a pipeline to the 4-year school and as a collaborator in research and Cooperative Extension programming.

Few respondents (29%, Q11) indicated that the JC/CC viticulture and enology program was matriculating students to the LG institution,

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Table 1. The survey instrument used to assess perceptions of land-grant university employees in positions related to viticulture and enology toward junior college/community college (JC/CC) viticulture and enology programs in their states. A summary of survey responses follow the question in the next column.

Question no./Question	Response
1. Do you know of a JC or CC in your state that has a viticulture and/or enology curriculum?	21 JC/CC programs were named
2. Was this JC/CC program already established when you started in your current position?	Yes = 9, No = 12, I do not know = 0
3. If yes, what level of interaction do you have with the JC/CC program now?	I teach a course for the program = 0 I advise the program = 0 I do extension programming with the program = 2 I conduct research with the program = 0 Other (please explain): 14 Extremely positive = 0 Positive = 11 Neutral = 8 Negative = 2 Extremely negative = 0
4. What is your perception of the JC/CC program's ability to serve the grape and wine industry?	Extremely positive = 1 Positive = 11 Neutral = 8 Negative = 2 Extremely negative = 0
5. What is your perception of the JC/CC program's ability to serve students in their viticulture and enology program?	Extremely positive = 1 Positive = 9 Neutral = 11 Negative = 1 Extremely negative = 0
6. Do you perceive that the JC/CC program in your state has adequate resources to be successful?	Yes = 11, No = 4, I do not know = 7
7. Do you perceive that the JC/CC program in your state has highly qualified instruction in the appropriate area of expertise (viticulture, enology, etc.)?	Yes = 5, No = 10, I do not know = 7
8. Have you heard of the Viticulture and Enology Science and Technology Alliance (VESTA) www.vesta-usa.org ?	Yes = 14, No = 4
9. Does VESTA have a cooperating partner JC/CC program in your state?	Yes = 11, No = 3, I do not know = 9
10. Is there an established link between the JC/CC program in your state and your institution?	Yes = 9, No = 11, I do not know = 1
11. Is the JC/CC program in your state matriculating students to your 4-year institution?	Yes = 6, No = 9, I do not know = 6
12. If yes, how many students are matriculating per year? Please provide a number if possible:	No respondents provided a number
13. What kind of impact are these JC/CC programs having on the industry in your state?	Extremely positive = 1 Positive = 8 Neutral = 10 Negative = 1 Extremely negative = 0
14. Do you believe the JC/CC program in your state is sustainable for the long term?	Yes = 8, No = 2, I do not know = 11
15. What kind of impact is the JC/CC program in your state having on your program?	Extremely positive 0 Positive 4 Neutral 16 Negative 1 Extremely negative 0
16. Do you see the JC/CC program in your state as a competitor to your program in the areas of teaching, research, and/or extension?	Yes = 6, No = 15, I do not know = 0
17. Is the JC/CC program in your state competing for the same funding as your program?	Yes = 8, No = 9, I do not know = 5
18. Has your administration indicated knowledge and/or interest in the JC/CC program to you (or anyone in your program)?	Yes = 10, No = 7, I do not know = 4

and none knew how many students were matriculating (Q12). A program that establishes a pipeline of students from 2-year to 4-year schools would benefit both schools; however, JC/CC students in viticulture and enology are often nontraditional students

who have already earned degrees in another field and therefore see little value in completing all degree-related course requirements.

One respondent to this survey indicated excitement at having a JC/CC program that could serve as a

gateway for students to continue their education at the LG institution. The option for a student to move from a 2-year program to a 4-year now exists in states, especially in the midwestern United States, where it did not before, thus opening up potentially beneficial

Table 2. Represented states and the number of specialists who were contacted, responded to the survey, and completed the survey.

States where specialists were sent the survey	Specialists that were contacted (no.)	Contacted specialists that responded (no.) ^z	Responding specialists that completed the survey (no.) ^y
Alabama	1	1	0
Arkansas	3	2	1
California	3	2	2
Colorado	2	1	1
Connecticut	1	1	0
Florida	1	1	0
Georgia	1	1	0
Idaho	1	0	0
Illinois	1	0	0
Indiana	2	2	1
Iowa	2	2	2
Kansas	1	0	0
Kentucky	1	1	0
Louisiana	1	0	0
Maryland	1	0	0
Massachusetts	1	0	0
Michigan	3	3	3
Minnesota	1	1	1
Missouri	2	1	0
Nebraska	1	0	0
Nevada	1	0	0
New Jersey	1	1	0
New Mexico	1	1	0
New York	6	3	3
North Carolina	2	2	2
North Dakota	1	0	0
Ohio	2	0	0
Oklahoma	3	2	2
Oregon	3	1	1
Pennsylvania	1	0	0
South Carolina	1	1	0
South Dakota	2	2	0
Tennessee	1	1	0
Texas	3	2	2
Utah	1	1	0
Vermont	1	1	0
Virginia	2	1	1
Washington	3	1	1
West Virginia	1	0	0
Wisconsin	2	0	0
Wyoming	1	1	0
Total	69	40	23

^zResponses indicated whether the specialist knew of a junior college (JC) or community college (CC) viticulture and enology program in their state. Responses were either "yes" or "no" and both constituted a response to the survey.

^yOnly the respondents that stated they knew of a JC or CC viticulture and enology program in their state or were familiar with a program completed the survey.

situations for the LG, JC/CC, and students.

LAND-GRANT UNIVERSITY RESPONDENT PERCEPTIONS OF JC/CC PROGRAMS. Respondents were split on their perception of the ability of the JC/CC viticulture and enology program to serve the grape and wine industry in their state. Fifty-two percent thought the program was positive for the

industry, whereas the other 48% indicated uncertainty or thought the program was having a negative effect (Q4). This may be a function of the newness of the JC/CC programs in most states.

The respondents were again split on their thoughts as to how well the JC/CC programs were serving students. Forty-one percent thought the

programs were positive, whereas 50% were uncertain (Q5). The neutral responses may be due to the recent establishment of JC/CC viticulture and enology programs in many states. Several respondents thought the JC/CC programs lacked breadth and depth in their programs (data not shown).

Respondents were split on the issue of whether the JC/CC programs had adequate resources to be successful. Fifty percent thought they did, whereas the remainder did not know or responded that they did not have adequate resources (Q6). The newness of the programs may have resulted in 32% of the respondents stating they did not know if adequate resources were available to sustain the programs. Individual responses ranged from statements indicating the JC/CC program had no trained instructors and poor facilities on the negative side to the JC/CC is well supported by the industry and state legislature on the positive.

Few respondents (23%) thought the JC/CC programs had highly qualified instructors, although nearly a third (32%) said they did not know about the quality of instructors (Q7). The remaining 45% believed the instructors were not highly qualified. If this perception is correct, the lack of highly qualified instructors may limit the knowledge gain of the students during coursework and subsequently, in the field.

The primary concern with the JC/CC viticulture and enology programs in the eyes of the LG respondents was the lack of consistent and professional instruction. Most responses indicated that CC programs lacked well-trained instructors as well as a comprehensive curriculum (data not shown). One respondent stated that related disciplines (e.g., soil science, plant pathology, entomology, etc.) were not taught or not taught at an appropriate depth. Multiple respondents stated that viticulture expertise was lacking. Others thought the JC/CC programs filled a niche that undergraduate programs at the LG could not address, but were noncommittal on the effectiveness of the JC/CC programs because of their recent creation. Some perceived the education received by students in enology was superior to that in viticulture.

ACTIVE INTERACTION LINKAGES BETWEEN LG AND JC/CC INSTITUTIONS. The results of this study revealed

that there was almost no engagement of viticulture and enology specialists at LG institutions with JC/CC programs. Only 13% (Q3) of LG respondents indicated that they were involved in Cooperative Extension-based activities with the JC/CC viticulture and enology program in their state. This may lead to a fundamental problem of engagement with specialists at a LG institution within the state where the JC/CC program is operating. Failure to engage recognized viticulture and enology experts within the state where programs are held may limit the knowledge base of the students in terms of new and upcoming techniques, trial results, and local insight that comes with intensive investigation done at the university level. Only one respondent indicated a positive collaboration with the JC/CC in research, where the JC/CC oversaw the day-to-day maintenance of a vineyard. This type of collaboration allows for LG researchers to implement and follow through on studies where resources are limited and JC/CC instructors and students to gain valuable experience in vineyard management and scientific methodology.

The responses to this question leads to the query: should Cooperative Extension and CCs work together? Hensel (2009) stated that JC/CC programs should expand their partnerships with nearby 4-year colleges, local industries, local government, and non-profit agencies to provide additional opportunities for students. Yet, the coordination of institutions with different cultures and identities remains problematic, even when educational institutions have similar clientele, as competition for the target audience may cause feelings of rivalry, or even attempts to undermine each other's programs. A rivalry may be borne out of feelings of superiority (or inferiority), fear that one program will overshadow the other, a lack of trust between personnel and institutions, and disparate academic requirements (Hill, 1970), resulting in an uncoordinated effort that leads to overlapping educational efforts and conveys a disjointed, noncooperative approach to the industry in which all programs are attempting to serve.

VITICULTURE AND ENOLOGY SCIENCE AND TECHNOLOGY ALLIANCE. VESTA is one viticulture and enology program run through JC/CC institutions that has gained momentum in recent years. It is a multistate program

that has established itself as a Regional Center of Excellence (VESTA, 2011) and will soon be an Advanced Technological Education (ATE) National Center for Viticulture and Enology (Missouri State University, 2011) through funding from the National Science Foundation.

Junior college and CC programs have existed for many years in California, but in other regions of the United States, it is a new phenomenon. As an up-and-coming educational program that operates within a region of the United States where formal viticulture and enology education programs are not the norm, VESTA has marketed itself as a program with a "...21st century vision for education in grape growing and winemaking" (VESTA, 2011). The primary goal of the ATE program is workforce development for emerging technologies, thus many programs stress mathematics and science skills (Jacobs and Dougherty, 2006). Traditional vocational education seeks to train students for entry-level positions. The ATE strives to train students for positions beyond entry level, hence the "new vocationalism" direction of JC/CCs (Teles, 2005). The VESTA program relies heavily on online educational delivery coupled with field experiences coordinated with local vineyards and wineries (VESTA, 2011). Because of its new stature within the viticulture and enology world, part of this survey was meant to acquire perceptions of VESTA programming from viticulture and enology faculty at LG institutions who generally work in the areas of extension and research.

Nearly all respondents (83%, Q8) replied that they had heard of VESTA. One respondent had not heard of the program even though a partnering institution was established in the state. VESTA has been an aggressive program throughout the midwestern United States and serves students in states where it has a formal JC/CC presence as well as other states where no such place-bound program exists.

Data about the VESTA program reported by ATE Centers (2011) stated that in 2010, 640 students took VESTA courses in 38 states. The top five states for VESTA students are Missouri, Illinois, Iowa, Michigan, and Kansas. One of the goals of VESTA is that the program "Provides an educational career pathway with certificate, associate degree, and bachelor's degree programs

in viticulture and enology" (ATE Centers, 2011). Based on responses to this survey, it does not appear that the VESTA programs in all states are developing linkages with 4-year institutions to develop integrated programming that can provide students with advanced education even though the ATE report also stated, "VESTA adds structure to viticulture and enology career pathways by establishing articulation agreements between 2-year, 4-year, and postgraduate degree programs." The program literature also indicated that "VESTA utilizes highly qualified scientists from across the nation to provide students advanced instruction in the science of viticulture and enology." Respondents to this survey believed this claim was overstated. One respondent commented that VESTA had not cultivated relationships with the LG universities, leading the respondent to question whether the students were being well-served by highly qualified instructors. Another respondent stated that the VESTA program in that state had limited facilities and two people responded that the program lacked highly qualified instructors (data not shown).

Conversely, one respondent indicated that VESTA was performing a valuable function in that state as no other similar program was available. No one from the survey disputed the need for the type of programming VESTA offers. In fact, many thought the concept was beneficial or had the potential to be beneficial to the grape and wine industry in their state. However, concerns regarding the curriculum and instructor quality were raised.

Forty-eight percent of the respondents indicated that they had a VESTA program institution in their state, while 39% indicated that they did not know (Q9). The VESTA program was established in 2003 and encourages JC/CC programs to adopt their curriculum. This may or may not be done with the consultation or guidance of the state's LG institution. A lack of coordinated efforts within states with similar or complimentary programs may create an impression of duplicative effort, whether real or perceived. As in the case of VESTA, little effort has been undertaken in some states to make connections with universities that already, in some cases, provide research, extension, and educational

programming in viticulture and enology (e.g., Ohio, Oklahoma, and Minnesota).

The fact that 39% of respondents did not know if they had a VESTA program in their state is not only an indicator that JC/CC programs have not reached out to the LG institutions for collaboration but also an indicator that LG specialists in viticulture and enology are not recognizing the potential ramifications of having multiple programs in their respective states. In some states such as California, where University of California, Davis has a world-renown program in viticulture and enology, this may not be an issue, but in states with small industries and limited resources, the potential for competition becomes acute.

COMPETITION BETWEEN LG AND JC/CC PROGRAMS. Most respondents (76%) reported the JC/CC viticulture and enology programs were not having any impact or were uncertain of the impact of these programs on LG programs (Q15). Only 19% stated that the impact was positive, indicating a low level of collaboration between the JC/CC program and the LG institution. One respondent stated that students of the JC/CC programs were more likely to seek out Cooperative Extension programming, including workshops and field days. This is an example of where collaboration could be mutually beneficial for both institutions. Another respondent indicated no contact with any of the JC/CC programs even though a program existed in the state.

The majority of respondents (71%) did not believe that the JC/CC programs were in direct competition with their programs in the areas of teaching, research, and/or extension (Q16). However, the remaining 29% did believe the programs were in direct competition. The prevailing sentiment from respondents was that JC/CC programs have different directives when it comes to students. They teach technological skills only and do not branch out into areas of research and outreach/extension. Although many respondents said that JC/CC programs were not having an impact on their program, this would seem to be a naive view of the current state of JC/CC operation, especially in areas that have traditionally been held by LG schools such as Cooperative Extension and research. Several JC/CC schools purport to have research facilities, perform extension

programming, and serve students outside of their traditional audiences (Kohl, 2010, 2011; Redlands Community College, 2011; Surrey Community College, 2011).

One respondent stated that the LG and JC/CC programs coexist and serve different clientele; however, this is not generally the case as Perez (2003) noted that 2-year colleges may be as diverse in their roles and missions as their 4-year counterparts. The students of the JC/CC programs are seeking knowledge that could be delivered by the LG, whether through traditional teaching programs or Cooperative Extension programming. LG specialists who interact with JC/CC students recognize that they are not completing degrees, but rather taking classes toward a certificate or to gain education without completing any program. This nondegree programming approach is in direct competition to Cooperative Extension programming.

COMPETITION WITH THE LG COOPERATIVE EXTENSION MISSION. One emphatic respondent said that the mission of the JC/CC is teaching and not outreach (extension). This viewpoint may have been correct several years ago; however, there has been significant overlap of the outreach and extension components of JC/CC viticulture and enology programs and LG Cooperative Extension programs over the past decade. The blurring of boundaries in extension and outreach was recognized long ago (Hill, 1970) and continues to occur as universities and CCs compete for students and relevance. At one time, Cooperative Extension was the primary means to service a largely agrarian society, but as the U.S. population has become urbanized and clustered, the programming needs have changed. CCs are reaching out to their community (and beyond) to schedule programs that compete directly with traditional Cooperative Extension programs such as workshops, field days, and making site visits in the name of outreach. For example, Kansas State University has outsourced their viticulture and enology extension programming to a local CC (Kohl, 2010, 2011).

The Walla Walla Community College Center for Enology and Viticulture offers various opportunities such as noncredit short courses and workshops that are performed as outreach or "informal extension." Faculty

also serve as consultants to vineyard and winery owners (Velluzzi, 2010). Many JC/CC faculty members came from industry and may be self-taught. They may or may not have a grounded scientific background in viticulture or enology. As discovered in this survey, most LG specialists in the field of viticulture and enology do not believe that faculty at the JC/CC level have adequate experience in the fields they are teaching. Enhancing linkages with LG faculty would deepen the expertise of JC/CC faculty.

The informal extension programming performed by JC/CC institutions begs the question: What are the boundaries of community? CC viticulture and enology programs are not only able to serve their local area but also perform statewide and regional outreach. Take the example of Surrey Community College (SCC), which seeks to expand its sphere of influence: "This Center will serve the grape and wine industry, not only in North Carolina, but the entire Southeast providing workforce training and industry support" (SCC, 2011).

One way to ensure the quality of outreach and extension programming is to create alliances between the LG and JC/CC programs. Hill (1970) defined three steps for coordination of universities and CCs to deliver outreach and extension programming. First, create a mutual understanding of the boundaries where Cooperative Extension and CC personnel should function. Second, identify the unique areas of each program to develop programming that is relevant to the COI with an integration of resources from both programs. The third and final step is to follow through and cosponsor educational programs. Although somewhat simplistic in nature, the steps form the outline of what needs to take place to have successful cooperation. Hill (1970) also stated that Cooperative Extension should take the lead in developing cooperative ventures because of its statewide structure and audience, as well as the immediate expertise available.

COMPETITION WITH THE LG RESEARCH MISSION. Cooperative Extension programming is not the only area where overlap has occurred. Although the primary mission of JC/CC institutions is not basic research (Velluzzi, 2010), that concept has been challenged. Levin (2001) indicated that as JC/CC programs cultivate new

markets, they have transformed their identities to become something beyond a traditional CC, including advertising themselves as applied research centers. Some JC/CC viticulture and enology programs state that they are implementing research projects (Las Positas College, 2011; Redlands Community College, 2011). It is unclear from these statements how research at these institutions is being defined and whether it follows the traditional definition outlined by Apps (1972).

Respondents in the research reported here perceived that JC/CC programs do not have a research mission, and therefore, do not conduct research. However, at the JC/CC level, faculty can potentially take more risks with research projects because they do not participate in the promotion and tenure process, and expectations for research publications and securing external funding are not as high as at the research university (Cejda, 2009). As tenure-track faculty employment opportunities decline at LG institutions, CCs are hiring more faculty members with PhDs, and some may wish to continue their involvement with research (Hensel, 2009). In fact, Cedja (2009) stated that at JC/CC institutions where faculty members and administration have made a concerted commitment to undergraduate research, the research programs appear to be sustainable and comparable to similar programs at 4-year colleges and universities.

There is a strong interest in expanding undergraduate research at CCs (Cedja, 2009). With funding sources shrinking, competition between the JC/CC institutions with viticulture and enology programs and LG institutions may become more prominent than in previous years if a collaborative approach is not clearly defined. Some funders without in-depth knowledge of the field may or may not understand the differences of one program compared with another. Research and Cooperative Extension programming are often more difficult concepts to grasp for the public and therefore (in some cases, small but crucial) funding may be allocated toward JC/CCs with an applied teaching, research, and workplace (vocational) development mission. This area bears watching in the coming years.

COMPETITION FOR FUNDING BETWEEN LG AND JC/CC PROGRAMS.

Thirty-six percent of respondents believed that the JC/CC programs were in competition for the same funding sources as their program, while 23% did not know (Q17). These responses largely depended on the state where the programs are located. States with large, long-established industries did not perceive any competition for funding with JC/CC programs, but states with small programs at the LG institution were competing for the same funding opportunities. Clientele time was also cited as a source of competition; however, states with new programs were confident that early partnerships with JC/CC programs may head off competitive situations and create synergy among the programs.

The new model of the JC/CC mission to address more economic and marketplace needs has changed how they seek funding. They are more often pursuing competitive grants, looking to the private industry for funding, and charging for services and products (Levin, 2000). In addition, workforce development programs generate revenue and create stronger connections with industry leaders and state government with the goals being that the JC/CC institutions and their programs can supplement dwindling state appropriations and help to counteract the financial and political clout of 4-year institutions within their state (Jacobs and Dougherty, 2006).

Competitive funding for viticulture and enology programs is scarce, and a proliferation of programs will further dilute funding, perhaps having the unintended effect of lessening the impact of each funded program unless a well-developed, mutually beneficial collaboration is established between the JC/CC and LG programs.

Conclusions and recommendations

Nearly one-half (48%) of respondents indicated that their administration had knowledge or interest in the JC/CC program and that the administration had conveyed that knowledge to them (Q18). Less than half of the respondents had been apprised of the existence or status of the JC/CC viticulture and enology program in their state by LG administration. This could be because administration was unaware of the situation or because they perceive it as a noncompetitive

program that will not impact their university. This may be a shortsighted view of the viticulture and enology landscape where funding and resources are ever in demand.

In general, respondents reported that clientele do not care where the education comes from, either JC/CC or the LG, as long as the information is accurate and serves their needs. Many of the respondents believed that developing partnerships between JC/CC and LG programs would provide significant benefit to all involved and that the current situation of new JC/CC programs should be embraced rather than treated with skepticism and distrust.

While Cooperative Extension programs are being reduced throughout the LG system, partnerships between JC/CC and LG programs may be necessary for viticulture and enology programs to thrive. In states where a viticulture and enology program does not exist at the LG, the JC/CC should avail their program of the substantial expertise in complimentary disciplines such as soil science, entomology, plant pathology, and weed science. Each institution should work to create well-coordinated, well-planned programs in good faith and with common respect for each other, as well as for the mutual benefit and value to the COI.

There may be obstacles to forming partnerships such as feelings of rivalry, competition, inferiority, and fear of being overshadowed (Hill, 1970). Two institutions with compatible programs should be expected to work together so that the outcome is better programming for the COI, although certain issues can prevent cohesiveness (i.e., personal or ideological conflicts) (Hill, 1970). This partnership paradigm dictates that working together is better than working alone. The traditional differences between 4-year universities and JC/CC institutions must be bridged to provide enhanced education for the COI (Lundquist and Nixon, 1998).

There is no doubt that JC/CC programs fill a substantial need for the grape and wine industry in the United States. Very few LG institutions have academic programs in viticulture and enology, although many have research and Cooperative Extension efforts in that area. The JC/CC programs have a positive effect through education, training, experiential learning, and creating

networking opportunities for students. They also increase the pool of trained labor and support the efforts of entrepreneurs wishing to open their own winery or vineyard business.

The results of the research reported here indicated hope, but also wariness on the part of LG horticulture, viticulture, and enology specialists toward JC/CC viticulture and enology programs. Much of the trepidation is due to the recent development of most JC/CC programs and lack of long-term track record.

At face value, the JC/CC programs in viticulture and enology serve different clientele; however, in looking at the issue more closely, there is cause for concern that program overlap and duplication of effort may exist in some program areas. Many respondents to this survey thought that the primary mission of a JC/CC program was teaching and not research or Cooperative Extension. However, the literature and observed practice of such JC/CC viticulture and enology programs like VESTA reveal otherwise.

The JC/CC mission of the past is not the mission of the present or future. While at present there is little evidence that JC/CC programs will compete with LG programs for research funding, it bears further attention. In regard to extension, JC/CC programs are currently performing informal extension or outreach. These efforts contribute to the erosion of Cooperative Extension's mission as the sole disseminator of university-generated research findings and may contribute to declining funding as legislators and administrators seek to eliminate redundant programming.

Land-grant viticulture and enology program administrators should define their institutional roles clearly and make the necessary early, preprogram launch contacts with local JC/CC viticulture and enology programs to ensure optimal performance of all education, research, and outreach efforts in the spirit of collaboration and meeting COI needs.

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