



**BUILDING CAPACITY FOR DUAL CREDIT IN SOUTHWEST OHIO:  
THE PROMISE OF REGIONAL PRACTICES**

## INTRODUCTION

In 2008, West Wind Education Policy Inc. (West Wind) received a grant from the Martha Holden Jennings Foundation (Jennings Foundation) to develop and manage the Teacher Development Collaboratives (the Collaboratives)—a project designed to support the recruitment, retention and development of teachers in Ohio. The project created four Collaboratives<sup>1</sup> across the state, one of which was the Southwest Teacher Development Collaborative hosted by the Hamilton County ESC.

Since the inception of dual credit in Ohio in 2007, the Hamilton County ESC has been a leader in bringing education leaders in K–12 and in Institutions of Higher Education (IHEs or higher education) together to provide opportunities for high school students to earn college credit in mathematics, science, and foreign language courses in high school. Hamilton County ESC Assistant Superintendent Kathy Thornton, in collaboration with partners from K–12 and higher education, was instrumental in obtaining and managing three consecutive state dual credit grants to Region 13<sup>2</sup> to support these collaborative efforts.

In its first year, the Southwest Collaborative focused on building capacity and creating a sustainable model for dual credit coursework in the region. Prior to the award of the second year of funding, the Hamilton County ESC leveraged resources it garnered through its 2009 dual credit grant to implement some of the ideas that were generated by the Southwest Collaborative. One such idea was to host symposia focused on content alignment that would further position schools and universities to prepare and partner on dual credit programming.

In February 2009, the Hamilton County ESC collaborated with the University of Cincinnati's Clermont and Raymond Walters branch campuses to develop and deliver a symposium on dual credit for pre-calculus courses. The symposium was facilitated by the ESC, with presentations from Clermont and Raymond Walters faculty and a "voluntary adjunct" (a high school teacher approved as an adjunct, as is required to teach dual credit courses). Participants included K–12 administrators and teachers (some of whom had dual credit in their schools and/or were already approved as voluntary adjuncts) as well as higher education administrators. The focus of the first symposium was on helping participants understand the concept of dual credit, networking across the system, and beginning to investigate alignment of the high school and college pre-calculus curriculum.

In April 2009, with support from the Jennings Foundation and West Wind, the group developed and delivered a second symposium. The second symposium was again facilitated by the ESC, with presentations from the higher education faculty and

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<sup>1</sup> The four collaboratives included the northeast Collaborative, hosted by the Wood County ESC; the southwest Ohio Collaborative, hosted by the Hamilton County ESC; the southeast Collaborative, originally hosted by the Muskingum Valley ESC; and the northwest Collaborative, hosted by the Trumbull County ESC.

<sup>2</sup> Region 13 includes Hamilton, Butler, Warren, and Clermont Counties.

voluntary adjunct. In part because the second symposium was promoted as an opportunity for participants to earn university credit, there were fewer participants overall and a few new K–12 participants who had not attended the first symposium. The focus of the second symposium was on networking and rigor, with K–12 teachers and higher education faculty examining textbooks and scoring exams together.

The overarching objectives for both symposia were to:

1. [Help participants] understand the concept of dual credit;
2. Increase the awareness of dual-credit and networking opportunities throughout the region;
3. Deepen the alignment between pre-calculus courses in regional high schools and institutions of higher education;
4. Increase rigor, access, and success for students in college-level courses in high school.

Following the symposia, higher education administrators and faculty met with interested K–12 administrators and teachers to provide additional information about dual credit and to assist teachers in applying for voluntary adjunct status.

## **PURPOSE OF THE STUDY**

The primary purpose of the study was to determine the extent to which the Southwest Collaborative met the stated objectives for the pre-calculus symposia. Secondary purposes included investigating participants' perspectives on the implications of dual credit for the region and distilling policy implications for the system of PK–16 education in Ohio.

## **Research Questions**

The following research questions guided the study:

1. To what extent did the symposia meet the objectives?
2. What do participants perceive to be the implications of dual credit
  - a. for K–12?
  - b. for higher education?
  - c. for continued collaboration among K–12 and higher education?
3. What are the implications for policy of participants' perspectives on dual credit as they relate to the system of PK–16 education in Ohio?

## **RESEARCH METHODS**

This is a qualitative study. West Wind analyzed documents provided by the Hamilton County ESC. These documents included but were not limited to documents related to the dual credit grant, reports, planning documents for the symposia, documents distributed during the symposia, and spreadsheets created and maintained by the ESC to track symposia participants and follow-up activities.

Additionally, West Wind analyzed participants' responses to the "exit ticket." The exit ticket—a questionnaire with two open-ended questions—was distributed by the facilitator at the end of the February symposium. It asked participants to list one thing learned during the symposium that they planned to share with their colleagues. The exit ticket further asked participants to indicate additional support needed to further their goal. The responses were provided by the Hamilton County ESC in list form.

Further, West Wind conducted semi-structured, qualitative interviews of selected participants utilizing protocols developed by West Wind in collaboration with the Hamilton County ESC. The protocols are included in Appendices A through C. West Wind invited 38 participants for follow-up interviews. The invited participants included six higher education administrators and/or faculty, four volunteer adjuncts, and 28 high school administrators and teachers. For higher education participants, criteria for selection included (1) attendance at one or both of the symposia; or (2) some role in promoting and/or administrating dual credit in the region. For K–12 participants, criteria for selection included: (1) the size of the district; (2) the geographical location of the district; (3) the demographics of the district/school; (4) the performance of the district and school; (5) race/ethnicity; (6) gender; and (7) experience at the K–12 level. To encourage participation in the study, the Hamilton County ESC sent an email to the selected participants introducing West Wind and encouraging participants to consent to be interviewed. West Wind then sent a follow up email requesting participation in the study. Seven of the 38 participants selected for interviews responded to the invitation. West Wind interviewed all seven participants, including two higher education administrators, two higher education faculty members, and three high school mathematics teachers. The interviews were transcribed and coded and the data was analyzed by West Wind staff.

## DISCUSSION OF KEY FINDINGS

### *To what extent did the symposia achieve the objectives?*

As noted above, the symposia were developed to achieve the following four objectives:

1. To [help participants] understand the concept of dual credit;
2. To increase the awareness of dual credit and networking opportunities throughout the region;
3. To deepen the alignment between pre-calculus courses in the regional high schools and institutions of higher education;
4. To increase rigor, access, and success for students in college-level courses in high school.

Overall, the symposia met the first three objectives and what could be investigated of the fourth objective. West Wind was unable to investigate the extent to which the symposia increased success for students in college-level courses in high school. Such objective was beyond the scope of this study and presents an opportunity for future research.

#### *Objective One: The dual credit concept*

Analysis of participants' responses to the exit ticket administered at the conclusion of the first symposium demonstrated the various ways in which participants increased their understanding of the dual credit concept. At least 15 of the 52 participants listed dual credit concepts as their "one thing" they learned that they plan to share with colleagues. In particular, respondents reported that they learned and would share such information as dual credit requirements, expectations, processes, benefits, and criteria for approval of voluntary adjuncts.

In interviews, K–12 participants reported they gained a deeper understanding of dual credit generally and in the region specifically. One participant reported she learned about dual credit as it is specifically administered by the UC branch campuses. According to the participant, the UC branch campuses utilize a model different from the one in which her district had participated in the past (wherein university professors taught dual credit courses three days per week in the high school classroom).

#### *Objective Two: Awareness and Networking*

The number and diversity of symposia participants was, in and of itself, a testament to increased awareness of dual credit in the region. Overall, fifty-four participants attended at least one of the symposia.<sup>3</sup> Participants represented two IHEs and 28 school districts.

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<sup>3</sup> Fifty-two participants attended the February symposium. Ten of those participants as well as two new participants attended the April 2009 symposium. The content was sufficient for half of the participants who attended the April 2009 symposium to request and receive college credit from Ashland University.

The school districts represented all seven categories of the school district typology<sup>4</sup> — from small and rural to large and urban.

Documented follow-up activities demonstrate the variety of ways in which the symposia created increased awareness of dual credit in the region. In a spreadsheet maintained by the Hamilton County ESC, at least 15 participants requested additional information or requested meetings with the higher education faculty following the symposia. Regarding the volume of requests for follow-up after the symposia, one higher education faculty member reported:

It's been keeping me busy. As a result of the two separate dates that we had, we have actually gotten a great deal of interest from high schools whose teachers and administrators were attending to actually begin this process of getting involved with dual credit and getting teachers approved as volunteer adjuncts and getting MOUs signed with [the college] and then starting the process of aligning the curriculum and getting those courses ready for next year.

Based on the follow-up activities, the same faculty member predicted that new students for the 2009–2010 school year would exceed 1000 as a result of the symposia.

The symposia also provided opportunities for participants to network. As one IHE faculty member reported, “there’s been a lot of new relationships built as a result of this.” For example, one high school mathematics teacher reported that she appreciated the opportunity to network with other pre-calculus teachers and to learn about what other districts were doing. Another high school mathematics teacher who had been teaching for more than 20 years and who already knew most of the people at the symposia reported that, through the symposia, he learned about other activities that connected him to people he would not have otherwise met.

Interestingly, one high school mathematics teacher suggested the networking opportunities had not been as effective as she would have liked. The participant reported that she had requested assistance from a higher education faculty member during the first symposium. And, while the faculty member had acknowledged her pending request during the second symposium, she was still waiting to be contacted. While this might suggest a need to strengthen networking opportunities between K–12 and higher education, it might also suggest a need to build the capacity and better resource higher education to support dual credit in the region. It might also suggest a need for a more centralized strategy for the dissemination of dual credit information.

In addition to what was reported by the interviewees, analysis of participants’ responses to the exit ticket demonstrated participants’ intent to communicate with their colleagues about dual credit after the first symposium. One participant specifically requested contact information for other high school teachers working toward the same goal. In

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<sup>4</sup> Ohio Department of Education (2007). Typology of Ohio School Districts. Retrieved on May 18 from <http://www.ode.state.oh.us/GD/Templates/Pages/ODE/ODEDetail.aspx?page=3&TopicRelationID=394&ContentID=12833&Content=72474>. Last modified August 20, 2009.

response to their one thing learned, three participants noted they planned to share the information with administrators, mathematics teachers, and/or other content teachers. And, in response to the question about needed support, the majority of responses requested further information from, or meetings with, the higher education faculty who presented at the symposium. To help facilitate the follow-up, many participants voluntarily provided their name and contact information on the exit ticket itself.

### *Objective Three: Alignment*

All interviewees reported the symposia deepened alignment between K–12 and higher education curriculum. In particular, interviewees appreciated that the university faculty shared a document detailing the required content for all of the university’s pre-calculus courses as well as their own pre-calculus syllabi. Additionally, both higher education faculty members expressed some surprise that the alignment was as strong as it appeared. One faculty member reported that, while 70% overlap is required and 80% overlap is desired, the alignment of most of the high school courses was 100%. Where there was some discussion of changes, both acknowledged that it was likely due to the way the courses were titled and the texts selected (as opposed to issues of rigor or teacher competence). As one higher education faculty member related:

There was some variation in topics covered in different high schools, partly because of the nature of the particular course at the high school. They are not all called pre-calculus. Some are algebra/trig or college algebra. Part of it depends on the particular textbooks they were using as well. So there was some variation in the content in high schools and that was part of what we did in the symposium was to have the high school teachers talk about that, talk about the books that they use, and the content in their own courses so they not only got a sense of the topics that were covered in the [university] courses but they also got some information about the topics covered and books used by other high schools in the area.

While the higher education faculty provided participants with a list of topics covered across the university system and shared their pre-calculus syllabi, one high school mathematics teacher reported that alignment seemed to be dependent on the branch campus. This suggests less uniformity than the document describes, and it goes against the higher education faculty member’s claim that the content is the same across the university system. The same mathematics teacher echoed the higher education faculty member’s sentiment that variation may be due to the way the courses were titled and suggested her high school could make two dual credit courses out of just one of its current high school courses. This suggestion at least implies that, in some cases, the high school courses may actually cover more content than if the student were to take the course in the college setting. This could be due to extended timeframe for completion of high school classes, which typically extend over the course of one year, as compared to college courses, which typically extend just one quarter. Thus, one year-long high school course could be equivalent to three quarter-long college courses.

#### *Objective Four: Rigor, Access, and Success*

All interviewees reported that the symposia reinforced for them the rigor of the dual credit courses. And, in response to the exit ticket following the first symposia, one participant reported her “one learning” from the day was that she believed the university was “as interested in maintaining the quality of instruction” as she was.

For interviewees, rigor was best demonstrated during the collaborative scoring of exams during the second symposia. As the higher education faculty noted, the grading activity demonstrated the alignment of expectations between high school teachers and higher education faculty. And, one high school mathematics teacher suggested that high school teachers may actually have higher expectations than higher education faculty members.

One of the changes the higher education faculty reported might be needed to ensure rigor related to the weighting of particular assignments and activities. The higher education faculty reported that their practice is to require students to complete a comprehensive final examination worth a significant portion of a student’s grade (one faculty member suggested that up to 30% of the grade should be based on the comprehensive final exam with the bulk of the remainder of the grade based on in-class quizzes and tests). All discouraged high school teachers from deriving a substantial portion of the grade from homework.

One higher education faculty member suggested any skepticism around rigor was the result of higher education’s pride. He related a story in which administrators and faculty of other institutions of higher education have contacted voluntary adjuncts to determine if the dual credit course was rigorous. Further, the faculty member reported some skepticism even among and within institutions of higher education as to whether courses not taken at their institution or taken at an arm of their institution offer the same level of rigor. Another faculty member suggested additional data would be needed to demonstrate rigor:

We need everything we can—all the ammunition we can—to say this dual credit works, it’s a good program, it’s rigorous, it’s at the college level and, here, look at the data. We can verify this.

In addition to their reflections on the symposia, higher education faculty members offered anecdotes about the current rigor of dual credit courses. One higher education faculty member related that he knew of dual credit students who had very easily jumped right into higher level college math courses following their dual credit experience. The higher education administrators echoed this sentiment and suggested that the mentoring provided by the higher education faculty member helps ensure and maintain rigor. Additionally, the higher education administrators and one of the faculty members referenced an internal study conducted by a faculty member at the college that found dual credit students did as well as traditional freshman students in subsequent courses.

While interviewees were overwhelmingly positive about the level of rigor in dual credit courses, one high school mathematics teacher suggested that higher education faculty would need to monitor high school teachers to ensure they are providing a rigorous curriculum. The same interviewee suggested disappointment that the symposia did not directly address the monitoring issue beyond the discussion of ongoing mentoring by higher education faculty.

As noted above, West Wind was unable to investigate the extent to which the symposia increased success for students in college-level courses in high school. Such objective was beyond the scope of this study and presents an opportunity for future research.

*What do participants perceive to be the implications of dual credit*

- *for K–12?*
- *for higher education?*
- *for continued collaboration among K–12 and higher education?*

In both the responses to the exit tickets as well as in the qualitative interviews, participants shared their perceptions of the implications of dual credit for the PK–12 system of education in Ohio. In analyzing the data, a variety of themes appeared. We discuss these themes below as they relate to K–12, higher education, and to the ongoing collaboration among the two.

*Perceived Implications for K–12*

The primary implication reported by participants was that dual credit provided unique benefits to K–12 that other similar programs did not provide. For example, participants reported that they preferred dual credit over the post-secondary enrollment option (PSEO) because PSEO required students to complete a minimum number of credit hours. Participants perceived the minimum credit requirement as beyond what should be required for high school students. Further, participants perceived the minimum credit requirement as contributing to students' difficulty in maintaining good academic standing. This sense of unrealistic expectations was expressed about the Seniors to Sophomores program as well. One higher education administrator suggested high school seniors may not be developmentally prepared to be on a college campus. Further, both higher education administrators and high school teachers reported that high schools may resent the PSEO and Seniors to Sophomores program because they lose their best students—as well as the funding that goes with them—to higher education.

Another common perception among interviewees was the belief that dual credit encourages collaboration and the development of professional learning communities. As one higher education administrator noted, teachers collaborate across high schools with teachers in the same discipline. The faculty member offered the example of a teacher who was happy to be in contact with another teacher who “spoke” calculus.

An important implication that was reported by the higher education administrators and faculty was the increasingly common practice of K–12 aligning its recruiting, hiring, and

teacher assignment practices with dual credit requirements. According to the interviewees, many high schools are recruiting and hiring teachers based on the criteria for being approved as a voluntary adjunct. The standards for adjuncts, set by the Higher Learning Commission (HLC), include holding a Master's degree and having earned a minimum number of credit hours in the content. According to one higher education faculty member, many high school teachers do not meet these criteria. Thus, not only are high schools recruiting and hiring based on such criteria, but some districts are moving high school teachers who do not qualify to their middle schools and moving middle school teachers who do qualify to their high schools. The same higher education faculty member suggested this might limit the pool of applicants. However, the faculty member opined that all good math teachers must have content knowledge as a minimum—albeit not exclusive—requirement. One higher education administrator echoed this sentiment, suggesting that content knowledge alone does not ensure teacher effectiveness.

One high school teacher appreciated the opportunity being approved as a voluntary adjunct might provide in terms of her own career trajectory. As a veteran teacher close to retirement, the teacher saw dual credit as a way to get into the higher education world. On the flip side, the same teacher suggested that it might be intimidating to early career teachers less confident of their skills.

In terms of curriculum, the conversation on alignment led some participants to see dual credit as a way to make their high school courses even more valuable to students. As one high school teacher reported, the fact that high school courses meet every day and may extend throughout the school year may allow schools to break into two college courses what was once a single high school course. In this way, the teacher suggested dual credit may be more beneficial to high school students than Advanced Placement (AP) courses.

While the majority of implications reported were positive, one teacher suggested dual credit may be a burden on high school teachers. The teacher noted the paperwork and reporting requirements that must be coordinated with the collaborating college or university. This concern was echoed by a higher education faculty member who recalled various points in the process that were difficult to negotiate such as student registration and reporting.

In addition to the implication of dual credit for adults in the K–12 system, interviewees offered some direct implications for high school students. Because dual credit courses require students to take a comprehensive final exam, one perception is that dual credit prevents the lost time associated with “senioritis” by keeping students engaged until the very end of the course. In this same line of thinking, dual credit was preferred over AP courses that may spend a significant amount of time preparing for an AP exam that not all students will go on to take.

Similarly, interviewees suggested some students take less rigorous courses because they are not motivated to work hard. Earning college credit may provide the extra motivation some students need to take more rigorous courses.

Along this same line of thinking, interviewees suggested dual credit provides students with opportunities to develop the habits required for success in college (e.g., self-pacing, independent study) in an environment that is not as high-stakes. In essence, dual credit provides students with a sense of the transition they will be required to make from high school to college. As one teacher noted, colleges are not going to require students to hand in materials each class or call their parents when they are not doing the required work. Further, dual credit may attract students who are, as one teacher suggested, “on the edge.” It may provide the opportunity for students questioning their ability to get through 6–9 credits in college math courses that they are capable of making it through.

Dual credit may also provide administrative benefits for students. Because students are required to actually enroll in the collaborating college or university, should they decide to continue in that college and university they may receive certain privileges (e.g., early registration, priority over new students) not available to traditional college freshman.

#### *Implications of dual credit for IHEs*

Interviewees reported several implications that may benefit IHEs in unique ways. First, it provides some opportunity for recruiting students. As one higher education faculty noted, higher education would benefit if dual credit students continued their enrollment. However, the same faculty member said it would be difficult to determine if such students would have come to the college anyway.

Second, it provides some opportunity for public relations. Because collaborating colleges often communicate with parents, dual credit may provide some opportunity to demonstrate its commitment to the community.

Third, it provides some opportunity for recruiting adjuncts. The one voluntary adjunct reported that he had been hired to teach a college course on campus in addition to his responsibilities with dual credit. The adjunct further reported that teaching at both levels allowed the adjunct to better understand what would be expected of high school students when they do matriculate into college. A flip side to this perception was offered as well in that dual credit may provide the opportunity for higher education faculty to learn more about what is happening in high schools so they have a better sense of the knowledge and skills students are bringing with them to college. For example, one higher education faculty member spends a great deal of his time mentoring dual credit adjuncts in local high schools and has gained a better understanding of mathematics at the high school level. As the same faculty member shared, “there’s a whole level of communication between the university and area high schools that didn’t exist before this.”

#### *Implications of Dual Credit for Continued Collaboration*

Interviewees involved in developing and delivering the symposia reported that the structures put in place by the Hamilton County ESC and the colleges were critical to encouraging and sustained engagement. In essence, collaboration must be intentional and intentionally built into the system.

Additionally, interviewees reported that the symposia opened up a dialogue that was not present prior to the symposia. The networking opportunities provided and encouraged by the symposia connected participants in ways they had not been connected previously.

One challenge interviewees reported was the lack of funding and support for both leadership and administration of dual credit in the region. Higher education administrators and faculty reported that the success of dual credit in the region was due to a small group of leaders willing and able to promote it. In fact, as one higher education administrator reported, the work has largely been absorbed by a small group of people who support and promote it—particularly the assistant superintendent of the ESC and just a couple of higher education administrators. The same was true of higher education faculty and teachers. Both reported that the additional work required of them in collaborating must be valued and at least modestly compensated. And, higher education faculty suggested that engaging faculty and teachers beyond mathematics is an additional challenge.

All interviewees reported the collaboration between K–12 and higher education was not only desirable but essential for their own professional learning. In fact, interviewees suggested that increased collaboration would be necessary if they are to truly bridge the gap between high school and college.

### ***What are the implications of dual credit for policy?***

Document analysis, symposia participants' responses to the exit ticket, as well as data collected through qualitative interviews provide for four key implications for policy.

First, the concept of dual credit must be further defined and communicated. Several interviewees suggested that additional guidance from the state would help them better understand, promote and collaborate toward offering dual credit to high school students. Further, one interviewee suggested the state take a more systemic approach to dual credit to increase awareness of dual credit in the region and the state.

Second, dual credit should be organized to promote collaboration among K–12 and higher education. Interviewees reported that other programs designed to provide college credit to high school students created unnecessary competition among the levels and prevented them from working together for the benefit of students. Care should be taken to promote a systems perspective so that both K–12 and higher education see themselves as part of a large professional learning community with mutual goals.

Third, dual credit should attend to skepticism about alignment and rigor. Interviewees suggested a culture of distrust between K–12 and higher education and among higher education institutions. This distrust may be mitigated as more people become aware of dual credit, its requirements and processes, as well as its impact on students' matriculation and retention in college. While data is available, such data must be shared in meaningful ways throughout the region and state. As one interviewee suggested, the

system needs data to demonstrate that dual credit is working for all involved. As one faculty member stated:

All I know is that there is a willingness on the part of some university administrators in Ohio to embrace dual credit and programs like this to make it easier to transition from high school to college, to make college more accessible, to encourage students who may not go to college to go to college for at least some period of time. I see this as all positive.

The same higher education faculty member opined that lack of state funding will not make the program go away—just move to parent-pay model.

Fourth, as related to the third implication above, the parent-pay model has at least two implications, one regarding scope and the other regarding equity. In terms of scope, parent-pay models may open up the content for dual credit beyond mathematics, science and foreign languages. In terms of equity, parent-pay models may present challenges not currently present with regard to equity. Because higher education is prohibited from discounting tuition for dual credit, one solution has been for higher education to scholarship large portions of the cost, for districts to pay part or all of the costs, or for some combination of these methods. Without grant funding, higher education is moving to a parent-pay model wherein parents pay a particular amount per credit hour for students to participate in dual credit. While more affluent parents may see this as an opportunity for their students to earn college credit at less expensive rates, less affluent parents may not be able to afford even a modest amount. While districts may be able to cover some of these costs, deep budget cuts have limited their opportunity to provide much by way of financial support. As one higher education faculty member lamented, “if the goal is really, truly to get some less-fortunate students to go to college, this grant is very important.”

## CONCLUSION

The dual credit pre-calculus symposia were developed to achieve the following four objectives:

1. To [help participants] understand the concept of dual credit;
2. To increase the awareness of dual credit and networking opportunities throughout the region;
3. To deepen the alignment between pre-calculus courses in the regional high schools and institutions of higher education;
4. To increase rigor, access, and success for students in college-level courses in high school.

Overall, the symposia met the objectives (with the exception that students' success is beyond the scope of this study). Participants developed a better understanding of the concept of dual credit, the symposia increased awareness of dual credit and networking opportunities through the region, deepened alignment between high school and higher education curriculum, and increased rigor and access.

Perceptions of dual credit suggest benefits unique to K–12 and unique to higher education as well as benefits to continued collaboration among the levels. Benefits include recruitment and retention of students as well as the opportunity to bridge the gap between high school and college.

While the interviews were conducted prior to the announcement that the state grant would not be renewed, interviewees were anticipating having to move to a parent-pay model. While the parent-pay model may release K–12 and higher education from having to comply with the requirements, interviewees suggested it might also limit access to more affluent students and/or more affluent districts.

## **APPENDIX A. Interview Protocol for Higher Education Administration and Faculty**

### **Southeast Ohio Teacher Development Collaborative February 2009 and April 2009 Pre-Calculus Symposia**

#### Interview Protocol for Higher Education Administration and Faculty

**Explain study** [*West Wind Education Policy, with funding from the Martha Holden Jennings Foundation, created the Teacher Development Collaboratives with the express goal of improving teacher preparation and professional development in Ohio. The Southeast Teacher Development Collaborative—located at Hamilton County ESC—recently held two symposia on dual credit. The symposia were planned and delivered in collaboration with the University of Cincinnati Clermont and Raymond Walters branch campuses. The purpose of this study is to learn more about the outcomes of that collaboration and what participants took away from the symposia.*]

**Guarantee confidentiality** [*Your participation in this study is voluntary. You may choose not to respond to any question or to stop the interview at anytime. Additionally, your responses will be kept strictly confidential. We will not share your responses in a way that would identify you as an individual without your express written consent.*]

**Time to complete interview** [*The interview is designed to take no more than 20-25 minutes.*]

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Name of Participant:

Role:

Years as faculty:

Years teaching mathematics:

Years teaching pre-calc:

1. How did you become involved in the pre-calc symposia?
2. How did you engage in planning the symposia?

*Prompt: How did you work with the ESC and adjunct faculty representatives? How did you determine the symposia objectives? How did you determine the agenda?*

*Prompt: How did you come up with the handouts (req'd topics for Algebra I and II)(note: probe if they are familiar with NCTM and how this relates to their standards)*

3. What did you learn about the alignment/rigor of high school pre-calc courses and the courses at UC?

*Prompt: Do you have conversations about rigor across UC and its various campuses?*

*Do you have 70% overlap in your syllabi across UC and its various campuses?*

4. What else did you learn by participating in the symposia?
5. How much contact did you have with participants following the symposia?
6. What do you see as the benefits to the university/to you personally in assisting districts/schools in obtaining dual credit?

*Prompt: What is the value of this type of collaborative work for your own professional learning?*

7. What do you see as the benefits to the university/to you personally in assisting individuals in becoming certified as adjunct instructors?
8. Are there other benefits of collaboration among K–12 and higher education?
9. What do you see as the challenges of collaboration among K–12 and higher education?
10. What could the ESC/Collaborative do to make the collaboration with the university stronger?
11. There is hope that dual credit shores up a seamless system PK–16 or PK–20 system. What do you make of this hope?

*Prompt: What would need to happen to make this hope a reality?*

12. When we entered this work, we had both a short- and long-term goal. Our short-term goal was to increase access to dual credit for those kids prepared to do it. Our long-term goal was to extend access to college level courses to all kids. Now, we're not sure that helping kids already prepared for college will help out all kids. What do you make of dual credit in terms of increasing equity?
13. As a mathematics faculty member at UC {campus}, does your department have the capacity to help prospective mathematics teachers learn how to teach math (as opposed to learn how to do math)?

## APPENDIX B. Interview Protocol for Voluntary Adjunct Faculty

### Southwest Ohio Teacher Development Collaborative November 2009 and April 2009 Pre-Calculus Symposia

#### Interview Protocol for Voluntary Adjunct Faculty

**Explain study** [*West Wind Education Policy, with funding from the Martha Holden Jennings Foundation, created the Teacher Development Collaboratives with the express goal of improving teacher preparation and professional development in Ohio. The Southeast Teacher Development Collaborative—located at Hamilton County ESC—recently held two symposia on dual credit. The symposia were planned and delivered in collaboration with the University of Cincinnati Clermont and Raymond Walters branch campuses. The purpose of this study is to learn more about the outcomes of that collaboration and what participants took away from the symposia.*]

**Guarantee confidentiality** [*Your participation in this study is voluntary. You may choose not to respond to any question or to stop the interview at anytime. Additionally, your responses will be kept strictly confidential. We will not share your responses in a way that would identify you as an individual without your express written consent.*]

**Time to complete interview** [*The interview is designed to take no more than 20-25 minutes.*]

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Name of Participant:

Role:

Years as adjunct faculty:

Years teaching mathematics:

Years teaching pre-calc:

1. How did you become involved in the pre-calc symposia?
2. How did you engage in planning the symposia?

*Prompt: How did you work with the ESC and UC representatives? How did you determine the symposia objectives? How did you determine the agenda?*

3. What did you learn about the alignment/rigor of high school pre-calc courses and the courses at UC?
4. What else did you learn by participating in the symposia?
5. How much contact did you have with participants following the symposia?
6. How much contact did you have with the faculty following the symposia?

7. What do you see as the benefits of collaborating with the university?
8. What do you see as the challenges of collaborating with the university?
9. What could the ESC/Collaborative do to make the collaboration with the university stronger?

## APPENDIX C. Interview Protocol for High School Participants

### Southeast Ohio Teacher Development Collaborative February 2009 and April 2009 Pre-Calculus Symposia Interview Protocol for High School Participants

**Explain study** [*West Wind Education Policy, with funding from the Martha Holden Jennings Foundation, created the Teacher Development Collaboratives with the express goal of improving teacher preparation and professional development in Ohio. The Southeast Teacher Development Collaborative—located at Hamilton County ESC—recently held two symposia on dual credit. The symposia were planned and delivered in collaboration with the University of Cincinnati Clermont and Raymond Walters branch campuses. The purpose of this study is to learn more about the outcomes of that collaboration and what participants took away from the symposia.*]

**Guarantee confidentiality** [*Your participation in this study is voluntary. You may choose not to respond to any question or to stop the interview at anytime. Additionally, your responses will be kept strictly confidential. We will not share your responses in a way that would identify you as an individual without your express written consent.*]

**Time to complete interview** [*The interview is designed to take no more than 20-25 minutes.*]

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Name of Participant:

District/School:

Role:

Years as teacher:

Years teaching mathematics:

Years teaching pre-calc:

1. To what extent did the symposium increase your awareness of networking opportunities throughout the region? [O2]
2. What did you learn about the alignment and rigor of your pre-calc course and pre-calc at UC? [O3/O4]

*Prompt (if attended second symposium): How did the second symposium add to your learning?*

3. Short-term goal “to increase rigor, access, and success for students, all high school students in our region who are prepared will have access to college-level courses in high school.” Long-term goal “All high school students in our region—particularly students from subgroups currently underrepresented in college-level courses—will be prepared to take college-level courses immediately after high school. Further, all

students prepared to take college-level courses *in* high school will have access to rigorous courses.”

4. How have you used the knowledge you gained at the symposium in your district/school?

*Prompt: Did the symposium help you apply for/obtain dual credit in your district/school? Did the symposium help you or your colleagues obtain adjunct faculty status?*

5. There is hope that dual credit will lead to a seamless PK–16 or PK–20 system. What do you think?
6. How have you continued communication with UC faculty? What was the substance?
7. What do you see as the benefits of the involvement of higher education faculty?

*Prompt: Do you see the higher education faculty as colleagues? Do you consider them to be resources?*

8. What could the organizers do to make the collaboration with higher education faculty more meaningful to you?