QUALITATIVE INSIGHTS ON THE PAST, PRESENT AND FUTURE OF A MICHIGAN INTERCOLLEGIATE CONSORTIUM FOR MRI PROGRAM DELIVERY

by

Janis M. Karazim

This dissertation submitted in partial fulfillment of the requirements for the degree of

Doctor of Education

Ferris State University

May 2013

QUALITATIVE INSIGHTS ON THE PAST, PRESENT AND FUTURE OF A MICHIGAN INTERCOLLEGIATE CONSORTIUM FOR MRI PROGRAM DELIVERY

by

Janis M. Karazim

Was approved by the Dissertation Committee

May 2013

APPROVED:

Noreen Thomas, Ed.D., Committee Chair

Dick Shaink, Ph.D., Committee Member

Julie Coon, Ed.D., Committee Member

ACCEPTED:
Roberta Teahen, Ph.D.
Doctorate of Community College Leadership Program
Ferris State University

ABSTRACT

With declining state and local funding, Michigan community colleges are striving to develop innovative strategies to keep pace with the rapid technological advancements that are changing the needs of workforce training. The field of medical imaging is no exception. While community college radiography programs have been the mainstay of meeting employer needs for staffing radiologic technologists, technology has evolved the "rad. tech." profession into highly specialized niche careers that include magnetic resonance imaging (MRI), computed tomography (CT), cardiac/vascular interventional imaging, mammography, and others, each requiring a skill set beyond that acquired in established radiography programs. That being said, the distinct nature of each specialization limits enrollment capacity, making these specialty programs cost-prohibitive for colleges to offer in traditional and competitive silos.

The MiRIS Consortium, a group of five Michigan community colleges and one university, responded to the challenge by forming a partnership to support quality and sustainable MRI programming, expanding the capacity of each individual partner college.

To address the replication potential of the MiRIS Consortium, the purpose of the study was to understand the key elements contributing to the development and sustainability of this particular intercollegiate partnership.

The research approach assumed a qualitative case study of the MiRIS Consortium over the development phase of the partnership and the first year of the MRI program. Three academic deans and six program directors from partner institutions were

interviewed to glean personal accounts of their experiences. A comprehensive document analysis was also conducted to augment the interview data.

The findings revealed the central focus of the partnership was in establishing an equitable financial model that would sustain over time. Another clear outcome from the study was the importance of pre-established relationships among individuals at the program level in bringing the colleges together with a common vision. It was from these individuals, the role of a champion emerged to provide leadership across the partnership and within individual partner institutions. The value of the Consortium's efforts had implications to an array of individuals, to organizations, and to the state's economic and education goals, while serving as a model for replication by others.

TABLE OF CONTENTS

APPENDIX Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

LIST OF ACRONYMS

AACC – American Association of Community Colleges

ACR – American College of Radiology

ASRT – American Society of Radiologic Technologists

ARMRIT – American Registry of Magnetic Resonance Imaging Technologists

ARRT – American Registry of Radiologic Technologists

CT – Computed Tomography

GRCC – Grand Rapids Community College

GVSU – Grand Valley State University

HLC – Higher Learning Commission of the North Central Association of Colleges and Schools

JRCERT – Joint Review Committee of Education in Radiologic Technology

KCC – Kellogg Community College

LCC – Lansing Community College

LMC – Lake Michigan College

MCCA – Michigan Community College Association

MCCVLC – Michigan Community College Virtual Learning Collaborative

MMCC – Mid Michigan Community College

MiRIS – Michigan Radiologic and Imaging Science

MRI – Magnetic Resonance Imaging

R.T., (R) – Registered Technologist, (Radiography)

R.T., (MR) – Registered Technologist, (Magnetic Resonance)

CHAPTER 1

INTRODUCTION

As colleges and universities face the challenge of finding equilibrium between increased demands and diminished resources, intercollegiate collaborations may serve as a viable strategy to cost-efficient program delivery. Educational partnerships are forming more frequently for a plethora of purposes, but research suggests these arrangements are often difficult to develop and even more difficult to sustain (Amey, 2010; Amey, Eddy, & Ozaki, 2007; Eddy, 2010). However, if successful, partnerships provide a means for institutions to realize shared visions and common goals that may otherwise prove prohibitive in isolation (Eddy, 2010).

This research project is a qualitative case study of the Michigan Radiologic and Imaging Science (MiRIS) Consortium, a group of five community colleges and one university that joined efforts to offer an educational program in magnetic resonance imaging (MRI). Speaking to the concepts of group dynamics, systems thinking, and change leadership, the study is grounded in the theoretical framework of organizational behavior as related to developing and sustaining an intercollegiate partnership rooted at the program level in the context of occupational program delivery. The researcher conducted individual interviews with six program directors and three deans from MiRIS Consortium institutions for the purpose of this study. Participants were asked questions

that were intended to gather insight on the social and organizational characteristics present during the formation of the partnership and those believed necessary for ongoing sustainability and growth. The researcher asked further questions to help understand the scope of the Consortium's significance—the added value this collaborative work provides to stakeholder groups. To supplement the interview data and lend depth to the research, a thorough document analysis was conducted revealing the timeline and process through which the MiRIS partnership evolved. The document collection ranged from the formal consortial agreement to meeting minutes, email exchanges and personal notes gathered from February 2009, the date the initial discussions about forming a partnership began, to the conclusion of this study in July 2012.

Contribution of the Study

This research project is important because it contributes to existing literature on educational partnerships. Although the challenges of forming and sustaining partnerships are endless, so are the benefits worthy of exploring how these arrangements work (Amey, 2007). Understanding the social and organizational construct of the MiRIS Consortium will help to inform the practice of others. Experiences of the MiRIS members serve as a foundation from which to learn and a template for application of existing theories related to partnership formation, sustainability, and growth.

The Profession

To lend context to the study, it is important for the reader to understand the evolution of MRI as one of several specialties that emerged from the overarching profession of radiologic technology.

Historically, the individuals that produced x-ray images in hospital radiology departments, outpatient facilities, and physician offices were referred to as "x-ray technicians." As technology advanced the profession, the scope of responsibility of x-ray technicians reached beyond just merely producing two-dimensional x-ray images. These professionals were charged with coordinating and assisting radiologists, surgeons, internists, and other physicians with more advanced and invasive imaging procedures, operating more sophisticated equipment, and caring for seriously ill and injured patients, often with a complex network of conflicting conditions. The expansion of technologist responsibilities required knowledge and competency of much greater depth and breadth than ever before (Harris, 1995). Comprehensive formal education in radiologic technology became necessary, which resulted in the title of "x-ray technician" evolving into the more suitable moniker of "radiologic technologist" or "radiographer" (Torres, Guillen-Dutton, & Linn-Watson, 2010). These titles continue to be used today to describe professionals who have completed an accredited educational program and obtained credentials through the American Registry of Radiologic Technologists (ARRT).

Radiography and *radiologic technology* are currently used interchangeably describing the same technology and technologist roles within the medical imaging profession. However, for many years *radiologic technology* served as an overarching term that encompassed not only radiography, but mammography, computed tomography (CT), MRI, sonography, nuclear medicine, radiation therapy, and several other diverging specialties.

With continued technological advancement, the field of radiologic technology eventually separated into five primary disciplines, each with an independent ASRT

curricula and ARRT certification exam. The five disciplines are radiography, sonography, nuclear medicine, radiation therapy, and, most recently, MRI, while mammography and CT continue to exist as specialties under the umbrella of radiography (Harris, 1995).

Because MRI was just recently identified as an independent primary discipline, most technologists currently performing MRI procedures are ARRT registered radiographers who received on-the-job-training often supplemented with seminars or workshops. Some of these dually trained technologists have secured ARRT certification in MRI, while others have not. Currently, no licensure or certification requirements exist in the state of Michigan for MRI technologists, which may explain the discrepancy of those holding ARRT credentials (ARRT, 2012b). In the absence of state mandates, ARRT registered radiographers who have secured MRI certification are motivated either by employer-driven requirements or personal professional development goals.

Not unlike the other medical imaging specialties, MRI requires a distinct knowledge base and skill set apart from that acquired in a radiography program, as the quality of MR images and subsequent patient diagnosis are heavily influenced by technologist decisions and actions with regard to image acquisition and processing (Harris, 1995). But while technology has had rapid and significant impact on shaping requirements for MRI technologist competence, an Internet search of accredited training programs indicates that educational programming has not kept pace (Joint Review Committee of Education in Radiologic Technology [JRCERT], 2012a). This could be problematic given the fact that job opportunities for medical imaging technologists are

expected to grow 28% by the year 2018, favoring those who hold advanced certifications in specialty areas such as MRI (Bureau of Labor Statistics, 2012).

The MiRIS Consortium Membership

Recognizing the challenges associated with offering an MRI program, discussions between six Michigan colleges eventually culminated in the formation of the Michigan Radiologic and Imaging Science Consortium.

The MiRIS Consortium member institutions represent the southwest region of lower Michigan as illustrated in Figure 1. The community college institutions are Grand Rapids Community College (GRCC), Kellogg Community College (KCC), Lake Michigan College (LMC), Lansing Community College (LCC), and Mid Michigan Community College (MMCC). The university partner is Grand Valley State University (GVSU).

Figure 1. MiRIS Consortium Map

The five community colleges vary in enrollment but share similar missions, and all have long-established entry-level radiography programs administered by highly experienced program directors. GVSU, on the other hand, offers an advanced program in radiologic and imaging sciences also administered by a highly experienced program director with a similar background to those of the community colleges. Each of the six program directors has more than 20 years of experience in the field of radiologic technology as an educator and as a practicing technologist.

All six MiRIS Consortium institutions maintain regional accreditation through the Higher Learning Commission of the North Central Association of Colleges and Schools (HLC). In addition, all community college radiography programs and the GVSU radiologic and imaging science program hold programmatic accreditation through the Joint Committee on Education in Radiologic Technology (JRCERT).

While the five community colleges offer an associate degree of applied science in radiography, GVSU's program serves as a baccalaureate degree completion program for registered technologists who have previously completed an accredited associate degree program. The ASRT curriculum guide serves the associate degree programs by assuring that graduates qualify to complete the primary certification exam in radiography administered by the ARRT, earning the professional credential of R.T.(R), Registered Technologist, Radiography.

The five community college associate degree radiography programs and the GVSU baccalaureate degree program are offered in the traditional face-to-face delivery format with a strong clinical education component.

The Conceptual Framework

An intercollegiate consortium agreement was drafted and signed by MiRIS partner institutions in December 2010, addressing such issues as purpose, leadership, and financial structure (Appendix A). HLC approval to enter into a consortial arrangement was granted in July 2011 (Appendix B). While the first cohort of students started the program in March 2011, the group did not begin to function as a consortium until September 2011, after the HLC approval had been secured. It was during this fall semester that the financial structure was launched and the colleges began to share the revenue and expense associated with the MRI instruction. They also initiated a search to fill the full-time educational coordinator position to manage the curriculum and clinical education for Consortium institutions.

Leadership

Leadership for the MiRIS Consortium exists at two levels: the administrative level and the program level. The deans of the MiRIS partnering colleges provide collective direction with regard to Consortium financial issues and long-range strategic planning. Program leadership is provided by a Council comprised of the radiography program directors from each of the community colleges, the program director of radiologic and imaging sciences at Grand Valley State University, and the dean of the fiscal agent. The Council is ultimately responsible for execution of the educational program, with decisions and actions limited to student success strategies and JRCERT accreditation compliance. This group is charged with securing and maintaining JRCERT accreditation, oversight of curricular quality, the recruiting and development of qualified instructors, the establishment and maintenance of clinical education affiliation

agreements, program policies and processes, and program assessment and continuous improvement strategies. In compliance with JRCERT accreditation standards, the Council appointed one member to serve as the program director acting as a liaison for program issues and Council members.

Kellogg Community College (KCC) serves as the MiRIS Consortium fiscal agent responsible for annual financial reconciliation and for the employment of the MiRIS educational coordinator. Although the cost related to this full-time position is shared equally among member colleges, the educational coordinator is an employee of KCC.

The educational coordinator is directly engaged with students at the course level with oversight of the day-to-day operation of the program, assuring student learning outcomes are met. The coordinator makes recommendations to the Council on issues related to curriculum, instruction, and program improvement.

Currently, the MiRIS Consortium limits its offerings to MRI education; however, the long-range plans include expanding offerings to other specialty disciplines such as CT, mammography, cardiac and vascular interventional imaging, and others. Certification exam preparation and continuing education for registered technologists are also within the scope of the Consortium vision.

The MRI Program

The individual colleges each admit four students to the MRI program for a total cohort of 24. Applicants must meet a minimum level of academic readiness determined by the MiRIS Consortium Council, and once met, each college then admits students to the program according to the college's individual admission criteria and processes. The

admitting college serves as the "home" college, awarding the degree or certificate upon program completion.

The Consortium's shared MRI core curriculum consists of 37 credits equating to one set of 13 courses (Appendix C). For students pursuing a degree rather than a certificate, general education requirements are determined and offered by the degree-granting home college. The MRI program and courses are designed and developed to align with the curriculum guidelines provided by the ASRT for MRI education, the certification exam specifications provided by the ARRT, and the quality standards defined by the JRCERT.

The Michigan Community College Virtual Learning Collaborative

The MRI didactic courses are offered in an online format through the Michigan Community College Virtual Learning Collaborative (MCCVLC). MRI students from each of the six colleges enroll in the MRI courses through the MCCVLC and progress through the program of study as a cohort. Clinical courses are accomplished with assignments to hospitals and other healthcare providers in each student's home community. The clinical courses also include an online component that brings the cohort together in a virtual forum intended to enrich the hands-on clinical learning experience.

As cited by Eddy (2010), the work of Godbey and Richter (1999) and Widmayer (1999) suggests the use of technology as a means to create shared degree programs and delivery options. The technology and services provided by the MCCVLC is a central feature of the MiRIS Consortium model of program delivery. The MCCVLC is a function of the Michigan Community College Association (MCCA) and serves as a common platform allowing Michigan community college students to complete courses from other

Michigan community colleges while maintaining the services and resources provided by their home school, such as computer labs, libraries, tutoring, etc. Besides providing a common portal to courses, the MCCVLC has established formal agreements addressing tuition, financial aid, and other structures to serve students and MCCVLC member colleges (MCCVLC, 2012). The MCCVLC is a service provider only. All courses are designed and delivered by faculty of the college offering the course through the MCCVLC portal.

The University Partner

For the community college students who wish to pursue a baccalaureate degree, GVSU's inclusion in the MiRIS Consortium provides for an efficient non-duplicative pathway. An individual plan is drafted for these students, allowing them to progress through the MRI program of study completing courses at the 200 level, paying community college tuition rates until transfer benefits are exhausted. The student then continues in the program, enrolling in the MRI courses as a GVSU student paying the higher university tuition rate, and completing the courses designed at the 300 level. GVSU students and community college students are enrolled in the same 200 level MRI course sections; however, the GVSU students are required to complete advanced activities and assessments designed and facilitated by the university to elevate the course to a 300 level. GVSU has offered articulation agreements with the Consortium's community college partners to accept between 80 and 85 credits toward the baccalaureate degree, reducing the time and cost for students to complete the degree. Reverse transfer procedures exist to ensure the community colleges address the completion agenda by awarding GVSU transfer students associate degrees, and the Consortium's financial

structure promises mutual benefit when community college students transition to the university. The phrase "reverse transfer" refers to the process of transferring university credits back to the community college so that the student can be awarded a degree at the community college. As a result, the student receives both an associate degree and a baccalaureate degree.

Problem Statement

Educational programs in the health care domain are costly for community colleges to offer (Fain, 2012; Moltz, 2010), especially those that train students in highly specialized niche careers such as MRI. The high cost of nursing and allied health programs are largely due to (a) an inherent characteristic of low enrollment capacity limited by clinical education availability, (b) a low faculty-to-student ratio imposed by accreditation standards, and (c) lab equipment acquisition and maintenance.

This study specifically explores an intercollegiate collaborative model intended to address prohibitive financial implications of offering an MRI program. Emerging as a primary discipline separate from radiography, MRI lends to even lower enrollment numbers than those of radiography. Program enrollment is typically defined by the number of clinical education opportunities for students and subsequent job potential for graduates. As a career becomes more narrowly focused, so does the enrollment capacity and job market. Enrollment in nursing and allied health programs is probably best understood by comparing the large number of nurses employed by a hospital with the smaller number of radiographers and even smaller numbers of MRI technologists. Thinking about it from this perspective gives reason as to why colleges have imposed

limits on enrollment capacities and why very few students can be enrolled in MRI programs as compared to radiography and nursing programs.

Like radiography, JRCERT accreditation standards for MRI programs require a low student-to-faculty ratio. Standards demand that the program maintain a director or an educational coordinator with a master's degree and certification in MRI (JRCERT, 2012b). While the program director may also teach didactic courses, administrative responsibilities typically consume significant time, making it necessary to hire qualified didactic faculty. Often the program director or educational coordinator is a faculty position with a 9-month work schedule, requiring colleges to pay adjunct faculty to accommodate summer programming needs.

Further contributing to costly health care programs are equipment needs. Replicating the experiences of the clinical setting allows students to develop skill and confidence in a low-stakes learning environment before advancing to the high-stakes clinical environment. However, this replication strategy requires that colleges maintain learning labs with current and relevant equipment. Common channels to acquiring instructional equipment include in-kind donations from business and industry and grant funding through federal and state initiatives, although the cost for installation and continued maintenance is not always secured as part of the initial acquisition.

Providing evidence to the high cost of occupational programs specifically in the health care disciplines, the Cost to Educate Model (Kellogg Community College, 2011a) prepared to illustrate instructional costs in comparison to tuition revenue demonstrates a loss of $138,000 for the radiography program in the fiscal year of 2009-10. Not atypical,

this finding is based on a total enrollment capacity of 40 students with one full-time faculty position and one full-time administrative position required to deliver the program.

To help offset losses, some colleges are considering charging differential tuition for high cost programs (Fain, 2012). This practice does not come without controversy, however, as some argue that it conflicts with missions that promise open and equal access for all students (Fain, 2012). Sharing resources through a collaborative effort such as the MiRIS Consortium provides an alternative or parallel strategy to differential tuition as a means of financial balance.

Research Questions

To advance existing research in understanding intercollegiate partnership success and failure, the study presents the following questions:

1. What added value does the MiRIS Consortium provide stakeholders?
2. How are administrator and faculty roles impacted by the formation and function of an intercollegiate consortium for the delivery of certificate or degree programs in magnetic resonance imaging?
3. How is organizational culture impacted by the formation and function of an intercollegiate consortium for the delivery of a certificate or degree program in magnetic resonance imaging?

Delimitations and Limitations

Delimitations are chosen boundaries determined by the researcher to taper the scope of the study. For this work, the researcher chose a bounded case study of the MiRIS Consortium, focusing on the social and organizational characteristics that brought the group along in their efforts. The intent of the researcher was to contribute to a

knowledge base of intercollegiate partnership formation and sustainability that speaks to the theoretical framework of organizational behavior. Student success is a delimitation of the study. The latitude of the research did not include quantitative student learning outcomes such as course success percentages, certification exam pass rates, or job placement statistics. Qualitative student perceptions were also intentionally omitted in the research process. Student success was excluded for two reasons: (a) it did not impact the formation of the consortium, although it does have implications to ongoing sustainability; and (b) time restrictions of the study did not allow for the first cohort of students to finish the program, supplying any outcome data for analysis.

Limitations are influences beyond the researcher's control that may affect the results of the study. A limitation of this study is the proclivity for researcher bias and reactivity to participant response due to her active involvement with the MiRIS Consortium from its inception. The researcher is the career and occupational dean for the Consortium's fiscal agent, Kellogg Community College. She is also a former radiography program director and has significant past experience as a practicing radiologic technologist. Her relationship with participants could influence the study through either honest and forthcoming responses, or guarded and ambiguous responses. With full disclosure, efforts to validate findings through a variety of means have been executed.

Further limitation of the study is realized by the narrow inclusion of one partnership between six colleges in lower Michigan, restricting generalization of findings.

Organization of the Study

This study has been organized into five chapters. Chapter 2 provides a comprehensive literature review of partnerships, with emphasis on those in the

educational sector, identifying the characteristics that contribute to the success and failure of these types of collaborative arrangements.

Chapter 3 describes the research methodology used for the study, including participant selection, data collection, analysis, and validity. The rationale for the methodology chosen is also addressed. Chapter 4 presents the findings from the participant interviews and document review, linking them to the research questions. The chapter also provides an analysis, interpretation, and synthesis of the findings. Chapter 5 provides a thorough reflection of the work, drawing conclusions and giving thought to relevance and direction for further inquiry.

Summary

If sustained over time, the MiRIS Consortium has the potential to serve as a model impacting how community colleges approach occupational education within the state of Michigan and beyond. An intercollegiate partnership like the MiRIS Consortium brings the philosophy of "serving the greater good" to fruition by setting aside individual agendas and intentionally serving a region of the state as opposed to a defined district. This strategy avoids saturation of the job market in an individual college community while underserving in others. An intercollegiate partnership requires leaders, faculty, students, and employers to think differently about how occupational education is delivered. It requires a strong willingness to change the status quo of traditional competition and instead adopt a spirit of collaboration that will allow all partners to better serve their constituents.

For faculty, the MiRIS Consortium model requires thinking differently about effective teaching and learning methods, especially for those in programs where the

traditional face-to-face, time-bound delivery formats have prevailed. The MiRIS model of hybrid delivery, coupling online didactic courses with clinical-based education, allows colleges to share curriculum and courses and offers greater access to students in need of online flexibility to balance educational goals with work and family responsibilities.

The business model established by the MiRIS group provides colleges the fiscal leverage to better address student and employer needs. The ability to offer a comprehensive menu of highly specialized training provides students who are currently employed in an occupational field an opportunity to develop their professional value by mastering new and emerging technology, while providing those just entering the career a choice to expand their marketability by acquiring competency in multiple technologies. A strong collaborative model that allows colleges to efficiently flex programming in response to advancing technology provides a constant supply of highly trained workers. A competent workforce translates to a reduction in employer training costs and legal liability, while at the same time improving consumer product or service.

The implications of engaging in an intercollegiate partnership for the purpose of program delivery are vast, yet these arrangements are relatively new. As demand for contemporary high-tech programming expands and state and local resources decline, colleges will need to seek out alternative strategies to meet these ever-increasing challenges. Historically, colleges have been polite in notifying neighboring institutions of their intent to start or expand programs that might impose a sense of competition. These polite notifications will need to assume a different tone as language regarding competition is replaced with conversations about collaboration. It will be important to pay attention as partnerships

such as the MiRIS Consortium form so that best practices can be established for others to learn from.

CHAPTER 2

LITERATURE REVIEW

This research study examines the characteristics of the Michigan Radiologic and Imaging Science (MiRIS) Consortium, a newly established intercollegiate partnership model that offers degree and certificate programs in magnetic resonance imaging (MRI). The researcher's intent was to understand why this particular group organized, determine the potential for sustainability of the MiRIS effort and, further, assess the value their work provides to various stakeholder groups. Supporting the study, a comprehensive review of existing literature relating to partnership success and failure, particularly within the educational sector, was conducted. Because the MiRIS Consortium is grounded in the context of technologist training in medical imaging, specifically in the modality of MRI, literature describing the profession was an important component of the literature review to understand the expanded need for training and how it is relevant to the MiRIS partnership.

The review of literature began in June 2010 and continued over a 2-year span that included the period of collection, analysis, and synthesis of data. The literature review targeted two principal topics: (a) Educational Partnerships, and (b) Medical Imaging Profession.

Chapter Organization

The two principal topics served as the major sections for the organization of this chapter. Under the first section, Educational Partnership, the reader will find headings that identify the three key influencing factors: Motivation, Trust, and Leadership. Central themes of each factor are arranged as subheadings.

The second major section, the Medical Imaging Profession, is organized by the following headings: Professional Organizations, Certification Pathways, Technologist Training, and Job Market Growth.

Section I: Educational Partnerships

Strongly emerging from the literature is the reality that educational partnerships are vulnerable social constructs that are difficult to develop and maintain (Casey, 2008; Eddy, 2010). The researcher reviewed significant material that described educational partnerships of community colleges with 4-year universities, K-12 schools, business and industry, non-profit organizations, and other entities. However, the literature was limited describing partnership structures between two or more community colleges and absent was any evidence of inter-community college collaboratives like the MiRIS Consortium that formed for the purpose of offering shared occupational programming in the medical imaging sciences. The potential value of this study is enhanced in its ability to address a literary void and contribute to the body of knowledge on intercollegiate partnerships among community colleges.

Partnership Definition and Terminology

Partnerships assume several different designations or tags, and so it is important for clarity and shared understanding to discuss the definition and assumptions surrounding the word *partnership*.

> Partnerships are defined as purposive strategic relationships between independent firms who share compatible goals, strive for mutual benefit, and acknowledge a high level of mutual interdependence. They join efforts to achieve goals that each firm, acting alone, could not attain easily. (Mohr & Spekman, 1994, p. 135)

Eddy (2010) described partnerships as "organizational pairings that may range from the informal to the more formal" (p. 3). Community college partnerships assume various arrangements: between and among other educational institutions, through departments across institutions, with business and industry, or with community-based organizations.

Throughout the literature, the intentional assembly of individuals or organizations assumes various designations other than "partnership." Among them are joint ventures, strategic alliances, consortia, coalitions, and collaborative arrangements (Eddy, 2010). While a precise and consistent definition for each was lacking, some arrangements inferred a certain degree of formality necessitating written agreements, while others assumed a less formal collegial and casual tone (Casey, 2008; Hoffman-Johnson, 2007). The various designations are used interchangeably throughout this chapter to describe an intentional assembly of individuals or organizations with a shared vision working for mutual benefit.

Influencing Factors of Partnerships

Understanding that partnerships are grounded in the social construct of relationships, the researcher expanded the literature review beyond that related to

educational partnerships and explored material from the business sector, confirming that the basic characteristics of successful partnerships are consistent, regardless of the setting. Emerging from the literature of Amey, Casey, Eddy, Murphy and Deering, Gage, and others cited within this chapter, three fundamental factors emerged that have profound influence on the formation, function, and sustainability of success of partnerships: (a) Motivation—the underlying purpose and value; (b) Trust—interfacing of human beings; and (c) Leadership—roles and skill sets. These three factors served as a framework for the organization of this section of the chapter and the basis with which to compare the features of the MiRIS Consortium to predict ongoing success of the model. The next three headings are devoted to the factors of motivation, trust, and leadership as they relate to partnerships.

Motivation

"Partnerships and collaborations provide an opportunity to solve challenging issues facing higher education by parleying resources, knowledge, and skills of individual partners to achieve joint goals and objectives" (Eddy, 2010, p. vii).

Eddy (2010) proposed that the underlying motivations for entering into a partnership strongly predict success, and she cites educational reform, economic development, dual enrollment, student transfer, student learning, resource savings, shared goals, and international joint ventures as some examples of common grounds that serve to inspire the formation of community college partnerships.

Amey, Eddy, and Ozaki (2007) also contended that the purpose of the partnership has significant influence on development, function, and sustainability, and they suggested that voluntary collaboratives under member control will respond differently than those

externally mandated and controlled by compliance criteria. Partnerships with a short-term vision will likely be formed under a different process than long-term arrangements, and how success is defined and measured will vary. Success may be in the form of a sole outcome achieved within a narrow timeframe, or it may be a long-term venture that has rolling outcomes intended to endure over time. Policy mandates, declining enrollment revenue, cost-sharing, grant funding initiatives, community needs, limited instructional capacity in certain subject matter, and unused facilities all provide incentive for collaborative efforts (Amey et al., 2007).

The literature revealed three overarching motivational drivers that serve to inspire educational partnerships: (a) economic benefits, (b) policy mandates, and (c) shared values.

Economic benefits. The motivation to partner driven by economic benefits was prevalent in the material reviewed. Leaders of public colleges and universities have faced intense challenges in recent years, forcing institutions of higher learning to engage in alternative strategies to find balance between escalating needs and declining resources (Amey et al., 2007). Experiencing what Kotter and Cohen (2008) described as a "sense of urgency," colleges are assuming more entrepreneurial strategies that include entering into partnerships structured to share resources so that they can do more with less. Community colleges in particular are contemplating how to meet mounting demands such as the lofty goals of the 2020 Graduation Initiative announced by President Barack Obama in 2010 (White House Summit, 2010), the ongoing training requirements for an ever-changing workforce (Society for Human Resource Management [SHRM], 2008), and the growing

needs of students and other stakeholders for new and expanded programs and services that foster both access and success (Myran, 2009).

Doing more with less. Literature supports that partnerships may serve as viable strategy in response to the "do more with less" dilemma faced by community colleges. Increased demand for expanded programs and services conflicts with the fiscal ambiguity of wavering state budgets, enrollment fluctuations, and taxpayer resistance to millage proposals, leaving colleges struggling to secure new revenue streams to fund missions (Amey, 2007; Sundberg, 2002). As a result, the potential for capacity-building partnerships is becoming more prevalent as colleges struggle with how to increase output (Eddy, 2010).

Further support for educational collaboration as a fiscal strategy is offered by Hoffman-Johnson (2007)—"collaborative efforts appear to have great potential for increasing effectiveness and efficiency in the fiscally constrained environment of higher education" (p. 17), and by Cloud (2010)—"college partnerships with public and private agencies will increase as pressure mounts to do more with less" (p. 78).

Sharing resources. The ability to share resources often serves as the primary driver of collaborative relationships. The shared assets of educational partnerships can stretch beyond the obvious tangibles of funding, technology, curriculum, facilities, and equipment to include such intangibles as the knowledge and expertise of staff (Eddy, 2010). "Because knowledge arises within social constructs and in multiple forms, the key to increasing knowledge lies in the effort to extend one's limited perspective" (Bartlett, 1990, p. 882, as cited in Amey & Brown, 2004, p. 1). Collaboration provides a platform for exchanging ideas and expanding possibilities.

A business model. Forming a partnership as a cost-savings strategy is commonly associated with the for-profit business sector, but education is beginning to follow suit as institutions become more entrepreneurial and contemplate new business models to support their missions.

Sydow (2011) spoke to applying a business model approach to the community college enterprise:

> By analyzing and appropriately applying successful business models both inside and outside higher education, we can inspire innovation, out-of-the-box thinking and creativity among our students, faculty and staff. If we are bold and act with swift and unflinching resolve to create new revenue streams for community college budgets, then maybe, just maybe, our sector of higher education will continue to ascend. (A business-like approach, para. 3)

Deering and Murphy (2003) suggested that the future of business will be based on networks of independent organizations with complementary skills and resources pursuing shared objectives. Mergers and acquisitions are giving way to strategic partnerships even in very highly competitive business sectors. "[Partnering] is one of the essentials of business success in the new millennium" (p. 1). Further, they note:

> For all sorts of reasons, to do with technology, competition, politics and access to resources, it is becoming imperative in more and more industries to seek new knowledge and capability through partnering. It is the only way to operate in the marketspace; it is fast becoming the best way to operate in an increasingly competitive and liberal marketplace, and it is the only way to detect and respond quickly enough to the wishes of increasingly diverse and capricious customers. (pp. 6-7)

While Deering and Murphy (2003) touted the partnership strategy, they readily acknowledged that 70% of companies will fail to find success with collaborative efforts, inviting opportunity for alert and agile competitors.

Deering and Murphy spoke to the business sector, literature on educational partnerships parallel their sentiments to the extent that partnering will also be essential

for the success of educational institutions, but just as with business, most will likely fail to bring their collaborative objectives to fruition. Amey (2007) noted:

> Despite the benefits of collaboration, many partnerships fail to obtain desired results, cannot be sustained, or cease to benefit both parties. In an era of increasing accountability, it is critical to understand why so many partnerships fall short of their goals. (p. 1)

Beyond economics. While economic benefits are a strong motivator to form partnerships, they are not necessarily enough to sustain them. Even with a serious threat of financial survival looming, collaborative success is not a certainty if other critical factors are absent, namely a shared vision and the guidance of a trusted champion, especially during the early stages of the effort (Eddy, 2007).

With economic pressures predicted to continue (Hoffman-Johnson, 2007) and partnerships increasingly becoming a central strategy in college operations (Spangler, 2002), institutions will need to pay attention and learn from the experiences of successful models—how they form, how they function, and how they sustain—so that best practices can be replicated. It will be important to "understand more about partnerships to discern the reasons for their frequent failures and to highlight the structures and processes that promote success and sustainability" (Eddy, 2010, p. 2).

Policy mandates. Educational partnerships are often motivated by federal and state initiatives, reform efforts, or legislative mandates intended to develop an educated and gainfully employed populace (Amey et al., 2007). Warford (2009) argued that "the U.S. education system is actually a series of systems and silos: K-12, community colleges and higher education are often administered, funded and governed by separate agencies" (p. 126). This truth is evolving, however, as legislators are learning to recognize the value of partnerships as means of creating an educational pathway that fosters unduplicated

efforts across educational levels, increases accountability, improves outcomes, aligns education and training with workforce needs, and ensures the economic development of a community (Bragg & Russman, 2007). "Policymakers view partnerships as a strategic way of meeting the state's education and economic goals . . . [and] . . . state governments are formulating policy to reward academic partnership" (Amey et al., 2007, p. 5). Community colleges are recognized as being in a pivotal position to provide linkage between high schools and universities and between high schools and workforce in the education-to-career continuum (Amey, 2007).

Examples of federal legislation directly tied to funding include the Workforce Investment Act (WIA) of 1998 and the Carl D. Perkins Career and Technical Education Act of 2006. Both legislative acts mandate collaborative partnerships as a condition of eligibility for federal grant dollars (Bragg & Russman, 2007).

Beyond WIA and Perkins legislation, another example of policy-mandated collaboration is the P-16 initiative, which has gained momentum. The P-16 continuum is a system that integrates educational efforts from pre-school through a 4-year college degree (Bragg & Russman, 2007). The underlying strategy is to eliminate duplication of secondary and postsecondary education so that the time and cost from diploma to degree, or certificate, is reduced. As a result, most states have dual-enrollment legislation that mandates a partnership between secondary and postsecondary institutions that allows high school students to enroll in college courses (Farrell & Seifert, 2007).

Shared values. Shared values, visions, goals, and passions can be the source of great power and inspiration. Strong partnerships are dependent upon the social construct of favorable relationships between people with a mutual passion as much as they are the

tangible assets of funding, facilities, technology, and time. In contrast, partnerships that are mandated by legislation, or are the result of a senior leadership directive, are particularly vulnerable to failure as the social strength that rises from compatible relationships is missing (Amey, 2007). Forced collaborations tend to structure around compliance criteria, and when the conditions for which they were formed change or are eliminated, the motivation for continuing collaboration fails because cooperative relationships were not established (Eddy, 2010).

Academia. A common shared value and passion of those in academia is the love of teaching and learning; however, social and organizational structures are such that collaboration is obstructed. According to Kezar and Lester (2009), "not only are faculty socialized into particular disciplines and paradigms, but they also are trained to work mostly is isolation . . . the culture of the academy reinforces individual work" (pp. 26-27). When faculty do overcome collaborative barriers, either by choice or by force, they often find conflict despite shared passion. Important philosophies central to curriculum design and delivery can differ widely, requiring a vastly new way of thinking for successful collaboration. Amey and Brown (2004) illustrated a transition from a mindset of isolation to one of collaboration in Table 1.

Table 1

Interdisciplinary Collaboration Model

	Stage 1	Stage 2	Stage 3
Discipline Orientation	Dominant	Parallel	Integrative
Knowledge Engagement	Expert	Coordinated	Collaborative
Work Orientation	Individual	Group	Teams
Leadership Orientation	Top-Down	Facilitative, Inclusive	Web-like, servant

(Amey & Brown, 2004, p. 50)

Conflict arising out of a shared passion should be expected and even welcomed as inspiration for change and innovation (Deering & Murphy, 2003). More fully discussed later in this chapter, a strong foundation of trust establishes a mutual respect that enables partners to freely engage in an exchange of ideas as a means of resolving conflict, finding solutions, and expanding possibilities (Covey, 2006; Lencioni, 2002).

Shared values, vision, goals, and passion culminate in great power, and with a plethora of support from literature, the success of partnerships is highly contingent upon this collective power (Deering & Murphy, 2003; Eisner, 2010; Gage, 2004). "Partnerships based on shared visions or goals create a synergy and buy-in for participants that help cement relationships and build trust in seeking common desires" (Eddy, 2010, p. xi).

Synergy. Gage (2004) suggested that one of the greatest advantages of a partnership is the synergy created as participants engage in pondering the vast possibilities that shared efforts could net.

Covey (2011) described synergy as follows:

> Synergy is what happens when one plus one equals ten or a hundred or even a thousand! It's the mighty result when two or more respectful human beings determine together to go beyond their preconceived ideas to meet a great challenge. It's about the passion, the energy, the ingenuity, the excitement of creating a new reality that is far better than the old reality. (p. 12)

The motivation to collaborate sometimes rises from the intrinsic values of individuals who possess unwavering passion toward a common goal, or from a desire to be part of a larger body of work, or it may be driven by the recognition and power of being able to influence change (Eddy, 2010). Partnerships sometimes form out of enduring personal relationships between those with a mutual passion, realizing their collective energy holds great potential for expanding or strengthening their individual work (Amey et al., 2007).

Happiness. Furthering the theory that personal fulfillment drives partnerships is the premise that collaboration brings happiness. Given equal levels of success, those who grew with others are happier than those who found success alone. "They had someone else with whom to experience the challenging lows and ecstatic highs; another person in the trenches; another person to pop the champagne. Working together is much better than working . . . alone" (Eisner, 2010, pp. 282-283).

Kezar and Lester (2009) suggested that collaboration is a natural and inevitable phenomena that addresses the need for belonging:

> Collaboration . . . seems to be the most natural and perhaps the easiest activity that we can imagine. As human beings, we are constantly engaged in

> relationships, we often envision the world as interdependent, and in society we live in a cooperative fashion. It's hard to imagine societies or an organizational world in which collaboration would not exist. (p. ix)

Partnerships formed through enduring personal relationships benefit from an established degree of trust and a pattern of communication that may lend considerable value to the group's initial success in shaping the collaborative framework. In contrast, Amey et al. (2007) attested:

> If the collaboration is mandated or considered short-term, the development process is often ignored or short-changed and the partnership entails assumed rationale and buy-in. Such an arrangement is not often sustained; does not meet the objectives or results in ill-will, misuse of resources, and organizational dysfunction. (p. 12)

The literature emphasizes economic benefits, policy mandates, and shared values as three key motivators for collaboration. Of the three, shared values emerged as the only intrinsic inspiration, while economic benefits and policy mandates are extrinsic forces (Eddy, 2010). Shared values provide a commonality, an implied trust within which to build a collaborative relationship, and as abundantly present in much of the material, trust is the core of a successful partnership.

Trust

"Indeed, Mohr and Spekman (1994) posit that trust is so important that a reliance on trust could eliminate the need for formal contracts" (p. 76, as cited in Casey, 2008). Trust is central to affirmative human interaction, the product of effective communication, and the catalyst for highly functioning teams (Casey, 2008; Covey, 2006; Lencioni, 2002; Peppers & Rogers, 2012; Spangler, 2002).

Competency and character. Covey (2006) contended that trust is the product of character and competence. Covey's criteria for having good character is being a good

person, a sincere person with ethics and integrity. An inherent attribute, character is reflective of one's motive or intent with regard to others. Competence, on the other hand, is situational and encompasses one's abilities, skills, and history of past results. Feltman (2009) addressed character as someone who cares with the best interest of others in mind, in addition to his or her own when making decisions and taking action. Feltman described competence as "the ability to do what you're doing or propose to do" (p. 35). Trust is based on both qualities; character and competence are not mutually exclusive (Covey, 2006).

Covey (2006) said that the words to describe character and competence may differ but claimed, "If you reduce the words to their essence, what emerges is the balancing of character and competence" (p. 31). He cited the following examples:

- Jim Collins – author of *Good to Great* – speaks to *extreme personal humility* (character) and *intense professional will* (competence) when describing attributes of a Level 5 leader.
- Warren Buffet – prioritizes *integrity* (character) and *intelligence* (competence) as qualities he looks for in people.
- Leadership theory addresses *what a leader is* (character) and *what a leader does* (competence).
- Ethics theory addresses *do the right thing* (character) and *get the right thing done* (competence).
- Decision-making approaches focus on balancing the *heart* (character) with the *head* (competence).

These points are important as they stress the fact that character and competence are not mutually exclusive in a trusting partnership. For example, a partner may have the utmost character, an obvious level of integrity with a very steady moral compass and genuine intentions. However, the partner will not be trusted if he or she lacks competence in the knowledge and skill set necessary to lead or carry out the work of the partnership.

Trust is a reciprocal behavior, but trust must be extended for it to be returned. A high level of trust is the result of mutual respect and a sense of competence and integrity. If these characteristics are present in a partnership, the ultimate objectives are more likely to be achieved (Bryk & Schneider, 2002, as cited in Ozaki, Amey, & Watson, 2007). "Trustworthiness depends on the obligations within the relationship and the extent to which they are re-paid" (Ozaki et al., 2007, p. 108). Trust is what makes successful partnerships successful. Trust generates cooperation, which, in turn, builds trust—a truly positive feedback loop (Gage, 2004). Time and energy are required to build trust within a productive network (Kezar & Lester, 2009). "Let go. Trust people because only the trusted can become trustworthy" (Deering & Murphy, 2003, p. 112). Partnership success and trust are tightly linked in the literature with abundant references.

Trusting smart. Extending trust empowers others, but this is not to suggest trusting blindly (Covey, 2006, p. 228). Covey (2006) and Covey and Link (2012) supported the concept of practicing smart trust that blends the desire to trust with critical analysis. In other words, it blends a function of the heart with a function of the mind. Smart trust encourages analysis as a means to form judgment about trustworthiness; it is trust with caution until confirmed.

There are three variables of analysis when practicing smart trust: (a) opportunity (the situation—what you are trusting someone with), (b) risk (the level of risk involved), and (c) credibility (the character and competence of the people involved) (Covey, 2006).

The characteristics of high trust versus low trust organizations have been organized in Table 2 for ease of comparison. The implications of trust to innovation, collaboration, and partnering are compelling, as is clearly evident in Table 2. Therefore, it can be assumed that trusting partnerships possess a high propensity for success (Covey, 2006).

Table 2

Comparison of Organizational Trust

High Trust	Low Trust
Increased Value (to customer)	Redundancy
Accelerated Growth	Bureaucracy
Enhanced Innovation	Politics
Improved Collaboration	Disengagement
Stronger Partnering	Turnover
Better Execution	Churn (turnover of customers)
Heightened Loyalty	Fraud

Group dynamics. Theories related to dysfunctional teams lend value to identifying the caveats to a successful partnership. With trust as the cornerstone, Lencioni (2002) emphasized the immense power of teamwork: "Not finance. Not strategy. Not technology. It is teamwork that remains the ultimate competitive advantage, both because

it is so powerful and so rare" (p. vii). Lencioni cited the commanding capacity behind a collective group of individuals expending all energy and all resources toward a common vision, yet he admitted, "Because teams are made up of imperfect human beings, they are inherently dysfunctional" (p. vii).

Arranging the five dysfunctions of a team in a hierarchical model, Lencioni (2002) placed trust as the foundation, and in its absence, all else is impossible. A domino effect prevails in the Lencioni theory. A lack of trust stifles communication, essentially paralyzing the team.

Right people. Addressing both the characteristics of trust, character and competence, literature supports that effective teamwork starts with the right people. An effective partnership, just like an effective team, requires a compatible and complementary group of people working toward a common goal. The importance of establishing an effective team is heavily addressed in literature by contemporary theorists of change leadership:

- Kotter and Cohen (2002): "the more successful change agents pull together a guiding team of individuals with the appropriate skills, leadership capacity, organizational credibility and connections" (p. 4).
- Collins (2001): "First get the right people on the bus, the wrong people off the bus, and the right people in the right seats (p. 13).
- Maxwell (2005): "Place people in their strength zones" (p. 237).
- Gage (2004): "The choice of a partner is the single most important decision most people will ever make about their businesses" (p. 21).

- Buettner, Morrison, and Wasicek (2002): "Choosing *a* partner or choosing *to* partner should always involve evaluation of the resulting partnership's effect on all partners' reputations and credibility" (p. 6).

Communication. Literature supports that effective communication is a requisite of a productive team or partnership. Without communication quality and participation, the success of partnership is placed in doubt (Mohr & Spekman, 1994). "Successful partnerships are obsessive communicators" (Deering & Murphy, 2003, p. 121). "Members must be able to communicate constantly (or at least frequently), honestly and with respect throughout the collaboration (Amey & Brown, 2004). A critical characteristic of any partnership is the existence of an intentional communication system that fosters a tone for planning and problem solving in a trusting and non-threatening spirit (Bracken, 2007). Conversations that skim the top of issues only serve to undermine trust (Deering & Murphy, 2003).

The literature revealed four themes relevant to collaborative communication: the need for a common language, the advantages and consequences of a new information technology world, the importance of intentional and dynamic meetings, and the impact of social capital.

Common language. Maximizing the potential of the collective group, it is imperative that partnerships establish a common working language, a vocabulary that is clearly understood by all (Deering & Murphy, 2003; Eddy, 2010). A common language that fosters shared meaning is critical to building trust among members (Bracken, 2007).

In partnerships of similar organizations, Bracken (2007) suggested that a partner will tend to seek out his or her positional equivalent in the partnering institution for the

purpose of communication. Bracken explained this phenomenon to be a gesture of respect, which is based on the assumption that effective communication is more likely given a shared level of knowledge and experience. For example, faculty members between partnering institutions are more likely to exchange questions and comments rather than address a department chair or dean, even if the chair or dean is better equipped with the knowledge and authority to provide answers or make use of the comments. This natural propensity for exchange between equivalent colleagues is often the catalyst of "grassroot" partnership efforts.

Information technology. Simply stated, technology has had a profound impact on communication—how we communicate, how often we communicate, and what we communicate. "Before our very eyes, we are being transformed into a dynamic and robust network of electronically interconnected people in a worldwide, 24/7 bazaar of creating and sharing, collaborating, publishing, critiquing, helping, learning, competing, and having fun" (Peppers & Rogers, 2012, p. 4).

According to Peppers and Rogers (2012), the technological revolution has provided a plethora of portals and platforms for frequent and convenient interaction via a variety of digital devices, serving to expand communication capacity for an effective and efficient communication system among partners. That said, a tendency toward transparency has escalated as information is so readily available and easily revealed through electronic means. The phrase "extreme trust" has emerged to mean proactive trustworthiness. Companies such as Apple and Zappos.com are implementing extreme trust practices by becoming highly intentional in providing accurate and honest communication intended to raise the level of trust and confidence of the customer.

Recognizing that withholding information can compromise trust just as much as falsifying information, extreme trust supports disclosing information even though it may adversely affect the outcome.

Meetings. Meetings serve as an important platform for communication and, with contemporary technology, can be effectively conducted in person or virtually (Peppers & Rogers, 2012). Regardless, Deering and Murphy (2003) stressed the importance of well-planned meetings intended to guide dialogue, and they offered strategies for meeting facilitators:

1. *Make it matter*. The agenda should never be trivial. Dialogue can be very uncomfortable and people will be unwilling to stick with it if the subject matter seems to be unimportant or irrelevant to them.
2. *Manage context, not content*. Provide an empty canvas. Enable people to "suspend disbelief" and to hear each other out. Let go of massaging the outcomes.
3. *Keep things public.* Everyone stays in the room in order to hear as much as possible of what others have to say. Records should be kept and should not be edited; asides should be audible to all.
4. *Let the differences be seen and be heard.* Keep the complexity. Let people tell their own stories. Don't facilitate the differences away.
5. *Manage the language.* Encourage people to state the purpose of what they say, outlaw jargon, and ensure everyone understands the implications of what is being said. (pp. 87-88)

Lencioni (2002) encouraged leading lively, interesting meetings that exploit and extract the ideas of all team members. It is important to solve real problems quickly, minimize politics, and put critical topics on the table for discussion.

***Social capital*.** People who trust and are trustworthy tend to have a broad professional network of favorable relationships. As a result, these people are apt to possess a high degree of social capital that can bring value to the partnership through "who they know." Social capital is the power of interpersonal networks and typically results from the mutual exchange of trust; it is measured in terms of density, time-sensitivity, and location. The term *density* describes the strength of a relationship, while *time-sensitivity* refers to the duration of the bond. *Location*, another term associated with social capital, refers to the position of individuals within their social network. The clout of extended networks can significantly contribute to a partnership in terms of information, reputation, and authority, or with the more tangible resources of funding, technology, and facilities. Partners that possess a significant degree of social capital often assume an important leadership role in the partnership because of their professional sway (Eddy, 2010; Ozaki et al., 2007).

Leadership

Of the three prominent influencing factors of successful partnerships—motivation, trust, and leadership—the next few sections are devoted to leadership, addressing the roles, responsibilities, and competencies necessary to lead an effective partnership.

The champion. The literature underlines the importance of leadership roles for partnership success. The role of the president or CEO, as well as the role of the

champion, are prevalent in the material. The champion is typically one person who officially or unofficially assumes the leadership role of a partnership. While the president or CEO could assume the role of the champion, it is more likely that the champion will emerge from the ranks rather than from the top. According to Amey (2010), the role of the champion in an educational partnership is to (a) create the vision that establishes the need for the partnership, (b) shepherd processes, (c) ensure buy-in, (d) communicate goals and outcomes, and (e) generate and maintain a high level of commitment to the activity (p. 20).

In addition, Amey (2010) contended that "champions must have passion for the partnership because these relationships are not always easy to develop or considered part of the person's assigned work" (p. 20). Ozaki et al. (2007) reported that "the champion not only leads but frames the collaboration for others. Therefore, the champion is a key facilitator of understanding in order to garner support" (p. 112).

The champion does not necessarily have a formal leadership position within the organization, but functions as the leader and is viewed as the leader by the partner group. This role can fluctuate at different phases of the partnership but is very important, especially during the development phase (Ozaki et al., 2007). Literature warns that for partnerships to sustain, they need not become too closely dependent upon any one person: "to be sustained, the partnership must become institutionalized by more than the champion if, in fact, sustainability is a goal" (Amey, 2010, p. 21).

A president or CEO is required to have a very wide lens that embraces the entire scope of organizational efforts; therefore, it is highly unlikely that a president or CEO would emerge as the champion unless, of course, the partnership was inclusive of all

organizational efforts. But in the case of an ad hoc partnership with a strong guiding champion, presidential buy-in and support is still imperative to success. The president assures alignment of necessary resources and provides reinforcement to the champion's efforts. Responsibilities required of both presidents and champions are analogous (Amey, 2010, p. 17), however practiced at different levels; the president at the institutional level, and the champion at the partner level.

The literature revealed several characteristics of an effective partnership leader or champion. He or she must be a visionary, have the ability to set aside personal agendas, be reasonably comfortable with ambiguity, be an excellent communicator, and have the capacity to build and maintain a dynamic team.

Vision. Leadership can be learned and is a combination of effective management and vision (American Association of Community Colleges [AACC], 2005). Buettner et al. (2002) claimed that for a successful partnership to be realized, leaders must be visionaries with a lens for opportunity and an ability to inspire enthusiastic buy-in from others. Partner leadership includes clearly defining and communicating purpose, determining how success will be defined and measured, and helping partners to re-define roles and relationships.

Buettner et al. (2002) suggested that developing systems and operations that allow a partnership to function can result in a high level of complexity. With the vision in place, "systems thinking and systems building are among the most important skill sets, promising to elevate partnerships to higher levels of performance and customer satisfaction" (p. 11).

Eddy (2010) contended that the leader must be a trusting and trustworthy visionary that can inspire others (pp. 27-28), while Kouzes and Posner (2012) offered, "If you don't believe the messenger, you won't believe the message" (p. 38)**.** AACC (2005) stated that leaders "build and leverage networks and partnerships to advance the mission, vision, and goals" (collaboration section, point 4). The literature clearly supports being a visionary as a requisite to leadership.

Ego. Leaders must be able to accept a diminished level of institutional autonomy in lieu of collective decision-making, and they must demonstrate an ability to surrender a degree of personal power and ambition to pursue the greater goals and aspirations of the partnership (Buettner et al., 2002). Collins (2001) described this as Level 5 Leadership: "Level 5 leaders channel their ego needs away from themselves and into the larger goal of building a great company" (p. 21). Eddy (2010) described partner advocacy as a key characteristic of leading partnerships—maintaining the greater good of the group and keeping the best interest of all partners a priority.

Ambiguity. McCarthy (2003) alleged that ambiguity is inherent in leadership. Leaders are routinely put in a position to address issues out of order or to make decision with little or no information. Amey (2010) asserted that partnerships are non-rational. Partnerships do not develop in a linear fashion and often experience many starts and stops as members gradually develop shared understandings, a common language, and universal processes. That being said, leaders must be comfortable with the reality of ambiguity and the dissonance that often accompanies it. They will be required to help the staff of member institutions connect the work of the partnership to their individual roles and responsibilities so that they can find meaning in what they are doing.

Deering and Murphy (2003) suggested that one size doesn't fit all and that while one approach may work well in the construct of one collaborative effort, it may not be successful for another. Ozaki et al. (2007) stated that "ongoing and institutionalized partnerships require time and much renegotiation" (p. 112).

Ambiguity is present even in well established partnerships as objectives change and key people come and go. "Partnerships change and morph over time as issues change, the role of the champion shifts, and new partners become involved. Sustainable partnerships are based on being flexible to new inputs and adjusting accordingly" (Amey et al., 2007, p. 12).

Communication. Communication must be a priority of leaders. Previously in this chapter, communication was addressed from the perspective of an effective team. In this section, it is addressed from a leadership perspective. However, whether discussing a successful team, or a successful leader, communication is at the very core of trustworthiness and therefore must be an intentional resolution of every leader. Many questions and concerns will arise requiring leaders to establish a comprehensive communication process that allows institutional staff, as well as partnership members, the ability to secure clear and consistent information. Effective communication helps to establish context and refine goals so that members can focus on the future and solve problems as they present (Gray, 1989, as cited in Amey, 2010).

Strategic proactive communication skills are essential for leaders in order to establish buy-in and secure trust. For example, it is important to individual member institutions that the leader articulate the added value of the partnership to the institution, dispelling any myths that partnership activities are pulling on existing resources or

overshadowing other priorities. To avoid defensive posturing, leaders must answer the question, "What's in it for my institution?" (Amey, 2010, p. 17).

Group facilitation. According to Casey (2008), "Features of successful interorganizational partnerships include a commitment to developing effective leadership, generating trust, developing an acceptable degree of formalization, effective communication, establishing equity and managing power and role relations" (pp. 80-81). These characteristics are brought to fruition through the interrelational skill set of an effective leader with the ability to build and maintain a cohesive team.

A successful team is not void of conflict (Deering & Murphy, 2003). Conflict within a partnership should be managed, not eliminated. Buettner et al. (2002) stated, "Leaders must be change agents that can foster a culture of collaboration by executing strategies to transform a long established culture of policies and practices that encourage specialization and fragmentation" (p. 10). Constructive conflict among a functional team can lend to effective problem solving, inspire innovation, and strengthen trust (Lencioni, 2002).

> It is the response to difference, rather than the difference itself, that is the underlying cause of conflict. Notice that difference can be a powerful source of creativity and transformation . . . [good leaders] should find ways to harness its potential. (Deering & Murphy, 2003, p. 133)

Correlation: Partnership characteristics/AACC competency/leadership theory. Amey (2010) suggested that the competencies necessary to lead a partnership are similar to those needed to lead a community college. In 2005, the AACC Board of Directors voted to adopt the Competencies for Community College Leaders listed as: Organizational Strategy, Resource Management, Communication, Collaboration, Community College Advocacy, and Professionalism. While still viable (D. Phelan,

personal communication, March 10, 2012), the AACC competency framework was "intended as a living document evolving over time to meet changing human and institutional needs" (AACC, 2005, para. 2), similar to the ambiguity of a partnership as earlier described.

Amey (2010), Buettner et al. (2002), Casey (2008), and Eddy (2010), among others, have contributed to identifying necessary leadership characteristics for successful collaboration. The literature reveals significant overlap in their findings and allows for the AACC Competencies to easily overlay their work.

In an effort to organize the literature and better understand implications for practice, Table 3 was drafted to correlate partnership characterizations (Amey, 2010) with established leadership competencies (AACC, 2005) and change leadership theory (Kotter & Cohen, 2002; Kouzes & Posner, 2012).

Table 3

Partnership Challenges: Change Leadership Theories

Amey (2010) Characteristics of Partnership	AACC (2005) Competencies for Community College Leaders	Kotter & Cohen (2002) Eight Steps of Leading Change	Kouzes & Posner (2012) Five Practices of Exemplary Leadership
Partnerships are difficult and complex, rely on the interplay of numerous members with individual motivations and goals and cannot just be mandated by authority.	Collaboration Communication	Increase urgency Empower action Build the guiding team	Model the way Challenge the process Enable others to act
Partnerships evolve through stages with different needs over time.	Resource Management	Don't let up Make change stick	Encourage the heart

Table 3—Continued

Amey (2010) Characteristics of Partnership	AACC (2005) Competencies for Community College Leaders	Kotter & Cohen (2002) Eight Steps of Leading Change	Kouzes & Posner (2012) Five Practices of Exemplary Leadership
Leading partnerships requires effective analytic and systems thinking abilities with recognition of organizational strengths and challenges and how partnering will provide benefit.	Organizational Strategy Collaboration	Get the vision right	Inspire a shared vision Challenge the process
Partnerships are labor-intensive especially during the relationship-building phase. Time is needed to develop trust, determine roles and responsibilities and build effective working relationships.	Resource Management Collaboration Communication	Build the guiding team Create short-term wins	Model the way Enable others to act Encourage the heart
Leader-centered partnerships are often less likely to be sustained over time than those that are more inclusive. Leaders must know how to broaden commitment and involvement of others and know when to step aside so that other champions can continue the implementation of the partnership.	Collaboration Communication Professionalism	Build the guiding team Empower action Make change stick	Enable others to act Encourage the heart

Summary of Section I: Educational Partnerships

Amey (2010) spoke to change leadership related to partnership strategy:

In sum, partnership may be a very effective strategy for a community college to broaden outreach and build capacity to achieve stated organizational goals, especially when resources are tight and learner needs are growing. From a change leadership perspective, several aspects of these relationships need to be

> considered, especially if the eventual goal is for the partnership to become part of the ongoing work of the college. (p. 22)

Significant literature exists that supports the value of partnerships in the educational sector with various models being examined. However, given the relatively newness of these arrangements and the propensity for failure, much is left to learn in establishing "best practices" (Casey, 2008; Eddy, 2010; Hoffman-Johnson, 2007; Mohr & Spekman, 1994). Deering and Murphy (2003) attest that "while there is no shortage of strategic reasons for taking partnering seriously, there is certainly a dearth of credible explanations as to why so many fail" (p. 15). Given the value-added potential of partnering, gathering knowledge about partnership success is worthy of intentional and ongoing study.

Section II: Medical Imaging Profession

This section speaks to central dimensions of the medical imaging profession: (a) professional organizations, (b) certification pathways, (c) technologist training, and (d) job market growth. These dimensions serve as headings to organize this section of the chapter.

Exploring literature related to the medical imaging profession was necessary to understand how the collaborative efforts of the MiRIS Consortium address the contemporary needs of the profession. It speaks to the question of the Consortium's value. Why is it necessary? Is it making a difference?

The researcher found limited resources describing the medical imaging profession and even fewer that addressed technologist training. While x-ray properties and their ability to image the bony skeleton were discovered in 1895 by German physicist Conrad Wilhelm Roentgen (Harris, 1995), the science that transformed medical practice did not

rise to the same professional status as nursing, which could explain why the medical imaging profession has netted little research in comparison to nursing. Much of the information presented in this section was gathered from *Shadowmakers* (Harris, 1995), a book published in 1995 to commemorate the 100th anniversary of Roentgen's discovery of x-rays, as well as from journals, professional papers, and reports published by the following professional organizations: the American Society of Radiologic Technologists (ASRT), the American Registry of Radiologic Technologists (ARRT), and the Joint Review Committee on Education in Radiologic Technology (JRCERT).

A Brief History

Clearly present in literature was evidence describing the emergence of distinct imaging specialties, each with separate competency and knowledge requirements. Radiologic imaging science has experienced a proliferation of technological advancements, changing the landscape of the profession with regard to equipment complexity and technologist competency. Torres, Guillen-Dutton, and Linn-Watson (2010) contended that "radiologic technology has evolved from an undereducated workforce of x-ray technicians in the early 1900s to the continued advances as a profession in the 21st century" (p. 2). Harris (1995) supported that description by stating, "Radiologic Technology—the profession that began as a cohesive group of health care workers linked by their use of the x-ray—started to splinter into specialties" (p. 144).

A profession that was once limited to two-dimensional x-ray images displayed on chemically processed film has expanded to include a plethora of advanced diagnostics and therapeutic and interventional technologies that have significantly changed medical practice. Over the years, "x-ray technicians" became known as "radiologic technologists"

and began specializing in radiography, mammography, MRI, computed tomography (CT), cardiac and vascular interventional imaging, nuclear medicine, radiation therapy, or sonography. Others pursued radiology department management positions or became directors and teachers in educational programs. Gradually it became impossible for technologists to maintain mastery of all disciplines related to the profession requiring discipline-specific training and practice (Harris, 1995).

Professional Organizations

Widely recognized organizations that have long supported and advanced the professional status of radiologic technology include the American Registry of Radiologic Technologists (ARRT), the American Society of Radiologic Technologists (ASRT), and the Joint Review Committee on Education in Radiologic Technology (JRCERT). Although they are separate organizations, their efforts align and integrate to provide comprehensive support for the profession and for member technologists. These organizations drive educational programming by guiding curriculum and setting quality standards.

American Registry of Radiologic Technologists (ARRT). The ARRT administers certification exams in primary and post-primary disciplines, awarding nationally recognized credentials. Technologists who complete an ARRT certification exam become "registered technologists" in the specific discipline. The ARRT determines continuing education requirements and maintains a registry of ARRT registered technologists (ARRT, 2012c). The ARRT certification exam specifications are made available to educational programs so that curriculum can be aligned.

American Society of Radiologic Technologists (ASRT). The ASRT is concerned with advancing the profession through education and research. The ASRT establishes curriculum guidelines for educational programs and offers continuing education opportunities for registered technologists. It provides scholarships and publishes scholarly journals and white papers. The ASRT also maintains professional lobbyists to serve as the "voice" to legislative interests of the profession (Harris, 1995). In addition, the ASRT offers a plethora of ancillary services for its members. Individual states maintain ASRT affiliate organizations. ASRT and state affiliate membership are separate and voluntary. Educational programs are provided the ASRT Curriculum Guide to assure that programs remain current and relevant (ASRT, 2012).

Joint Review Committee of Education in Radiologic Technology (JRCERT). The JRCERT serves as the accrediting body concerned with the quality and safety of educational programs. It is the only agency recognized by the United States Department of Education for the accreditation of radiography, radiation therapy, magnetic resonance, and medical dosimetry programs (JRCERT, 2012c).

As the profession emerged into specialized disciplines, so did supporting organizations intended to address the needs of discipline-specific technologists. Examples include the Society for Magnetic Resonance Imaging (SMRM) and the American Registry of Magnetic Resonance Imaging Technologists (ARMRIT). While specialty organizations remain concentrated to the discipline, the ARRT and the ASRT continue to represent the profession as a whole (Harris, 1995).

Certification Pathways

As previously mentioned, the ARRT offers two pathways to certification: primary and post-primary.

Primary pathway. Currently, certifications exist in five primary disciplines: radiography, sonography, nuclear medicine, radiation therapy, and magnetic resonance imaging (MRI). Upon earning a degree from an accredited college or university recognized by the ARRT in one of the five primary disciplines, graduates qualify to complete the corresponding certification exam, earning discipline-specific and widely recognized national credentials (ARRT, 2012a).

Post-primary pathway. ARRT credentialed technologists in one of the five primary disciplines may pursue one of 11 post-primary certifications, earning a secondary credential. The post-primary disciplines include MRI, CT, mammography, cardiac interventional imaging, vascular interventional imaging, bone densitometry, quality management, general sonography, vascular sonography, breast sonography, or radiologist assistant. In addition to the required primary certification, post-primary certification may require documented clinical competence and, in some cases, formal discipline-specific didactic education (ARRT, 2012a).

The first of the 11 ARRT post-primary certification exams, mammography, was administered in 1992. In 1995, the first MRI advanced certification exam was administered (Paschel, Raymond, & Walker, 1998). In January 2006, the ARRT removed the primary certification prerequisite from MRI, establishing MRI as a primary discipline in its own right. According to the ARRT, this meant MRI degree programs could be developed with a clear path to MRI certification. That said, there continues to be the two

pathways to ARRT MRI certification: primary and post-primary. Because of the limited availability of MRI degree programs, most technologists currently holding MRI certification have earned it through the ARRT post-primary pathway. In other words, they hold primary certification in radiography, sonography, nuclear medicine, or radiation therapy, and have pursued MRI as a secondary or post-primary certification. As more MRI degree programs become available, it makes sense that more technologists will hold MRI primary certification. Regardless, both primary and post-primary examinees complete the same certification exam (ARRT, 2012a).

Technologist Training

An Internet search supports that contemporary MRI education varies greatly in depth, breadth, and length. Programs are offered through colleges, universities, technical schools, and educational vendors, but very few are accredited by the JRCERT. Program accreditation is a voluntary commitment of the offering institution intended to provide assurance to patients, employers, and students that program graduates have the requisite knowledge and skill set for safe and competent practice. According to the 2010 JRCERT Annual Report, there were only four accredited MRI programs in the country as compared to 637 radiography programs. By 2012, there was a total of five JRCERT accredited MRI programs. Three of the five programs are university baccalaureate degree programs and the remaining two are hospital-based certificate programs. The programs are located in the states of Arkansas, Nebraska, Pennsylvania, Rhode Island, and West Virginia. Presently, there are no JRCERT accredited programs in Michigan and no JRCERT accredited community college associate degree or certificate programs in the country (JRCERT, 2012a).

The limited availability and disparity of formal education programs in MRI results in inconsistent preparation of today's practicing MRI technologists. Many of these technologists are ARRT registered practicing radiographers who were cross-trained in MRI through the on-the-job training efforts of their employers. Some technologists have completed MRI training seminars, workshops, vendor courses, or self-directed home studies to augment on-the-job training. Some have completed college-sponsored certificate programs and few have completed degree programs. Of the technologists currently performing MRI, some have achieved ARRT certification or ARMRIT certification, but some are working without certification.

The science of MRI is unique from radiography and requires a unique knowledge base and skill set. Unlike the use of radiation to create x-ray images, MRI uses radio waves, strong magnetic fields, and computer technology to create images (Gurley & Callaway, 2006, p. 346). MR image quality and diagnostic value is directly related to technologist capacity (Joyce, 2008); therefore, a sound knowledge of sectional anatomy, human pathophysiology, MR physics, and instrumentation, coupled with a strong ability to communicate and critically think, are key competencies for MRI technologists (ASRT, 2012). It is a transitional time for the MRI profession as consistency in education and certification advance to current-day standards and expectations.

As previously explained, colleges are financially challenged in offering MRI programs due to a low enrollment capacity, driven by the limited number of available clinical education experiences in a given college district. This fact could explain why the JRCERT (2012a) reports the absence of accredited MRI programs in Michigan, even though the job market looks promising. Given the lack of accredited training and the

potential employment opportunity, it would benefit colleges to explore collaborative efforts to offer high-cost programming in MRI and other highly specialized medical imaging technologies.

Job Market Growth

As the profession has evolved, the job opportunity for qualified technologists has increased, especially those with dual certification in such specialties as radiography and MRI. Kellogg Community College (2011b) addressed the future need for technologists in a Substantive Change Application submitted to the Higher Learning Commission (HLC) as follows:

> According to the U.S. Department of Labor, Bureau of Labor Statistics, job opportunities for radiologic technologists are expected to expand 18% by the year 2018 favoring those who hold certifications in MRI, computed tomography (CT), mammography, cardiac and vascular interventional imaging. In addition, new 2012 Medicare Part B reimbursement criteria require that hospitals and other medical imaging providers billing for MRI, CT, nuclear medicine studies and positron emission technology (PET) scans be accredited by the American College of Radiology which recommends technologists secure certification in the modality they perform. There is strong speculation within the profession that the current ACR certification "recommendation" will very soon transition to a "requirement."

This labor statistic has since changed by 10%. A recent review of the Bureau of Labor Statistics, U.S. Department of Labor (2012) revealed that job opportunities will expand 28% by the year 2018, considered a faster than average increase.

Summary of Section II: The Medical Imaging Profession

Technological advances in MRI have been rapid since the first human scan in 1977 (ASRT, 2012; Harris, 1995). Applications of MRI surged through the 1980s and 1990s, from neuroradiology and musculoskeletal imaging to sophisticated MR angiography, functional MR, and cardiac MR (Harris, 1995). While the ARRT (2012)a

has identified MRI as a distinct profession worthy of dedicated educational programs to effectively prepare technologists for practice, significant fiscal challenges exist. To reiterate from Chapter 1, educational programs in the health care domain are costly for colleges to offer (Fain, 2012; Moltz, 2010), especially those that train students in highly specialized niche careers such as MRI. The high costs are derived from: (a) an inherent characteristic of low enrollment capacity limited by clinical education availability, (b) a low faculty-to-student ratio imposed by accreditation standards, and (c) lab equipment acquisition and maintenance.

The MiRIS Consortium was established as a system of sharing resources intended to overcome the financial challenges. Therefore, an intentional and focused study of this enterprise is worthy of an effort to understand how the MiRIS Consortium model can be successful with possible replication to assure a highly competent technologist workforce and to provide students a dynamic high-tech career opportunity.

CHAPTER 3

METHODOLOGY

This chapter describes the qualitative research method used for this study and provides a rationale for why this methodology was chosen. Owens and Valesky (2007) defined qualitative research as "seeking to understand human behavior and human experience from the point of view of those being studied rather than the point of view of the researcher" (p. 441). Because the researcher's goal in this study was to learn from the human experiences of key individual members of the Michigan Radiologic and Imaging Science (MiRIS) Consortium, a qualitative research approach was deemed appropriate.

The principal strategy of the research design included in-depth interviews of Consortium members to acquire an understanding of their experiences related to the social and organizational construct of this collaborative effort. The intent was to discover, from their point of view, how and why the Consortium was formed, what will be necessary for it to remain viable, and what value it has brought to the stakeholders. The researcher believed that a deeper understanding of member experiences would serve to isolate caveats and contribute to best practices of intercollegiate partnerships, informing the practice of others. Of equal importance to the in-depth interviews was a comprehensive document analysis intended to enhance the interview data and lend substance to the study's findings.

Research Questions

The following three research questions served to guide this study:

1. What added value does the MiRIS Consortium provide stakeholders?
2. How are administrator and faculty roles impacted by the formation and function of an intercollegiate consortium for the delivery of certificate or degree programs in magnetic resonance imaging?
3. How is organizational culture impacted by the formation and function of an intercollegiate consortium for the delivery of a certificate or degree program in magnetic resonance imaging?

It is important to provide definition and clarity to assure shared meaning of these research questions.

1. What enhanced value does the MiRIS Consortium provide *stakeholders*?

Stakeholder refers to "one that has a stake in an enterprise or who is involved in or affected by a course of action" (Merriam-Webster Dictionary, 2012). This question was intended to help the researcher understand the Consortium's scope of significance and to identify the perceived benefit of the Consortium's work to various stakeholder groups.

2. How are administrator and faculty roles impacted by the formation and function of an *intercollegiate consortium* for the delivery of certificate and degree programs in magnetic resonance imaging?

According to the Merriam-Webster Dictionary (2012), the definition of *intercollegiate* is "existing or carried on between colleges," and the definition of *consortium* is "an agreement, combination, or group (as of companies) formed to

undertake an enterprise beyond the resources of any one member." The MiRIS Consortium is a group of six colleges that have joined efforts to deliver an MRI program. This question was intended to address the Consortium's influence on people—their roles, responsibilities, and relationships.

3. How is *organizational culture* impacted by the formation and function of an intercollegiate consortium for the delivery of a certificate and degree program in magnetic resonance imaging?

According to Owens and Valesky (2007), *organizational culture* is defined as "those enduring traditions, values and basic assumptions shared by people in an organization over time that give meaning to the work of the organization and establish the behavioral norms for people in the organization" (p. 441). This question was intended to address the Consortium's influence on individual organizations—their beliefs, structures, and work.

This chapter describes the research design of this study, specifically the case study method, the data collection strategy, and the analytic process. Both internal and external validity and researcher bias are also addressed. The chapter is organized with these topics serving as headings.

Research Design

The intent of this study was to learn through the experiences of the MiRIS Consortium members for the purpose of improving practice, and, as such, it lends well to a qualitative research design. According to Merriam (2009):

> Having an interest in knowing more about one's practice, and indeed in improving one's practice, leads to asking researchable questions, some of which are best approached through a qualitative research design. In fact, I believe that research focused on discovery, insight, and understanding from the perspective of

> those being studied offers the greatest promise of making a difference in people's lives. (p. 1)

Creswell (2009) identified common strategies of qualitative research to include case study, ethnography, grounded theory, phenomenology, narrative analysis, and critical inquiry (p. 13). A case study strategy was indicated for the MiRIS Consortium research, as Merriam (2009) defined a case study as "an in-depth description and analysis of a bounded system" (p. 41), and Yin (2009) described a case study as an approach that concentrates the research on a contemporary social phenomenon intended to determine how or why it works.

The examination of the MiRIS Consortium is suited to a single case study strategy, described more narrowly as being bounded with an embedded focus because it clearly presents as a distinct system in which the boundaries of time and people exist. According to Merriam (2009), a true test of the "boundedness" of a system is the limitation of data available for collection (p. 41). With regard to the newness of the MiRIS Consortium, data collection was limited to interviews with the nine individuals who were central to the Consortium's development, as well as to relevant documents collected during the time frame of February 2009 to July 2012.

The study is considered to have an embedded focus because it speaks to more than one unit of analysis (Yin, 2009). These include (a) the added value of the Consortium, (b) the influence on individual roles and responsibilities, and (c) the influence on organizational culture.

According to Merriam (2009), because case studies are affixed in actual events, participants tend to describe very graphic and inclusive interpretations of their experiences. Each participant experience is individual and unique from others and, as a

result, of this exclusivity, the existing knowledge base is expanded, inspiring new theories and offering ideas for further research (p. 51).

Data Collection Strategy

In an effort to learn from the experiences of those closely involved with the MiRIS Consortium, in-depth interviews served as a rich source of research data. Equally important was a thorough document analysis that complemented the study, revealing key evidence that was not captured through the interviews.

Interviews

Nine interviews were conducted with the people who had been actively involved with the Consortium from its inception. Their longevity with the partnership positioned them to have a comprehensive perspective and broad range of experiences. The participants were from the six MiRIS Consortium institutions listed in Table 4.

Table 4

MiRIS Consortium Institutions

College	City, State
Grand Rapids Community College	Grand Rapids, Michigan
Kellogg Community College	Battle Creek, Michigan
Lake Michigan College	Benton Harbor, Michigan
Lansing Community College	Lansing, Michigan
Mid Michigan Community College	Harrison, Michigan
Grand Valley State University	Grand Rapids, Michigan

The program director from each of the six MiRIS Consortium institutions was invited to participate in the study, as were three occupational deans. Each dean

represented a different Consortium institution. The six program directors had over 20 years of experience as radiologic technology educators and technologists, while the deans had varying degrees of experience as college educators and administrators. Two of the deans had backgrounds as practitioners in health care disciplines, while the third came from the social science field.

Due to the researcher's engagement with the MiRIS Consortium, she verbally extended informal invitations to participate in the study, followed with a confirmation letter sent to each participant via email. While the letters were very similar, one addressed the program director (Appendix D) and another addressed the deans (Appendix E).

The researcher notes that the confirmation letters reveal a discrepancy between the research questions listed in this dissertation document and the questions that were included in the letter. This can be explained by the fact that after the letters had been sent, the research questions were further refined for clarity. However, the essence of their meaning remained constant.

The nine interview meetings were conducted over the span of 1 month and were scheduled as follows:

1. Program Director I 07/16/2012
2. Program Director II 07/18/2012
3. Dean I 07/20/2012
4. Program Director III 08/01/2012
5. Program Director IV 08/03/2012
6. Program Director V 08/06/2012
7. Dean II 080/8/2012

8. Dean III 08/13/2012

9. Program Director VI 08/16/2012

Interviews occurred on the participant's college campus in a private office or small meeting room. At the onset of the meeting, participants were asked to sign an informed consent (Appendix F) inclusive of the following information: purpose of the research, intended use of responses, potential benefits and risks of participation, confidentiality, anonymity, and the right of withdrawal.

Interviews took the form of a semistructured process using a prepared set of questions. When necessary, the researcher used probing techniques intended to clarify answers or seek deeper meaning. According to Rubin and Rubin (2012), probing questions add value to the interview as they encourage the participant to keep talking about a topic, offering details and examples. "Probes" as referred to by Rubin and Rubin, serve to clarify, confirm, and elaborate, providing evidence and credibility that allow for more meaningful research (p. 6). The researcher prepared one set of interview questions for each participant group: the program directors (Appendix G) and the deans (Appendix H). Although both sets of questions were nearly identical, the program directors were asked a few questions related to the MRI profession, while the deans were asked to comment on issues that required a more comprehensive understanding of higher education leadership.

On occasion, participant responses would drift away from the specifics of the question being asked into a free flow of thoughts and words that led to a rich conversation surrounding relevant issues related to the study. The researcher welcomed these participant-driven diversions as a means of understanding concerns, experiences,

and viewpoints beyond those captured through the prepared questions. These trailing conversations gave way for a deeper and more meaningful interview outcome, lending value to the study.

Although 90 minutes was scheduled for each interview, seven of the nine interviews lasted 60 minutes or slightly less, while two took a few minutes longer. There were 36 questions presented to the program directors and 27 presented to the deans. These included profile questions to gather demographic information. The principal inquiry included questions related to motivation, roles, responsibilities, value, challenges, successes, lessons learned, and potential replication of the MiRIS Consortium model.

Individual interviews were audiotaped using a digital recording device. A transcriptionist was hired to transcribe the recordings verbatim into Microsoft Word documents to be used for analysis. The use of specialized software was not found to be necessary to document the interview responses. Typed transcripts were compared to audio recordings to ensure accuracy before analysis commenced. A written process for managing the interview data and an agreement promising confidentiality was secured with the transcriptionist (Appendix I). The recordings and transcripts are stored on two dedicated electronic data storage devices and secured in the researcher's home.

Documents

A comprehensive review of documents collected from February 2009 to July 2012 was conducted. A more critical and intentional review of the documents occurred during August and September 2012 as they were sorted and coded for this study. These documents uncovered details important to understanding the MiRIS Consortium. The analysis of documents, coupled with the in-depth interviews, served as a triangulation

strategy to substantiate the validity of emerging themes. Patton (2002) explained that data triangulation can strengthen the study by combining methods, such as the use of a variety of data sources. The blending of interview responses with relevant document evidence lends credibility to the research findings of this study.

The documents reviewed were in the form of formal agreements, meeting minutes, letters, emails, budget sheets, notes, and other related records and are the property of Kellogg Community College. Approval to use the document data was secured through KCC's Institutional Review Board and expires July 13, 2013. A listing of the documents can be found in Appendix J.

Anonymity and Confidentiality

As disclosed in Chapter 1, the researcher's position within the MiRIS Consortium hinders the anonymity of the member colleges for the purpose of this study. However, in an effort to encourage confidentiality of individual participants, personal names were not revealed in connection to the interviews or documents but rather coded and referred to by title and Roman numeral, for example, "Program Director III."

While considered minimal, some potential risk to relationships is assumed by interview participants through their authentic responses to delicate subject matter. Effort has been made to avoid association of sensitive responses or documents to individuals or to institutions; however, association may still be made by readers familiar with the MiRIS Consortium and its members.

The Analytic Process

Because the research questions had been determined at the onset of the research process, it was possible for the analysis to occur as the data were collected. This strategy

helped the researcher maintain focus, reduce repetition, and avoid a sense of being overwhelmed. It is for these reasons that Merriam (2009) supported conducting data analysis simultaneously with data collection.

Yin (2009) suggested four principles to a high-quality case study analysis:

1. Attend to all evidence, including rival hypotheses, and be exhaustive in efforts to fully answer research questions.
2. Address rival interpretations of data. If further data cannot support or dispel the rival interpretation, report it loosely as needing further inquiry.
3. Address the most significant aspect of the case study. Keep the analysis focused on the most important issues and do not become distracted by analyzing lesser concerns.
4. Use prior experience and expert knowledge of the topic. Possessing a deep knowledge of the case study can strengthen data analysis. (p. 160)

Keeping Yin's principles in mind, the researcher focused the data analysis on answering the research questions. All interview and document data were considered as evidence, despite contradiction to patterns or themes, until they were proven to be extraneous or un-substantiated and reported as such. As previously stated in Chapter 1, the researcher is a former practicing radiologic technologist, a former educational program director, and current occupational dean, having been closely involved with the MiRIS Consortium from its inception. Her prior experience and expert knowledge of the topic did allow for deeper and more critical analysis of the data, lending to the credibility of the analytic process.

Merriam (2009) spoke strongly to the legitimacy the human experience and interpretation brings to analysis:

> Because human beings are the primary instrument of data collection and analysis in qualitative research, interpretations of reality are accessed directly through their observations and interviews. We are thus "closer" to reality than if a data collection instrument had been interjected between us and the participants. Most agree that when rigor is viewed in this manner, internal validity is a definite strength of qualitative research. (p. 214)

According to Bloomberg and Volpe (2008), much attention is given to coding data for the purpose of analysis. However, coding is really no more than a system of organizing and classifying data by noting elements of interest or significance determined by the researcher. There is no right or wrong way to code and categorize data. "Codes are, in effect, a type of shorthand; the names or identifiers that you [the researcher] attach to chunks or segments of data that you [the researcher] consider relevant to your study" (p. 102). Therefore, the coding system formulated must make sense and work for the researcher. In the case of interview data, which is essentially words and phrases, coding often begins with notations and identifiers in the margins of transcripts and then may evolve into matrixes, graphs, or other organizational schemes, according to the inclinations of the researcher. For this study, the researcher applied identifiers in the margins of transcripts and then created tables to group themes and patterns.

While predetermined categories can serve as a starting point for data classification, Bloomberg and Volpe (2008) warned against too much structure being applied to the analytic framework, suggesting instead a fluid and flexible approach intended to avoid prescribed outcomes and compromised validity. They discouraged forcing data into predetermined categories, accepting that qualitative research has an ebb-and-flow characteristic that often results in new categories being created and others being

eliminated. Merriam (2009) suggested that "at the beginning of analysis, you [the researcher] will most likely generate dozens of tentative categories . . . devising categories is largely an intuitive process" (pp. 182-183).

The need for a flexible analytic framework was certainly realized with this study. Initially, the researcher used the three research questions to form broad, overarching and, yes, predetermined categories. From those three categories, interview questions were generated that would serve to answer each research question. As a result, the researcher theorized that each interview response would be coded and with precision and ease, placed into the corresponding category.

The reality was that the process was not as precise as intended. Given the semistructured interview process that often resulted in a free flow of thoughts and words, the responses were not necessarily orderly and mutually exclusive to one category. So while the research questions served to inspire the interview questions and subsequent predetermined analytic categories, the classification system actually evolved over time, both during and upon completion of the data collection when the researcher could make sense of how best to code and categorize the data. Eventually, interview responses were coded and grouped according to themes and patterns illustrated in Chapter 4.

The classification process for the document analysis followed a similar path. Documents were arranged chronologically and also categorized according to themes and patterns. Any outliers from both the interview responses and documents were placed in a category until there was enough evidence to dispel the inconsistency or report it as needing further inquiry.

The flexibility of the analytic framework allowed all data to be coded and classified for analysis regardless of the "intended fit," resulting in a more inclusive, authentic, and credible study.

The manageable number of interview participants and the researcher's familiarity with the documents allowed for a sound manual process of data organization, negating the need for Computer Assisted Qualitative Data Analysis Software (CAQDAS), a computer software program specifically designed to aid in the organization of qualitative research.

Validity

As cited by Merriam (2009), Maxwell (2005) described validity as:

> a goal rather than a product; it is never something that can be proven or taken for granted. Validity is also relative: It has to be assessed in relationship to the purposes and circumstances of the research, rather than being a context-independent property of methods or conclusions. (p. 214)

Internal Validity

Internal validity can be described as making sense of the research. For example, if it is determined that a causal relationship exists between *a* and *b* but the identification of *c* (the cause) is omitted or lacks plausibility, then internal validity is considered flawed (Yin, 2009). External validity refers to the ability to generalize the findings beyond the bounded case-study research (Merriam, 2009; Yin, 2009).

Strategies common to ensure internal validity of qualitative research are (a) triangulation, (b) member checks, (c) adequate engagement in data collection, and (d) peer review (Merriman, 2009). Triangulation is the use of multiple methods—multiple data sources, multiple investigators, or multiple theories. Member checks refers to the solicitation of participant feedback on findings that have emerged from the interview

responses. Adequate engagement in data collection is the effort of trying to get as close as possible to participant understanding of experiences through an adequate scope of participants and an adequate amount of time spent with them. Peer review engages unbiased colleagues to examine the data and then comment on whether the findings seem plausible (Merriman, 2009).

Two of the four internal validation strategies were used for this study: triangulation and adequate engagement in data collection. Triangulation, as an internal validity strategy, was realized through the use of two data collection sources: qualitative interviews and document analysis. A confirmation or contradiction of findings can be discovered through a triangulation strategy.

An adequate engagement in data collection was the second internal validity strategy imposed for this study, realized through the researcher's participative role in the Consortium from its inception. As one of the founders, the researcher spent 3 years and 5 months regularly engaged with the nine interview participants, the core of people responsible for the establishment of the Consortium. This engagement allowed her to remain close to participant understanding of experiences over a prolonged period of time. Because of her continued communication with participants, the researcher believed member checks and peer review to be unnecessary to further ensure internal validity.

External Validity

"Transferability" or "generalization" is the ability to transfer the findings beyond the scope of the case being studied to other settings. Transferability can be addressed through (a) thick description, and (b) maximum variation. Merriam (2009) explained "thick description as a highly descriptive and detailed presentation of the setting and in

particular, of the findings" (p. 227). Assuring context through rich description, the reader is better informed to compare the study to his or her own set of circumstances, allowing for greater transferability of findings. The deliberate use of thick description was employed to increase the external validation of this study; however, as evident in the literature discussed in Chapter 2, fiscal challenges confronting community colleges is a national theme, so while the setting and participants will vary, the underlying problem remains constant, allowing for greater potential for transferability.

Maximum variation refers to increasing the potential for the transferability through expanding the range and diversity of participants—gender, age, ethnicity, education level, professional position, and so forth—but due to the limited scope of available participants, maximum variation was not a feasible external validity strategy for this study.

Researcher Bias

Qualitative research is particularly susceptible to researcher bias for two reasons: (a) the researcher is the primary instrument of data collection and analysis; and (b) much of the research is grounded in the experiences and interpretations of participants, including the researcher (Merriam, 2009, pp. 22-27). To dispel concerns and increase the credibility of the study, epoche and bracketing were essential.

According to Merriam (2009), epoche is the process of introspection for the purpose of isolating personal bias.

> Prior to interviewing those who have had direct experience with the phenomenon, the researcher usually explores his or her own experiences, in part to examine dimensions of the experience and in part to become aware of personal prejudices, viewpoints and assumptions. (p. 25)

The process of bracketing is the intentional and temporary suspension of existing theories and assumptions in support of a pure and authentic study.

With respect for full disclosure, it is important to remind the reader of the researcher's active role with the MiRIS Consortium and the potential for bias. The researcher is the Dean of Career and Occupational Education for the Consortium's fiscal agent, Kellogg Community College, and a former radiography program director with significant past experience as a practicing radiologic technologist. She has known the nine interview participants in a professional context for approximately 4 to 12 years.

With premeditation and intent, the researcher practiced epoche and bracketing to ensure an unspoiled and respected study. To avert risk of bias, the researcher practiced intentional reflection of her experiences and acknowledged predispositions during the period of time she was formulating the vision of this study under the guidance of her committee chair. In addition, the researcher remained cognizant of her bias throughout the research and routinely practiced purposeful meditation during her travels to each interview, temporarily displacing assumptions and prejudice. At the onset of each interview, the researcher acknowledged her role with the Consortium but reassured each participant of her commitment to authenticity. She clarified her role as a researcher dedicated to conducting a study free of bias and speculation. All nine participants appeared to be very trusting and cooperative with the research process.

CHAPTER 4

PRESENTATION OF THE FINDINGS

The purpose for conducting this case study of the Michigan Radiologic and Imaging Science (MiRIS) Consortium was to explore how and why this group formed, what they need to sustain over time, and what added value the Consortium provides to stakeholder groups. The researcher believed that a better understanding of this particular partnership would serve to inform others interested in offering occupational programs through intercollegiate collaboration. The fact that this effort rose from the program level ranks absent of any senior leadership directive, grant initiative, or policy mandate makes this a unique and innovative initiative worthy of study.

Research Findings

The research findings resulted from a comprehensive analysis of nine in-depth interview responses and an extensive collection of reference documents. From the interview and document data analysis, five major findings emerged:

1. Financial advantage was the most compelling impetus for forming the partnership.
2. Interpersonal relationships were central in the development of the partnership.
3. The role of a champion surfaced during the development of the partnership.
4. Organizational change transpired as a result of the partnership.

5. The value of the partnership was varied and far-reaching.

Research Evidence

The in-depth interview responses were critical to the research in providing personal testimony of the MiRIS Consortium's key individuals as they gave accounts of their unique experiences and perceptions. The researcher's scrutiny of relevant documents not only served to substantiate interview data but, more importantly, revealed strong evidence that failed to surface from the interviews or was only slightly referenced.

In-depth Interviews

Bloomberg and Volpe (2008) contend that interviews "elicit in-depth, context-rich personal accounts, perceptions and perspectives" (p. 195). This chapter presents the oral interview data using detailed reporting of direct quotes and paraphrasing referred to as "thick description" (Denzin 1998/2001, as cited in Bloomberg & Volpe, 2008, p. 111). This level of detail is important as the power of qualitative research is in "making the reader feel as if they are *living* the experiences described" (Bloomberg & Volpe, 2008, p. 107).

The researcher presented each of the nine participants with the predetermined interview questions to ensure a breadth of contribution from all six MiRIS Consortium member institutions. Depth of response was encouraged by using probing techniques that engaged the participant in dialog intended to gather further data and to confirm understanding of the conveyed meaning.

Document Analysis

According to Bloomberg and Volpe (2008), a document review helps to "facilitate the discovery of cultural nuances" (p. 195). As such, an analysis from key documents that

helped shape the story of why and how the MiRIS Consortium was developed is presented in this chapter. A plethora of proposals, estimated budgets, lists, letters, email exchanges, meeting notes, and the Consortium's formal agreement all provided rich information that contributed to formulating the findings. A summary list of referenced documents can be found in Appendix J.

Organization of Chapter 4

The remainder of this chapter is organized in three major sections. The first section offers a chronological timeline of significant activities and events that occurred during the development stage of the MiRIS Consortium. The second section presents the five findings that culminated from the overlap and intersect of interview responses and document data. The third section answers the study's three research questions stated in Chapter 1 by providing a correlation to the five findings revealed in this chapter.

Section I: Timeline

Significant Events and Activities

The data analysis provided a chronological sequence of significant activities and events that occurred during the course of this study, from the group's vision that emerged in February 2009 to the completion of the first student cohort in July 2012. The timeline presented in Table 5 demonstrates the extended time and effort that was necessary to bring the vision to fruition and tells the story that provides reference for which readers can gain a foundation for a more thorough understanding of the findings.

Table 5

MiRIS Consortium Evolutionary Timeline

Date	Key Events
March 2009	First meeting between two colleges to discuss a potential partnership for the delivery of an MRI program. It was decided to expand the discussions to include more colleges.
April 2009	First collective meeting of six colleges to discuss the potential of a consortium for the delivery of medical imaging programs to include MRI as the first program offering.
June 2009	Presented consortium vision to the CEO and Board of Directors of the Joint Review Committee on Education in Radiologic Technology (JRCERT) soliciting support for future program accreditation of the MRI program.
June 2009	Presented consortium vision to the Michigan Community College Virtual Learning Collaborative (MCCVLC) soliciting support for flexibility in established processes and procedures to accommodate the six-college partnership.
August 2009	First of many comprehensive discussions of a workable financial model between administrators and program directors of all six colleges.
June 2009–November 2010	Work on curriculum development was ongoing.
April 2009–December 2010	Formal intercollegiate agreement undergoing negotiation and revisions.
November 2010–February 2011	Curriculum undergoing approval of the Curriculum Committees of the six MiRIS colleges.
December 2010	Intercollegiate agreement language accepted by all six colleges; submitted for the presidents' signatures.
January 2011	Presented consortium vision to the Higher Learning Commission requesting direction on institutional accreditation approval to enter into a consortial arrangement.
February 2011	Program directors present the MiRIS Consortium concept at the annual conference of the Association of Educators in Imaging and Radiologic Sciences.

Table 5—Continued

Date	Key Events
March 2011	First MRI program cohort begin classes with a teach out plan as recommended by the Higher Learning Commission should consortial approval be denied.
April 2011	Informational meeting for the registrars, advisors, and representatives from admissions, financial aid, and business offices of all MiRIS colleges is held to present the consortium vision, answer questions, and solicit support for flexibility in established processes and procedures to accommodate the six-college partnership.
May 2011	Substantive Change Application submitted to the Higher Learning Commission for all six MiRIS colleges seeking approval to enter into a consortial arrangement.
July 2011	Approval to enter into a consortial arrangement was received by each of the six colleges in the form of a letter from the Higher Learning Commission.
August 2011	First MRI skill workshop for MiRIS MRI students was held.
September 2011	MiRIS Consortium launched as the financial model was executed and the position of the MiRIS educational coordinator was posted.
December 2011	The MiRIS educational coordinator was hired.
April 2011	First MRI program orientation was held for the second cohort of students.
June 2012	Second MRI program cohort began classes.
July 2012	Cohort 1 students completed the MRI program.

Section II: The Findings

Finding 1: The Financial Advantage

Interview participants expressed motivation to expand program offerings to include MRI and other medical imaging specializations but realized the prohibitive financial challenges in doing so. The cause was an inherent low enrollment capacity due

to the limited availability of clinical education opportunity and a subsequent narrow job market for these highly specialized medical imaging careers within the boundaries of any one community college's local district. As a result, the research revealed that the economic advantages of a partnership was the driving force behind forming the MiRIS Consortium allowing individual colleges a fiscally viable way of expanding programing to meet the technological trends in medical imaging careers. Motivational significance was realized through the analysis of documents exposing the enduring tenacity of members resolved to establish an administrative structure and set of operating processes that would allow the financial feature of the partnership to work.

In-depth interviews. The interviews conducted revealed that 9 of 9 interviewees or 100% of the participants indicated they saw the financial benefit as the determinant for forming the MiRIS Consortium, expressing that intercollegiate resource sharing allowed individual colleges to expand program offerings that would be difficult or impossible for any one of the institutions to achieve on their own.

When speaking to cost, interview participants addressed an employer need for comprehensively trained MRI technologists but referenced several challenges to offering individual programs, including the start-up expense of course development and the ongoing high cost of instruction incurred from low enrollment capacity, further exaggerated for one particular college by its rural location. Participants also mentioned a concern of overburdening local job markets, leaving MRI graduates unable to find work if each of the MiRIS colleges were to individually offer fiscally reasonable programs annually enrolling 20 or more students from every college community.

Program Director I:

> The number one thing when you start a program is cost and after looking at some of the expenses associated with development, we decided it was cheaper for us to buy-in to a partnership than to start an MRI program on our own. We are still working on the cost structure but in the long run, I believe it will be very beneficial financially.

Program Director III:

> This was a way to meet employer needs of southwest Michigan hospitals without exorbitant cost to any one college. Individual colleges couldn't afford to do these advanced [MRI] programs alone but by sharing, we can serve a lot of students and a lot of employers.

Program Director IV:

> We were looking for ways to offer post-primary credentials to people in our profession, but in a financially sustainable fashion that wouldn't over supply the market.

Program Director V:

> We're in a rural area and to run a program big enough [pause], it wouldn't be economically viable and, we'd flood the job market.

Program Director VI:

> [Purpose] . . . obviously expense. It is very expensive to run Allied Health Programs and you have to be fiscally smart with what you pursue and bring to the table. When considering MRI, the limited number of scanners mean limited students . . . one scanner, one tech., one student. Even though more facilities are securing magnets [scanners], it's still a small component of a diagnostic imaging department. Partnering with these other colleges means we are looking at an overall region of Michigan . . . not saturating a particular area.

Dean II:

> For us to have a sustainable program, we'd have to enroll 20 to 24 students and then you have to be astute to the workforce needs of the community asking the question of how many new MRI technicians does workforce need each year? Clearly, the schools coming together was innovative and said all the right things with meeting employer needs while not having one school inundated with cost and graduate not getting jobs.

Dean III:

> This is a potential solution for community colleges in the state of Michigan to offer programming in health care in a collaborative way;

> which in this day and age means sharing costs, sharing resources, and sharing staff.

Document analysis. In an effort to develop a mutually acceptable and equitable financial model, program directors, deans, and vice presidents demonstrated boundless resolve to bring their vision to fruition. Revealed through various documents, they met, exchanged emails, and had phone conversations many times between March 2009 and December 2010, evolving the financial model and its execution. Their determination culminated into the formal partnership agreement and a set of operational processes that allowed the Consortium to function and the MRI program to become a reality.

The financial model. The partners' focus on the financial model was evident from the first meeting of all six colleges in April of 2009, when an introduction of a collaborative approach to offering an MRI program was presented. A "Talking Points" document (D1) was drafted to facilitate discussion of offering courses through the Michigan Community College Virtual Learning Collaborative (MCCVLC) at the agreed upon tuition rate of $140 per credit hour, an enrollment of 25 students, and the hire of a full-time educational coordinator with salary and benefits shared equally across Consortium colleges. This document was the start of the partnership's operating guidelines.

In August 13, 2009, the group convened at a third meeting during which a more detailed financial model was presented (D2). This particular document offered a comparison of the financial implications of three different program structures that varied in enrollment capacity, total credit hours, and tuition rate. Multiple revisions were made to this document, which included various options of revenue and cost distribution as evident in a sequence of financial documents dated and coded as follows: March 10, 2010

(D3), March 14, 2010 (D4), April 7, 2010 (D5), April 7, 2010 (D6), and November 29, 2010 (D7). The financial model eventually came to fruition in December 2010 with the acceptance of the formal agreement by all six member colleges. It was implemented in September 2011 upon receiving official approval from the Higher Learning Commission (HLC) to enter into a consortial arrangement. The approval came in the form of a letter from the HLC to each MiRIS college dated July 2011 (Appendix B). Receiving HLC approval signaled the launch of the financial model of shared costs and revenue and the hire of a full-time educational coordinator.

The MiRIS Consortium Agreement. While the MiRIS Consortium Agreement is a comprehensive document encompassing a copious list of terms and conditions, the language that demanded the most work and consumed the most time was that related to the financial structure and how it would be operationalized. The tenaciousness of the partners in arriving at an agreeable model is evident in the extensive length of time they worked on the financial element of the agreement, with the first draft being completed in August 2009 and finally brought to fruition 16 months later in December 2010.

A discussion about drafting a formal agreement was initiated as the result of a document being distributed to the program directors, deans, and the lone vice president at the second group meeting held June 17, 2009. The document titled "Questionnaire on Consortium Elements for Creation of Initial Draft of Agreement" (D8) stated that "tuition will be collected by each member for their students enrolled in consortium courses." While this particular process eventually was found to be impossible given the established financial processes of the Michigan Community College Virtual Learning Collaborative (MCCVLC), the document was important in the research as it offered a thorough outline

of terms and conditions that laid the framework from which the formal MiRIS Consortium Agreement (Appendix A) evolved.

Work to develop the formal agreement began after the June 17, 2009 meeting from reaction to the "Questionnaire on Consortium Elements for Creation of Initial Draft of Agreement" (D8). Evident in an email dated July 3, 2009 (E1), this reaction from the collective group helped with drafting the outline of what would eventually become the formal agreement. The initial outline was drafted by a program director serving only as a scribe and was submitted to GVSU's legal department that formally prepared the official MiRIS Consortium Agreement (Appendix A), distributing it to the entire group of program directors and deans via an email (E2) dated December 2009. The email identified three issues GVSU felt needed further clarification for inclusion in the agreement. GVSU requested clarification language for (a) cost sharing for the educational coordinator position, (b) tuition rate variance between university students and community college students, and (c) assurance of enrollment equity among colleges.

In response to the request, several documents provided evidence of ongoing negotiation and clarification to the original agreement, especially with regard to the financial model and processes. For example, an undated document (D9) provided a list of proposed changes requested by one of the partner colleges, while another undated document (D10) provided evidence of the original agreement draft imposed with marked changes from another of the partner colleges. Appearing to be an arduous process manifesting in a plethora of documents that revealed numerous challenges and complex solutions, the group's attention to ensuring clarity of the financial language provided

further evidence of the financial focus that prevailed during the Consortium's development phase.

The decision to use the MCCVLC platform to deliver the Consortium's courses offered significant challenges, compounding the complexity of the financial model and causing delay in finalizing the agreement. A process to collect and reconcile revenue between member institutions was unclear given long-established MCCVLC financial process that didn't accommodate common revenue among institutions. Another unknown was whether or not MCCVLC membership would be open to GVSU as a university. According to the agenda (D11), the Executive Director of the MCCVLC was invited to the August 2009 meeting of program directors, deans, and the vice president. Given that the MCCVLC is a function of the Michigan Community College Association (MCCA), the fee structure and tuition rate did not align with university practices and, as a result, there was question about the feasibility of GVSU's inclusion in the MCCVLC. GVSU's ability to enroll students in the MiRIS courses necessitated GVSU's membership in the MCCVLC. The MiRIS community college students desiring a bachelor's degree transitioned during the program from their community college status to enrolling as a GVSU student at the point they had exhausted the number of transferable credits. However, GVSU also was allotted four positions in which to enroll students into the cohort just as each community college was. GVSU students completed the MiRIS courses with the community college students but completed additional concurrent coursework that was designed and facilitated by GVSU to elevate the course to a 300 level.

Discussion regarding membership continued between the MCCVLC and GVSU after the August 2009 meeting. As a result, an email communication dated November 9, 2009 (E5) indicates that the GVSU Provost had approved MCCVLC's terms and conditions of membership, allowing GVSU to become a member.

The most profound MCCVLC-related dilemma was how the MCCVLC financial processes could be structured to accommodate the collective needs of the Consortium colleges in collecting, tracking, and reconciling tuition revenue. An email exchange between the dean of the fiscal agent and the Executive Director of the MCCVLC dated April 20, 2010 (E3) and April 21, 2010 (E4) provides evidence of the challenge of finding a workable financial process for the Consortium. In an effort to compose language for the formal MiRIS Consortium Agreement describing how the revenue would be collected and reconciled, the dean proposed to the Executive Director a financial process that would require the MCCVLC to change established reconciliation practices. Rather quickly, it was realized that the MCCVLC process could not be revised but that a MiRIS Consortium financial process would need to be developed as a second step to the MCCVLC financial process. MCCVLC's Executive Director responded to the dean with a potential solution that would allow the MCCVLC practices to remain intact while the Consortium performs a second-step reconciliation process.

> You can charge home students VLC tuition but we don't do anything different. It all runs through the same [VLC reconciliation] process . . . because you want the fiscal agent to capture the tuition and then pay back expenses to members, I'm wondering if the Consortium could do the same thing the VLC does. We reconcile each college individually based on both provider tuition, revenue sharing and home college revenue.

Upon bringing closure to the two MCCVLC-related issues, first being the inclusion of GVSU in MCCVLC membership and second, a workable financial process,

the fiscal agent dean prepared financial language that was accepted by the five other member institutions and imposed in the final draft of the MiRIS Consortium Agreement (Appendix A). It reads:

> The MCCVLC will collect and distribute net revenue and expenses according to its normal practices and will provide the fiscal agent a reconciliation report each enrollment period. Each Member institution shall invoice the fiscal agent of the consortium for direct expenses incurred in operating the consortium and its courses, including instructional costs. The Consortium Council will approve all invoices to be paid. Annually the Consortium fiscal agent shall prepare a statement of net revenue and expense for the Consortium and for each participating institution by no later than 120 days subsequent to the fiscal agent's fiscal year end. Consortium excess revenue will be distributed, or consortium net expenses billed to, each Member or non-Member in proportion to the number of allotted positions assigned to each Member or non-Member.

At the end of the first fiscal year, it was evident that there was a need for refinement of some of the process steps related to the financial model to ensure accuracy. An email (E6) dated July 2012 summarized a recent meeting of deans and program directors whereby the fiscal agent dean made the following points:

- Moving forward, financial information provided to [fiscal agent] from the VLC will be used for MiRIS financial reconciliation and each school will participate to assure accuracy of the information.
- Deans were asked to refrain from intercollegiate billing which results in the information from the VLC to [fiscal agent] to be inaccurate.
- Program directors and [educational coordinator] will assure students are declaring the correct "home school," "provider school," and "degree-granting school," again to assure accuracy of information from the VLC to [fiscal agent].

- Program directors will assure that all their students register through the VLC for courses and not through their individual college registration system to assure accurate MiRIS tuition structure.
- The VLC will award "home school" funds to the "degree granting school" in cases where they are not the same.

The email implied that the details of the financial model continued to be clarified for members. In addition to the financial points made, the dean also confirmed an agreement by members to adjourn any current expansion initiatives until the MRI program had undergone another full cycle and more data were available to make informed decisions. The point made by the dean in email (E6) reads as follows:

- The group agreed to postpone (1) admitting 30 students to the MRI program; (2) levying a program fee to the MRI program; (3) adding an additional modality. This decision will be re-visited with a financial assessment in the spring of 2013, at which time, the deans will make decisions on the best strategy to contribute to financial viability.

Finding 2: The Interpersonal Impact

The formal MiRIS Consortium Agreement (Appendix A) defines "members" to mean the six partner institutions—Grand Rapids Community College, Grand Valley State University, Kellogg Community College, Lansing Community College, Lake Michigan College, and Mid Michigan Community College—while in interviews and documents, the term "members" was used to describe the individual representatives of each partner institution. It could be assumed that "members" refer to any individuals from a "member" institution including the president, provost or vice president, dean, department chair,

program director, faculty or other representatives. In presenting this finding on the impact of interpersonal relationships, the term "member" refers to primarily to the program directors responsible for driving the initiative and operationalizing the work.

In-depth interviews. Strongly supported by the interview data, pre-established interpersonal relationships were clearly credited with initially bringing the six colleges together. In addition, the ability to effectively interact as a group was perceived as being the key competency that advanced the Consortium's efforts, keeping members motivated as they worked through endless challenges of the new partnership. Interview responses revealed that 9 of 9 interviewees or 100% of the participants endorsed the program director network for bringing their college to the table to engage in the initial partnership discussions and 9 of 9, or 100% of participants credited relationship qualities for effective problem solving and conflict management encouraging members to stay the course despite many challenges. Trust, transparency, and open communication were mentioned often by participants, as was the presence of a shared vision and collective determination.

Program Director I:

> We were invited to the early talks of a partnership as a result of my professional friendships with program directors which had developed over the years. We had a trust factor, we all had personal relationships we had established over many years and we all kind of went back to that . . . I think that's really what's held us together, and all of us had the same goal. We wanted this to work no matter what so we were able to handle some bumps in the road maybe a little differently than some other groups would do.

One of the "bumps in the road" the program director spoke of was the disruption that occurred to the group's dynamics when roles changed. Among the six program directors, two were promoted within their institutions while remaining actively involved in the Consortium. One advanced to a department chair position while maintaining the

responsibilities of program director, and the second assumed a dean's position transitioning the program director role to a faculty member familiar with the Consortium. These positional changes caused members of the group, including the two who had advanced within their institutions to question their roles and responsibilities moving forward. As a result, some individual members experienced stress and uncertainty. Program director I pointed out that while the people and roles changed, the collective goal helped guide the Consortium efforts to remain on track, while members worked to re-establish equilibrium as a group.

Program Director II:

> At one point, I felt there was a breakdown in trust—and I would say that was the greatest challenge . . . I think we all began to realize where our own personal mistakes were in the group effort but we were able to talk out those issues in a group setting—it was growing pains type of things . . . we discovered that those things weren't necessarily intentional. This was a grass root effort and I think we [program directors] were willing to step outside the box of our normal working environment with an interest in seeing where we could go with resource sharing—we're a friendly group and could overcome our differences in my opinion. I had a personal interest to forge ahead in an area that was new—sort of pioneering and I was trying to get my college to pay attention to the idea.

Program Director II offered a rich perspective of the impact of relationships by discussing a breakdown in trust that occurred among program directors about 24 months into the partnership and how the interpersonal skills of the group addressed this challenge. Program Director II believed that the ability to freely communicate as well as the group's strong curiosity to see how far they could go and how much they could accomplish moved them past the fractured trust to re-establish their bond.

Testimony from other interview participants consistently supported the impact relationships had on the partnership.

Program Director III:

> I think that whenever you put a group of six to seven people together they don't all agree on everything and we put six . . . or five community colleges and one four-year college together, now "MEOW" . . . I mean you just can't expect that will work! And we're doing it, we like each other, so good for us!

Program Director IV:

> Well I think that we developed a level of trust very early on. We saw we could work together, we didn't have to compete . . . from that, I think we have developed a confidence in one another's abilities and a trust that we weren't going to do something that would come back to haunt us later by destroying a relationship that was more important. It gave us a higher purpose to what we were doing, and to me, that was just spectacular . . . that is what is holding us together in my mind!

Program Director V:

> This was an opportunity to interact with other colleagues and also an opportunity to be included in something new; a new type of program in an advanced modality.

Program Director VI:

> This is a lot of hard work! There were many misunderstandings along the way so it was necessary to communicate things in different ways so that everyone could understand and see how it could work.

Dean I:

> There has to be trust. I think discussing issues a lot and going over the realities of what will work and what won't work is helpful. If we didn't build trust and a working financial model, then none of this will be possible.

Dean II:

> I think we have been transparent and people have been very honest in that we say what we are thinking. I believe that the conversations that happen outside the general meetings need to be positive. We can't have sidebars because then people can't be open and transparent within the group. That is critical because it will undermine the work of the group. Also, you don't let the minutia get in the way; everyone has to keep their eye on the big prize, the goal.

Document analysis. Email exchanges reviewed by the researcher illustrated a friendly and supportive interpersonal structure between Consortium members.

Camaraderie. A sense of friendship is unmistakable in an email (E7) dated February 2010 and sent by a program director to other members after a rather taxing meeting where they discussed, debated, and compromised on the MRI curriculum, clinical territory, student entry-level readiness requirements, and other highly charged issues. It read:

> Great meeting today! No matter how "spirited" things get, I always have a good time, and value the network! Consortium or not, we should have been meeting a long time ago . . . just for kicks!

Conflict. A sense of respect, encouragement, and a commitment to finding solutions even in time of conflict is evident through various email exchanges among members. An example can be found in an email exchange (E8) dated December 2010 addressing a long-standing conflict between two neighboring MiRIS program directors vying for student clinical education assignments in the same hospitals. Early in the partnership, this ongoing issue surfaced as members sought to find a solution documented in the following email conversation:

> I understand your thoughts regarding [shared clinical sites] and I believe eventually, it will happen once we have a trusted and impartial educational coordinator in place to make clinical assignments . . . but until then, you will need to be patient as folks try to ease into the new way of thinking . . . until they feel confident that they WILL have valid clinical positions for the students they enroll into the program. It takes time to build trust in people and in the new process. This attitude you're getting from [the other program director] is just fear. [She/he] just doesn't want to fail. None of us do. I know the two of you will move past this and be able to work things out, but you need to offer [her/him] reassurance that you're not taking over clinical assignments that [she/he] has established and is counting on.

The response later that day:

> Yes, I agree with all of this. To be honest, I'm not overly concerned, especially because everyone [MiRIS members] has been chipping in to help resolve the problem which just demonstrates the collaborative efforts and lets everyone see it in action.

Inclusion. Another characteristic of the group's obligation to each other was their commitment to inclusion. Early in the partnership, the following email (E9) dated July 2009 was sent by two of the program directors to other members expressing the desire for transparency and participation:

> We want to make sure everyone knows where we are in the development of the MiRIS Consortium and believe it will be best to copy everyone in on all communication between individuals concerning the Consortium. This is the start of that. We want to make sure everyone knows what is going on, can contribute, and assure no one is left out on any decision making that is evolving.

Multiple meeting notes and emails demonstrated the commitment to inclusion through assuring representation of all six colleges at structured meetings. Evidence of significant effort to identify meeting dates and times that would accommodate all schedules was abundant. Further, documents revealed that members called in to meetings or sent proxy representation when they were unable to physically attend and, on occasion, virtual meetings were held using SKYPE technology. An email dated July 2012 (E6) summarizing a recent meeting referenced a dean who had called in to the meeting from a remote location and another who had sent a delegate.

The MiRIS Consortium Agreement (Appendix A) assures inclusion through formal terms and conditions of governance, as stated in the document on page 2:

> The Consortium Council shall be created to oversee the operation of the Consortium and shall be comprised of the Consortium Director, the fiscal agent Dean and one representative from each Member school to be selected by the appropriate Dean of each Member school (or administrator of equal or similar level responsibilities). Each Consortium Member Dean shall indicate in writing the name and contact information of that Member's Council representative. Each appointed Council representative shall serve at the pleasure of the appointing Dean.

Given the human interface of relationships, it was difficult for the researcher to grasp the full extent of the interpersonal dynamics of this particular group and the significance it had to the Consortium's success through the document analysis. The partnership's social nuances were best understood through the members' own accounts shared during the in-depth interviews.

Finding 3: The Champion

According to Eddy (2010), "champions supply a critical role in partnership formation . . . a champion is defined as an individual who advocates for the development of a partnership and who brings together others to engage in the project" (pp. 27-28). Amey et al. (2007) contended that the champion need not be in a positional role but rather have the personal, cultural, and social capital to contribute to the success of the partnership. Amey (2010) stated that

> personal passion including a sense of moral imperative built on core values of community colleges to serve local learner needs can be a compelling motivator for those who champion partnerships, perhaps much more than implementing the directives of a passionate supervisor or president. (p. 20)

Given the affirming interpersonal relationships among the program director peers and their shared passion for medical imaging education, both of which were prominent findings in the interview response data, there is little question as to why it was a program

director who seemingly assumed the unofficial and untitled role of the champion for the MiRIS partnership.

During the preliminary discussions of the potential for an intercollegiate partnership, two of the six program directors emerged as co-champions, soliciting initial buy-in and offering reassurance to the program directors and administrators from the other colleges. One of the two co-champions was the university program director, while the other was from a community college. It wasn't long, however, before the university program director intentionally stepped back as a co-champion. As stated to the researcher by the university program director, "We believed that the community colleges needed to drive the initiative for it to be successful but were willing to step in whenever and however we were needed." With that, the community college champion remained in place, which was evident by the work completed on behalf of the partnership that in part included garnering buy-in, fostering processes, facilitating the formal intercollegiate agreement, and securing the approval of the Higher Learning Commissions (HLC).

In-depth interviews. Amey (2010) identified five criteria of a champion: (a) creates the vision that establishes the need for the partnership, (b) shepherds processes, (c) ensures buy-in, (d) communicates goals and outcomes, and (e) generates and maintain a high level of commitment to the activity (p. 20). Dean responses to a particular interview question regarding social capital directly aligned with Amey's definition of the "champion." Addressing individual qualities necessary to drive the MiRIS Consortium initiative, 3 of 3 deans or 100% spoke to a deep knowledge and passion for the work to be done, a sincere belief in the concept of collaboration, and the ability to inform and inspire others.

Dean I:

> Well, one I think is that they have to be open-minded to the fact that partnerships can work. If you don't believe that, then it's hard to get in there. . . . And two, I think that people begin to see how life is different for one group versus another; how their perspective might be different based on the reality of where they are.

Dean II:

> I think you have to have people who are impassioned about the concept and the idea. People have to be passionate about it; if they're being forced, they won't get it. You need to have the players that have skin in the game. They need to know and speak the language; understand online education, hybrid education, and MRI curriculum.

Dean III:

> Organizational capacity is important criteria as is the commitment to the discipline and to the heart of collaborative work; the ability to not get mired down in details and just keep plugging along and stay focused on the goal. Advocacy is another competency; the ability to keep your president, the MCCA and others informed as you're chugging along and eventually the line for those who believe this is a good idea gets a little longer.

Document analysis. Because interview questions didn't speak directly to the role of a champion, responses were rather ambiguous with regard to the presence of a champion of the MiRIS initiative. However, the document analysis clearly reveals the presence of a champion, evident through significant work performed by one person on behalf of the partners and representing all five of Amey's (2010) criteria of a champion.

The champion's role in buy-in. One of the initial responsibilities assumed by the champion was that of buy-in to the vision of an intercollegiate partnership by the program directors and deans. Several documents surfaced during the document analysis that spoke to the champion's efforts to provide a sound rationale for collaboration in hopes of encouraging the colleges to commit for the

purpose of delivering advanced medical imaging education with the first program intended to prepare MRI technologists.

Preliminary information was communicated by the champion in a document prepared in March 2009 titled "MRI Brief" (D12). The document was directed to senior administrators informing them of the need for advanced medical imaging education in MRI, CT, and other modalities and alerting them to the challenges associated with offering programs in these specialized technologies. From this document, the champion prepared a "Talking Points" (D1) document that was used to facilitate the first collective meeting of the six colleges in April 2009. In the document, the champion listed following as benefits to forming a consortium:

1. More students
2. More clinical opportunity
3. Ability to hire and develop qualified faculty vs. hit-and-miss adjunct
4. Serves more student markets, MRI, OJT, RT, non-MR, and AAS non-RT
5. Joint accreditation effort and cost
6. Bachelor degree option
7. Sharing resources: instruction, financial, etc.
8. More opportunity for collaborative grants
9. Model for other medical imaging consortiums
10. National college recognition for unique collaborative effort
11. Forward-thinking online delivery

12. Potential growth: CT program, cardiac interventional, vascular interventional, mamms, bone dexa, quality management, registry exam review, and CEU opportunity

The champion's role in the financial model. In preparation for the third meeting of the deans and program directors from all six colleges held in August 2009, the champion prepared the first draft of a detailed financial model (D2) and presented it to the group. This document launched the first of many comprehensive discussions intended to establish an equitable and workable financial model. As a result, the champion facilitated drafting multiple revisions as evident in follow-up documents dated and coded March 10, 2010 (D3), March 14, 2010 (D4), April 7, 2010 (D5), April 7, 2010 (D6), and November 29, 2010 (D7).

Upon bringing closure to the financial model, the partners were able to sign and execute the formal MiRIS Consortium Agreement (Appendix A). While the original draft (D13) of the agreement was prepared by the legal department of the university partner, the champion gathered partner input and made revisions, allowing the document to eventually culminate into the final draft of the formal MiRIS Consortium Agreement (Appendix A).

The champion's role in curriculum. In concert with the ongoing meetings of deans and program directors working to establish a partnership structure that would eventually come to be known as the MiRIS Consortium, the program directors were meeting separately to develop the framework and curriculum for an MRI program that would be delivered through the partnership structure. Prior to

discussions of collaboration, the champion and a program director colleague had independently completed curriculum work that would serve individual MRI programs. However, due to the impending shared program, they joined efforts to establish a curriculum outline identifying a division and sequence of courses. As the curriculum work continued and the outline was modified, the champion maintained the many revision updates evident by the "MiRIS MRI Curriculum" document included as Appendix C. The document was originally established in October 2009 and underwent seven revisions, coming to fruition in January 2011 in time for the start of the first cohort of MRI students. The document served only as an outline of the curriculum and was not inclusive of the individual course design and development. The responsibility to ensure that the granular course development work was completed was assumed by three of the six program directors who, in turn, hired qualified faculty to develop the individual courses.

The champion's role in leadership. Beyond soliciting buy-in and offering the group reassurance, further evidence of the champion's leadership to the program director group can be found in a PowerPoint presentation (D14) the champion used to facilitate a meeting in January 2010. This meeting occurred at a time when the six colleges had been working for a year to bring a formal structure to the partnership but had not yet settled on a workable financial model or the terms and conditions of an intercollegiate consortial agreement. Also contributing to the delay, the program directors had not yet brought closure to the MRI curriculum or program framework. As evident by the PowerPoint slides, the champion's intent was to motivate and move the group forward by reminding

them of the reasons behind the consortial effort, identify the work yet to be done, offer some proposals, and secure some decisions. It was at this meeting the champion presented the curriculum work that had been done to date, aligning it with the accrediting agency's guidelines. It was also at this meeting that individual colleges stepped forward to assume ownership of the development of individual courses within the curriculum. Kellogg Community College assumed responsibility for the development and delivery of the curriculum's two foundational courses, as well as for the three clinical courses and related policies and procedures, hiring an individual with the expertise and qualifications to execute the work, while the program directors from Lake Michigan College and Lansing Community College did the same with regard to the remaining didactic courses within the MRI curriculum. It was one year later, January 2011, that the MRI program's curriculum work was completed.

Another critical outcome of the January 2010 meeting was the fact that the program director group was able to arrive at a consensus regarding the qualifications that would be necessary for the person filling the educational coordinator position, which would provide principal oversight of the MRI program on behalf of the partnership. To facilitate discussion, the champion prepared and presented a proposal that aligned the minimum qualifications of faculty and staff according to the accrediting agency's requirements with the qualifications that the champion believed would be necessary to meet the needs of the partners.

The champion's role with support departments. The long-held policies and procedures of individual colleges with regard to advising, enrollment, registration, tuition payment, transfer/articulation, student records, and a plethora of other related processes were challenged by the needs of the partnership. As revealed in several of the interview responses, programs directors were experiencing tension as they struggled to encourage new or amended processes on behalf of the Consortium at their respective institutions. Lacking a clear understanding of the Consortium's purpose and the significance of what they were being asked to do, staff often responded with resistance and frustration. In response, the champion enlisted the other program directors in compiling a comprehensive list of registrars, advisors, enrollment directors, business office managers, and others who were being asked to amend policies and procedures to accommodate the needs of Consortium students. These individuals, along with the program directors, were invited to a luncheon and presentation hosted by the champion to explain the rationale behind the consortium and how their individual work was critical to the success of this intercollegiate partnership that we as program directors so deeply believed in, and that our presidents had committed to supporting by entering into the consortial agreement. The luncheon meeting was intended to enlist buy-in that would help the MiRIS students be successful. The PowerPoint presentation dated April 2011 and coded D15 provides evidence of the champion's efforts to encourage understanding and solicit cooperation among the ancillary departments of the MiRIS colleges. Having participated in the meeting, the researcher's observation was that the information was very well

received and the intent to engage individuals from supporting departments was successful. One program director expressed pleasant surprise of their registrar's enthusiasm for the consortium's vision and willingness to help facilitate the processes so that the initiative can be successful.

Further evidence of the champion's efforts to help inform staff and ensure understanding can be found in the process guides drafted and distributed to program directors for use with staff as reference documents. A document coded D16 defined the steps to the MCCVLC financial process, followed by the detailed steps of the MiRIS financial process. A second document coded D17 establishes the steps to how GVSU students are registered for the community college courses and how the tuition is captured by the Consortium.

The champion's role in accreditation. In the company of two other program directors, the champion flew to Albuquerque, New Mexico, in June 2009 to meet with the Chief Executive Officer and Board of Directors of the Joint Review Committee on Education in Radiologic Technology (JRCERT) to inquire if program accreditation would be possible for the MRI program delivered through the consortial model. Given that JRCERT program accreditation was not structured for shared programming, accreditation could not be assumed. It is important to state, though, that while JRCERT accreditation is not required for MRI programming, the program directors unanimously agreed that they wanted to secure this level of quality and credential for the MiRIS MRI program and, essentially, the program directors were requesting the JRCERT consider changing long-established guidelines for program accreditation to accommodate the needs

of the MiRIS Consortium. Realizing the partnership was in its infancy with much work to be done, the JRCERT requested that as the partnership became formal and program structures confirmed, written documentation be submitted to provide the Board with a better understanding of the Consortium's intent with regard to program quality assurance. Honoring the JRCERT's request, after the formal MiRIS Consortium Agreement had been secured and the first student cohort enrolled, the champion prepared a letter dated April 15, 2011 (D18), providing narrative that addressed the Consortium's purpose, conceptual framework, governance, quality assurance, individual roles and responsibilities, and the execution of MRI didactic and clinical education. This letter was submitted by the champion to the JRCERT Board of Directors as an attachment to an email dated April 19, 2011 (E10), along with the MiRIS MRI Curriculum (Appendix C), a sample outline of a full associate degree program of study (D19), and the formal MiRIS Consortium Agreement (Appendix A). A letter from the JRCERT Chief Executive Officer on behalf of the Board was sent to the champion dated May 13, 2011 (D20), declaring support from the JRCERT Board of Directors to proceed as presented with the intention of securing programmatic accreditation for the MiRIS MRI program.

Accreditation concerns were not limited to JRCERT programmatic accreditation. Just as the six colleges were preparing to sign the formal agreement, discussion ensued on the interpretation of High Learning Commission (HLC) standards with regard to whether individual colleges were required to notify the HLC of consortial arrangements or whether they must seek approval to enter into

a consortial arrangement. On behalf of the partner institutions, the champion began conversations with the HLC in January 2011 that culminated in July 2011 with each of the six partner colleges receiving a letter of approval (Appendix B) to enter into the MiRIS Consortium arrangement for the purpose of delivering an MRI program. Prior to receiving HLC approval, the champion submitted three letters with extensive narrative in response to information requested by the HLC. The letters were dated and coded as follows: January 11, 2011 (D21), February 21, 2011 (D22), and June 17, 2011 (D23). In addition, the champion prepared the Substantive Change Application (D24), sharing it with the five other colleges to make any necessary changes unique to their institution, as evident by an email dated April 16, 2011 (E11). The colleges returned the application to the champion for submission to the HLC as requested. The packet of applications was submitted to the HLC as an attachment to an email dated May 10, 2011 (E12).

Finding 4: Organizational Change

The interview and document data offer strong evidence that organizational change occurred as a result of the MiRIS Consortium. Attitudes, values, and behaviors were disrupted as were long-standing institutional structures and processes. Both interview response data and the document findings supported the fact that organizational change occurred within these six institutions.

In-depth interviews. Interview responses revealed that participants were thinking differently about intercollegiate competition and collaboration. While the researcher did not get the impression that there was ever a resistance to collaborative efforts, the group, especially the program directors, had never given intercollegiate collaboration much

thought regarding how it might be applied to their programs as well as to other programming efforts. However, as a result of their MiRIS experience, they were starting to think about how institutional capacity could be expanded with further partnerships. The interview data supported the existence of a new collaborative mindset.

Again, most profound among the program director group was an amendment to long-held assumptions about the legitimacy of online teaching and learning. Given that the scope of their experience was limited to traditional face-to-face radiography programs, their initial response to online teaching and learning in MRI education was met with considerable doubt. That said, their experience with the MiRIS MRI program model, which combines online didactic courses with active clinical education, inspired enthusiastic implementation of online learning in their individual radiography programs.

Collaborative mindset. Although an intercollegiate partnership like the MiRIS Consortium was a new experience, participants responded favorably to the model and gave thought to an array of possibilities for other collaborative efforts among colleges. They also spoke to the institutional value intercollegiate collaboration brings. Nine of 9 or 100% of the respondents expressed an unwavering appreciation for intercollegiate partnerships.

Program Director I:

> [The MiRIS Consortium] provides a collaborative emphasis. The attitude of competition has given way to collaboration—sharing ideas. Program directors are used to working within a silo structure and involvement in the consortium requires a collaborative spirit . . . a willingness to step outside the silo and be innovative with others with new ideas and ways of doing things. It really takes a willingness to change the silo mindset. Any programs with small enrollments and structured curriculum such as welding, interior design, automotive and maybe even nursing could work well in a consortium of people are willing. Our Provost suggested that the model could work low enrollment liberal arts programs too such as the foreign languages.

Program Director II:

> It allows the college to try something new—a collaboration across several colleges. You can't move forward without trying new things.

Program Director III:

> Collaboration is a different way of thinking—a huge turnaround from a culture of don't share to let's help each other out.

Program Director IV:

> Collaboration could be considered for any program that has difficulty in reaching the necessary critical mass to be financially viable. Offering a financially viable MRI program through the Consortium model attracts "cream of the crop" students, increases the status of the profession and the earning potential of these graduates.

Program Director V:

> Our college welcomes collaboration with other colleges and MiRIS expanded our network in a different way. There may be good opportunity for something like this [MiRIS Consortium] . . . anytime the enrollment is going to be very low.

Program Director VI:

> The university involvement gives our community college students an opportunity to the baccalaureate degree that is unique from the traditional articulation agreement. It gives our students the ability to grow. I haven't given it much thought but I can't really think of any program that couldn't work offered the way we are offering MRI.

Dean I:

> The Consortium gives us the ability to offer another program option to our students that will provide a meaningful skill when they leave. Other collaborative initiatives would depend on program accreditation requirements. MRI and other programs radiological and imaging sciences are more flexible than some of the other accreditations but that said, there might be a consortium arrangement for those too. There needs to be a willingness that partnership between colleges can work.

Dean II:

> There are endless opportunities for collaboration! You could package it in so many ways but the key is be open to different models depending on the needs of a particular program and how it could work and not how it could fail.

Dean III:

> Creating partnerships to meet needs that move students forward to gain the credentials they need to get jobs in the community . . . [partnerships] are the way of the future . . . it's the way of community colleges. There are programs like certified nursing assistant, physical therapy assistant, medical office assistant and so forth that could function in a consortial model but looking beyond programs to clinical sharing . . . how we can best tap the finite capacity of clinical opportunity without burning those resources out. And in lieu of clinical, look at simulation from a collaborative approach . . . individually, we can't all afford those costly simulation labs.

Online teaching and learning. All nine or 100% of the participants expressed that they were inspired to think differently with regard to online learning. At the onset of discussion about forming a partnership, the program directors expressed significant skepticism about the effectiveness of online learning, yet realizing that the collaborative MRI program would depend upon this model of delivery, they preceded with cautious concern. However, given the initial success of online learning in the MRI courses with the first cohort of students, their cautious concern shifted to the point that several of program directors have implemented some degree of online learning in their radiography programs or have plans to do so.

Program Director I:

> There's more than one way to skin a cat—an old phrase—but it [MiRIS online delivery method] has opened my mind to some ideas that I hadn't really thought of or thought would never work at [my college]. I thought online instruction was instructor-led like face-to-face but now I see that it's more facilitation. We have transitioned two courses in our radiography program to hybrid courses. Online courses free up students time, especially important when they get to the point in the program where they can start working a student/tech position in one of the hospitals.

Program Director II:

> We did implement an online course in our radiography program and are considering more online or hybrid courses as a result of what we've learned through the MiRIS courses.

Program Director III:

> I have an instructor who would like to make our radiography patient care course online. Because of the experience with MiRIS, I am in full support of implementing online/hybrid in our rad. program.

Program Director IV:

> I had a strong opinion that online learning was not a viable way to offer courses in Radiologic and Imaging Sciences. That opinion has changed. It opens huge opportunities. Our entire rad. program is moving to hybrid. So yeah it [the MiRIS online/hybrid model] has had a major impact of what we're doing here at this college.

Program Director V:

> We have MRI students that travel far distances so the online didactic courses have made it possible for those students to participate. We'd like to do hybrid in our radiography program because there are several radiography students who are required to travel long distances too. We have the rad. program structured to limit the student travel but hybrid would help reduce it even more.

Program Director VI:

> It is quite a step to offer all the MRI didactic courses online when you're used to a face-to-face program. There are many tools now available for effective online teaching and some are even free but I have come to realize that my physical presence in the classroom doesn't guarantee learning. Online teaching can require a lot of start-up time for the instructor and a lot of orientation for the student but my ideas about online has changed and we're looking at more implementation in our radiography program.

Dean I:

> Our college doesn't offer a lot of online courses so it's rather new to us but I do believe that didactic courses can be done. Makes you think. Due diligence is necessary however to assure the person at the computer completing the assignments and assessments is truly the enrolled student. This is especially true when it involves a critical knowledge base. When lab skills are necessary, it can be figured out, either through each individual institution teaching their labs or in some type of collective weekend model.

Dean II:

> We've learned that you don't have to have a talking head in the classroom to learn. Students today are disciplined and motivated to learn in an online environment with the proper infrastructure and support but while the students come with the technological savvy to be successful, it's often the faculty that are lacking so they too need to be supported.

Dean III:

> The online model definitely causes everyone to think differently about territoriality in offering programs. Distance is no longer a barrier.

Document analysis. Beyond the interview evidence of a change in individual attitudes, values, and behaviors with regard to collaboration and online teaching and learning, several documents surfaced to support that change occurred to institutional structures and processes as a result of the MiRIS Consortium. The formal intercollegiate agreement, the consortial approval from the HLC, the shared curriculum, and the new financial processes are examples of change in how these six colleges do business.

Because several of the key documents that support organizational change have been discussed previously in support of other major findings, the researcher has created a table with which to simplify the organization and presentation of the documents as they relate to organizational change (Table 6).

Table 6

Supporting Documents for Organizational Change

Document	Date/Code	Organizational Change
MiRIS Consortium Agreement	December 2010 Appendix A	Partnership: A new intercollegiate partnership among six institutions culminating in a business model of resource sharing and process changes for the purpose of program delivery
Kellogg Community College Annual Report	August 2011 D25	Values: Highlighted the MiRIS Consortium confirming the College's commitment to innovation and collaboration as a means to an end for the educational benefit of students
Higher Learning Commission (HLC) Letter of Approval	July 2011 Appendix B	Institutional Accreditation: Amended institutional accreditation status by awarding approval to participate as a member institution of the MiRIS Consortium
Joint Review Committee on Education in Radiologic Technology (JRCERT) Letter	May 2011 D20	Program Accreditation: Changed the approach to programmatic accreditation and method in which the self-study is drafted to reflect the collaborative MRI program
MiRIS MRI Curriculum Outline	January 2011 Appendix C	Curriculum: Shared online curriculum across six institutions
Articulation Agreement with Grand Valley State University (GVSU)	December 2011 D26	Articulation: New articulation agreement providing non-duplicative pathway for community college students in the MRI program to transition to GVSU for baccalaureate degree completion
Financial Process Guide	June 2012 D16	Financial Processes: New financial processes to accommodate the cost and revenue sharing of the MiRIS Consortium members
Registration Process Guide for GVSU students in MiRIS MRI Courses	June 2011 D17	Registration Processes: Amended registration process to allow GVSU students to achieve credit for 300 level courses in part through participation in the 200 level community college MRI courses

Finding 5: Value Impact

The research data revealed that the efforts of the MiRIS Consortium have provided a broad and encompassing value to organizations and to individuals. Most prominent in the research was that the Consortium efforts brought value to individual MiRIS colleges, to students, to program directors, and to the profession of medical imaging. Although more ancillary, value was also realized at the state level, as mentioned by several interview participants, and was clearly evident in the document analysis of one very critical document.

Given that the Consortium evolved from the program level, interview questions exploring the existence of any perceived personal value were focused to the six program directors only. From the responses, 100% of the directors revealed that they found the collaborative experience of participating with the Consortium to be of value to them in contributing to their effectiveness in their current role as a program administrator and instructor.

Also focused only to the program directors were interview questions related to the potential impact of the MiRIS Consortium on the profession of medical imaging and how technologists are trained. The researcher believed that because the program directors were all former practicing technologists and long-time radiologic science educators, they would be in an auspicious position to speak to professional impact. They were also asked to comment on how clinical administrators have responded to the efforts of the Consortium.

In-depth interviews. The interview data spoke to four prominent categories of added value: (a) institutional, (b) student, (c) program director, and

(d) profession/workforce. The responses among participants were varied and inconsistent with regard to the depth and breadth of value of each category. For example, while all six program directors enthusiastically believed that a comprehensive educational program for technologists far surpassed the on-the-job training method in providing value to the profession of medical imaging and to employers, only one participant elaborated on the potential of reduced liability risk to patient safety as a result of a thoroughly trained and qualified technologist workforce. Another single participant spoke to employer value from a professional development cost-savings perspective, allowing employers to hire for these specialized positions from a highly qualified applicant pool versus incurring the cost of on-the-job training.

Further disparity in depth and breadth of interview responses can be found in how participants addressed student value. Some participants limited their answers to the ability to expand program offerings for students, while others thought more encompassing about how a student who has earned a credential and secured employment can contribute to their community impact of a skilled and employed citizenship. Regardless of depth and breadth of individual responses, all participants were articulate in expressing an unambiguous position that the MiRIS Consortium has made a positive impact and provided a means of added value in a variety of ways.

The following interview responses are arranged to address the added value of the MiRIS Consortium to institutions, to individual program directors, to students, and to the professional workforce of medical imaging.

Institutional value. Participants readily articulated the value the Consortium's efforts provided to their individual institutions as follows:

Program Director I:

> [The Consortium] helps us meet the ever-changing needs of our community and of our state. It also addresses the college's interest in providing more distance education options.

Program Director II:

> We're meeting community needs but because of the Consortium, we're do it while being responsible with resources.

Program Director III:

> The Consortium expands our educational offerings for our students and the online program structure expands access and this is a value to our college and aligns with our mission.

Program Director IV:

> This Consortium contributes to the mission by expanding our offerings than we could do on our own.

Program Director V:

> Because we are providing a service to our community hospitals, it is a value to us as a community college. Besides we have a tendency network with other colleges so the Consortium is another of those networking opportunities for the college. We want to work with other colleges in the state whenever possible.

Program Director VI:

> Networking with the other colleges provides more opportunity for our students, which in turn is valuable to us as a college. States are looking for economies of efficiencies. So how do we get these efficiencies? Partnerships are the easiest way to realize efficiencies in getting students through a program in a timely and cost-efficient manner. This [MRI] program run through the Consortium should appeal to any state including our own. I also have to mention that besides being cost-efficient, there are a limited number of faculty with the required credentials available to teach in these specialties, so not only can we benefit from cost-savings, we benefit from sharing qualified faculty and clinical education opportunities.

Dean I:

> It increases access to a medical program that our students wouldn't have otherwise had access to if we were offering it by ourselves. They have the opportunity to earn a meaningful skill.

Dean II:

> This model addresses student success, access to programming, workforce trends, and fiscal responsibility. It aligns with what we want to do here at this college.

Dean III:

> I will put this in a 21st century framework . . . workforce programs are expensive and will continue to be expensive. [The Consortium] allows us to maximize our state and local revenue to serve students and the community in an efficient kind of way.

Student value. According to participants, students experienced significant benefit not only from the ability to train and earn a credential in an advanced imaging modality, but also in the convenience of the online delivery format.

Program Director I:

> Our students don't have to relocate and they really appreciate that. We are able to serve students in the MiRIS MRI program regardless of where they live because of the agreement between Consortium colleges. The clinical sites have bought-in to the value of what the Consortium is trying to accomplish and some have developed student MRI positions that could very well lead to permanent technologist positions upon graduation, while other facilities have called inquiring about our upcoming graduates.

Program Director II:

> It offers students the convenience of self-paced online courses and the ability to participate regardless of geographic location.

Program Director III:

> The hospitals want to hire our students! I am so proud to walk into the clinical departments and have 3 to 4 people stop me to tell me how much they love the Consortium MRI students and that they're lobbing for technologist positions so that they can hire them. The clinical administrators and technologists are very happy with what we're doing with the program and this will only serve to help the graduates of our program get jobs.

Program Director IV:

> Our students have the advantage to move vertically through the profession increasing their employment opportunities and in the long-run, their earning potential.

Program Director V:

> [The Consortium] allows us to offer opportunities for students to get trained for a job in MRI which is high-tech and paid well—the salary is right up there for a community college graduate. Because of the online didactic courses and shared clinical assignments, all students are getting the same opportunities regardless of the size or location of their home college.

Program Director VI:

> [The MRI program] plants the seed that it doesn't just stop with radiography; there's more opportunity for growth based on their interests. It might be completing formal training in MRI or another advanced modality or taking advantage of the baccalaureate option and maybe even teach! The MRI program also includes clinical education which puts them in the view of potential employers—another value to the students.

Dean I:

> Well, one big benefit for students is that for those who would like to pursue the baccalaureate degree, they are able to do so without duplication of courses. It makes it much more cost-efficient for the student if they can take as much as possible at the community college tuition rate.

Dean II:

> With the hybrid/online format, students can go to school in their own community and if they need technology support or if they lack the necessary equipment at home, our technology center is open 24/7. They are also familiar with their home college's staff and they are able to complete their clinical education in their home community as well. Essentially, our students have access to curriculum they might not otherwise have but it's available in a close, comfortable and convenient environment.
>
> We also are preparing the student for the workforce—also a customer—that will be affected by the Affordable Health Care Act of 2014 requiring healthcare workers to have specific training, licensing credentialing, etc.

Dean III:

> We are graduating students with a marketable skill and credential who are able to obtain a job that pays enough to pay off student loans. It's not only the student's self-interest to be able to sustain themselves, but it is the larger element of community sustainability.

Program director value. An unanticipated finding was the depth of personal reward the program directors experienced through their participation with the MiRIS partnership.

Program Director I:

> We have been able to share some of our work responsibilities. The collaboration has given me more insight, a big picture view of college processes and that helps me.

Program Director II:

> Professional challenge. It wasn't easy. It wasn't convenient. Nobody was pushing me to do it. But for me, it brought a professional challenge that I thought I could learn and benefit from. It has helped me learn more about online learning environment and hoe to work collaboratively with other schools and has given me a lot of insight I wouldn't have otherwise had.

Program Director III:

> I've learned so much from the other directors. I can't know everything myself and having access to those other directors provides valuable information that helps me with my radiography program too. Because of the Consortium, I've had to do things I didn't know anything about—like the financial aid approval process—it was a challenge, well, it was awful, but I learned so much about something I never would have gotten involved with otherwise. I didn't know what I didn't know. But for me, this has been 100% positive!

Program Director IV:

> I've kind of been dreaming that this sort of thing [growth of the radiologic technologist professional role and educational status] would happen since I got into the field, for me it goes back 30 years. And I really had thought I would die before anyone had a chance to do anything like this. Then all of a sudden this beautiful thing bloomed and started to actually grow; I'm amazed every single day and I'm just thrilled with it.

Program Director V:

> I really enjoy the camaraderie of the group. When we meet, we talk mostly about MRI but the topic of our radiography programs comes up from time to time either informally or otherwise. [The program director group] has really helped me professionally.

Program Director VI:

> The networking with the other people in the same profession has let me gather their words of wisdom which has helped me to do things better in my programs. It's been a wonderful relationship and good friendship.

Profession/Workforce value. Participants spoke to the value of the MiRIS comprehensive MRI program in developing a competent workforce lending to reduced cost for employers and increased safety for patients.

Program Director I:

> We have been able to grow our imaging programs to meet the growing needs of the profession through better trained techs and the hospitals don't have to train them. Technology has changed so much from what it used to be that the hospitals don't have the ability to provide the level of theory necessary through the old on-the-job training method.

Program Director II:

> Although our national colleagues may not yet know it, I think we have a program delivery model that will eventually catch on. We presented the Consortium at a national radiologic science educator's conference that I think will have an impact in the future. Technology has advanced requiring technologists to have a greater knowledge base than they've ever had to have before—it's not just about how to run a piece of equipment anymore. However there has to be a way to financially support educational programs in these technologies and we may have a solution through the Consortium.
>
> MI WORKS! is very excited about the collaborative effort. Out tri-county MI WORKS! director has contacted me about videotaping students and featuring the work of the Consortium in promotional materials.

Program Director III:

> Technology is changing so rapidly that training technologists on-the-job is no longer adequate and not to mention costly for the employer. It's not just training on new technology either. The patient care aspect of training is huge. The chance of injury to a patient or the violation of HIPPA is an enormous liability. It's all changed so much from when I became a tech. many years ago! Patients can be hurt because a technologist didn't understand a theory or have the knowledge to know that more images were required for a diagnosis. [The MiRIS Consortium] allows colleges to offer the deep training necessary for safety to patients and less liability to hospitals.

Program Director IV:

> The education provided through the Consortium raises the level of the profession. It prepares students for decision-making with complex imaging protocols influencing the diagnostic accuracy and that's what's important. We're [the Consortium] is actually improving the profession. We know that radiologists can't do it all, there just aren't enough of them to do all the daily work. There's room for a mid-level practitioner at the doctorate level that can assume some of the load but the gap between an associate degree technologist and the radiologist physician has to be closed and it starts with the community college graduate getting a bachelor's degree that can then lead to graduate school. It starts with the baccalaureate degree completion option through the Consortium for these students. It gets us out of that professional rut of closing the door after the associate degree in radiography. Now with the Consortium, we are offering much, much more than that.

Program Director V:

> It's usually been the better radiographers that go onto be trained in MRI, CT or some of the other advanced areas and so they may be do okay with the training the hospitals offer. I don't want to offend any of the technologist who have learned on the job but I think that they are probably adequately trained and not thoroughly trained like they would have been had they completed an MRI program like ours. Those trained on the job who leave that job may have trouble applying their skills to another facility, equipment and protocols too.

Program Director VI:

> The ACR [American College of Radiology] accreditation requirements for medical facilities providing mammography services are now being imposed upon MRI, CT, and other advanced radiology facilities. One of the requirements is that technologists must be qualified to work in those specialty areas which means hospitals are scrambling to be compliant.

> On-the-job training won't meet the level of qualifications necessary. A personal observation is that the technologist being trained on-the-job is only as good as the technologist training them that day—and that isn't always a good thing.

Document analysis. With the exception of one document, the scope of value provided by the MiRIS Consortium was not readily obvious in any of the documents available for analysis. The document of exception was prepared as a handout for attendees of an event intended to recognize the MiRIS Consortium for their innovative collaboration to deliver high-tech programming. The document (D27) listed a group of prominent speakers that lauded the efforts of the MiRIS Consortium for finding a financially responsible way to offer specialized education to prepare a well-trained workforce for the citizens of Michigan. Among the speakers were two college presidents, a university provost, the president of the Michigan Community College Association, a state senator, a hospital system CEO, the director of the State of Michigan Workforce Development Agency and a graduate of the MiRIS Consortium's MRI program. This impressive list of individuals who spoke so favorably of the efforts of the MiRIS Consortium strongly supports the positive impact the partnership has in serving as a model for replication.

The Research Questions Answered

The research questions addressed by this study were designed to provide an understanding of the structure and functions of the MiRIS Consortium, an intercollegiate partnership of five Michigan community colleges and one state university formed for the purpose shared program delivery. Discovering answers to the research questions was intended to inform the practice of others engaged in or contemplating an intercollegiate partnership by providing a perspective of the impact the MiRIS partnership had on

member organizations, key individuals, and other stakeholder groups. The research answers also served as a reflection for MiRIS partners to strengthen their potential for further success.

The research questions were as follows:

1. What added value does the MiRIS Consortium provide stakeholders?
2. How are administrator and faculty roles impacted by the formation and function of an intercollegiate consortium for the delivery of certificate or degree programs in magnetic resonance imaging?
3. How is organizational culture impacted by the formation and function of an intercollegiate consortium for the delivery of certificate or degree programs in magnetic resonance imaging?

While Chapter 5 provides a thorough discussion of the findings from which the researcher drew conclusions, these final few pages of Chapter 4 address the research questions regarding added value, faculty and administrator roles, and organizational culture.

Research Question 1

What added value does the MiRIS Consortium provide stakeholders?

The research confirmed the far-reaching value the MiRIS Consortium offered institutions, students, individual program directors, employers, and the profession of medical imaging.

Institutions. The MiRIS Consortium model provided a mechanism of added financial capacity for individual institutions to expand their missions of workforce training in programs that offer graduates careers aligning with the federal definition of

high-wage, high-skilled, and high-demand occupations. In addition, the MiRIS institutions have been able to address the issue of educational access and equity for students through the MRI program's online delivery format and shared clinical education opportunities. These features provide students the ability to participate in a rich educational experience regardless of geographical location. The MiRIS model reduces the limitations of students struggling with the boundaries of time and place, expanding the service areas of MiRIS institutions. The Consortium has allowed MiRIS colleges to respond to community needs in a new way by providing a more highly trained medical imaging workforce with implications to the quality of local healthcare and to the social and economic advantages of an educated and employed populace.

Students. Students who participate in the MiRIS program reap the benefits of a comprehensive and structured education in the science of magnetic resonance imaging provided through the shared effort of the six partner institutions. This level of formal education qualifies students to secure a degree or certificate along with a nationally recognized discipline-specific credential enhancing professional status, expanding employment opportunities and increasing earning potential.

Program directors. Not unlike students, program directors have gleaned professional value from their participation with the MiRIS Consortium by learning new skills, developing a broadened network, and earning recognition. As a result, they too have enhanced their professional status and expanded professional opportunity with implications to future goals and aspirations.

Employers. Employers benefit from the MiRIS Consortium's efforts recognized through the elimination of cost associated with on-the-job training for specialty

technologies and through reduced liability associated with safe patient care practices. The ability of MiRIS colleges to offer comprehensive educational programs will allow employers to select from a pool of highly trained and qualified applicants for positions in highly specialized medical imaging technologies.

The profession. The ability of MiRIS colleges to keep pace with the advancements in medical imaging technology by offering degree and certificate programs in the advanced specialties of MRI and others provides value to the medical imaging profession as a whole by raising the standards of technologist education. A degree or certificate in addition to the nationally recognized credential in the discipline of practice raises the bar to the employer-driven, on-the-job training level of educational preparation of the professional technologist.

Research Question 2

> *How are administrator and faculty roles impacted by the formation and function of an intercollegiate consortium for the delivery of certificate or degree programs in magnetic resonance imaging?*

Emerging from the ranks of the program level, participation with the MiRIS Consortium had the greatest impact on the traditional role of the program directors. Of the six program directors, one emerged early on to champion the collaborative vision to fruition, while all six experienced professional growth through an expanded capacity for systems thinking, collaboration, and change leadership.

The champion. Among the program directors was the unofficial and untitled role of a partnership champion, one who provided leadership to the group and kept the work moving forward. The champion assumed the responsibility of garnering the early buy-in of deans and program director peers, served as the catalyst of communication, and took

ownership in doing the work of both large and small scale on behalf of the partnership's success. The champion helped to maintain momentum as the members advanced through the development phase of building the consortial model and through the operational phase of executing the first MRI program.

Professional growth. The program directors, a group of "rad. tech." educators with responsibility for managing and teaching within their individual radiologic technology programs, were charged with operationalizing the MiRIS partnership's MRI program. This required that they step beyond their scope of experience to assume a leadership role within their respective institutions. They worked as intentional leaders in collapsing the historic and competitive educational silos, changing the way people think about collaboration within their colleges. They also were able to shift some very long-standing institutional practices and processes, paving the way for future intercollegiate collaborative efforts. Contributing to the medical imaging profession on a national level, the MiRIS program directors spoke at a national conference sponsored by the Association of Educators in Radiologic and Imaging Sciences held in Atlanta, Georgia, sharing the MiRIS collaborative model with others in the field. Finding solutions, taking risks, and changing the way people think are clearly evidence of change leadership lending to the professional growth of these individuals whose official roles as "rad. tech." educators were challenged as a result of their MiRIS Consortium experience.

Research Question 3

> *How is organizational culture impacted by the formation and function of an intercollegiate consortium for the delivery of certificate or degree programs in magnetic resonance imaging?*

Conners and Smith (2011) provide a very simple definition: "organizational culture is the way people think and act" (p. 7). The research supports that the MiRIS Consortium influenced change in people and in institutions. The depth and breadth of cultural change was significant in areas of collaboration, online teaching and learning, and how the colleges do business. Discussions of competition gave way to discussions of collaboration. The significant doubt and distrust of online learning in health science programs was dispelled, inspiring new online opportunities beyond MRI programming. A new business model emerged around an intercollegiate partnership of shared resources, moving individuals to change long-embedded institutional process and practices to ensure collective success.

Collaborative mindset. The economic reality of offering a degree or certificate program in a highly specialized technology such as MRI inspired a newfound awareness and appreciation for the benefits of collaborative efforts among the deans and program directors of MiRIS colleges to the point of exploring other opportunities for shared programming.

The territorial boundaries have been reduced as partners worked to blend curriculum, faculty, and clinical education opportunities to enrich the learning experience of students and address the educational and economic goals of the neighboring college communities. With the geographical distribution of MiRIS member colleges, the definition of "community" has expanded to the southwest region of lower Michigan, avoiding job market saturation in any one college district while underserving in another. The research reveals a deep sense of pride among members with what they've been able to accomplish through collaborative efforts.

Online teaching and learning. Assumptions surrounding the ineffectiveness of online teaching and learning in health science programs weighed heavily on the MiRIS program directors steeped in the traditional face-to-face, brick-and-mortar delivery of their radiologic technology curriculum content. These assumptions dissipated with the success of the first MRI student cohort. Online learning had been authenticated for these program directors, who at the onset of discussions had expressed rather zealous resistance to online course delivery. Recognizing the value of online flexibility to time-bound and place-bound MRI students, the MiRIS program directors changed or were planning to change the delivery format of content within their radiologic technology programs so that radiography students could realize the convenience of online learning as well. This transformation in mindset of MiRIS program directors was significant, with potential implications to students in all health programs as the message is shared.

New business model. A new business model for program delivery was realized through the MiRIS partnership, changing the way MiRIS colleges did business requiring official approval of each president and of the Higher Learning Commission (HLC). Institutional practices and processes were revised to accommodate the partnership with regard to how revenue and expenses are shared, tracked, and distributed across partner institutions. MiRIS members worked to establish transparent communication practices across the six institutions to ensure inclusion and foster trust in collective decision making and strategic planning for future Consortium program offerings.

CHAPTER 5

CONCLUSIONS AND FUTURE DIRECTIONS

Chapter 4 presented the findings and provided truncated answers to the study's three distinct research questions. This chapter, however, is focused on conclusions and recommendations, as the researcher is given latitude to infer deeper meaning. With respect to full disclosure, it is again important to reiterate that the researcher is the Dean of Career and Occupational Education for the Michigan Radiologic and Imaging Science (MiRIS) Consortium's fiscal agent, Kellogg Community College, and a former radiography program director with significant past experience as a practicing radiologic technologist. Strategies to restrict bias were practiced with due diligence using various methods, as described in Chapter 3, to ensure the study's authenticity and validity, given the researcher's history of active engagement with the MiRIS partnership.

While it was with intention and purpose that the researcher has remained removed from the study thus far, Yin (2009) stated that prior experience and a deep knowledge of the case study can strengthen analysis. The researcher's deep knowledge and prior experience with the MiRIS Consortium contributes to the impressions shared in this chapter with regard to interpretation, conclusions, and recommendations.

Significance of the Study

A former practicing radiologic technologist and radiologic science educator in community colleges, the researcher had a personal interest in conducting a study of the MiRIS Consortium, realizing that the model could serve as a potential solution to a plethora of challenges related to offering highly specialized low-capacity programs. By documenting the MiRIS Consortium's organizational structure and the personal accounts of member experiences, the potential to inform practice for replication is realized.

Medical imaging technology has undergone rapid evolution, while medical imaging education has not. The new and emerging technologies require technologists to possess a deep understanding of human pathophysiology and superior proficiency in operating highly specialized equipment, neither of which can be acquired through completion of a radiography program or achieved through an on-the-job approach to training. These advanced technologies require high-level critical thinking capability as technologist decisions and actions with regard to image acquisition and processing can have critical implications to patient diagnosis. The employer-driven process of selecting staff radiographers to engage in on-the-job training of new and sophisticated technologies provides a limited scope of preparation, yet employers have had little alternative, as comprehensive programs have been cost-prohibitive for local community colleges to offer.

The financial challenge for community colleges is derived from the limited scope of clinical education and subsequent employment opportunities for highly specialized careers within a single community college service district, lending to an inevitable low enrollment capacity. There are only so many MRI scanners and technologist jobs in any

one given community. To be economically viable, a college would need to enroll many more students than the local MRI market could bear. The same is true for CT, mammography, cardiac interventional imaging, or the host of other advanced imaging technologies. The combined efforts of the MiRIS Consortium member institutions reduce barriers to offering programs in advance imaging technologies through innovative collaboration and shared resources.

Aligning with the findings and research questions, the conclusions of this study address five areas: (a) the partnership provided a new way of doing business, (b) the financial process was complex and critical, (c) interpersonal relationships were powerful, (d) the champion role of leadership prevailed, and (e) the partnership's work resulted in unanticipated value.

Conclusion 1

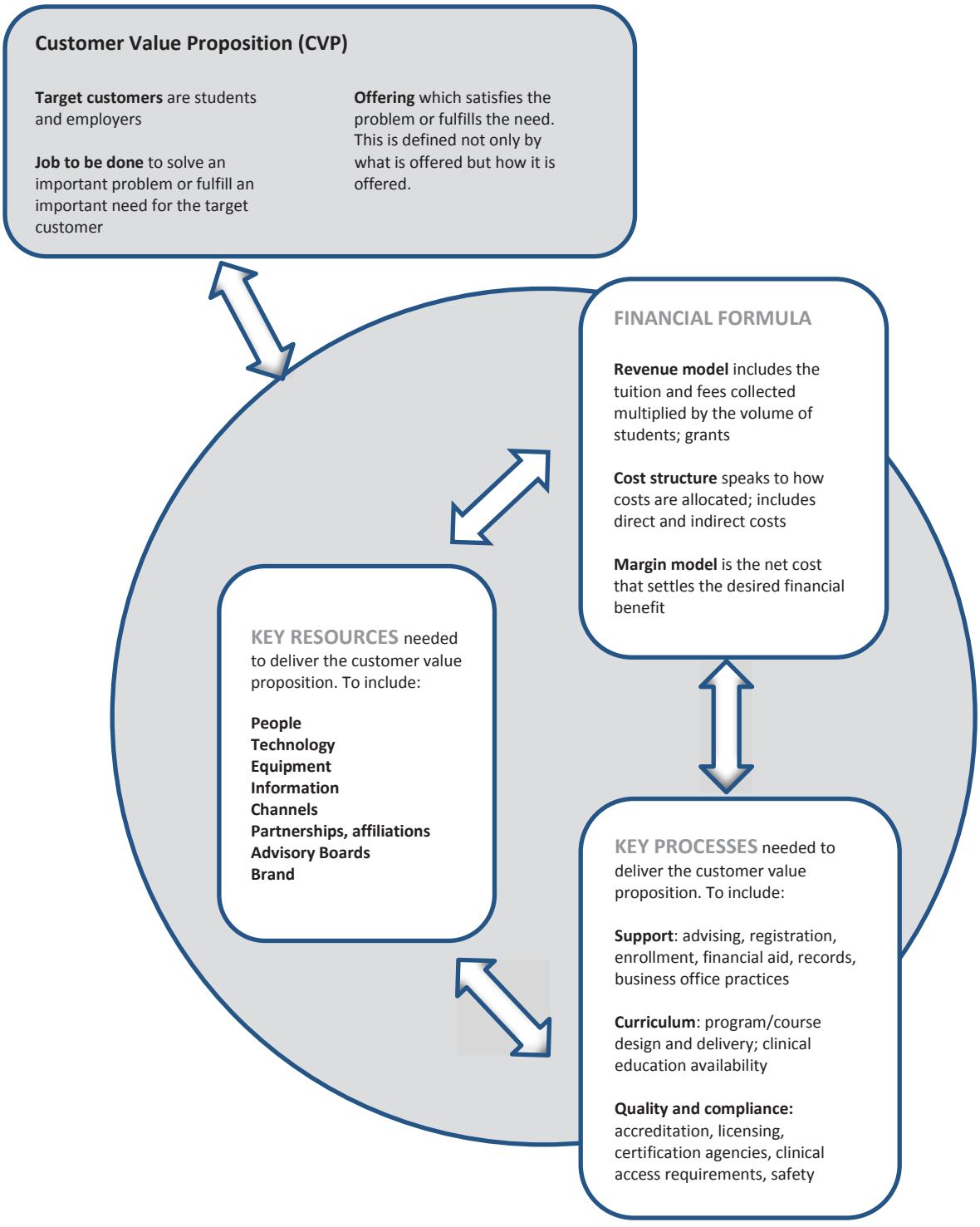
A business model. The MiRIS Consortium provided colleges a new way of doing business and, as a result, organizational change occurred as the administrators, faculty, and staff of each MiRIS college realized the capacity-building potential of an intercollegiate collaboration and developed a willingness to build a business model that would accommodate the collective partnership.

The term "business model" is considered inappropriate to some who are uncomfortable with applying business concepts to public education. However, the MiRIS Consortium is by definition a business model serving as an administrative structure within which to offer academic programs providing value to students and employers as the target customers.

A business model, as described by Johnson, Christensen, and Kagermann (2008), "consists of four interlocking elements that, taken together, create and deliver value" (p. 52). They define the four elements as (a) customer value proposition, (b) profit formula, (c) key resources, and (d) key processes.

In the case of the MiRIS Consortium model, customer value proposition is realized through what is of value to students and employers. A comprehensive educational program in MRI translates into sustainable employment in a high-skilled, well-paying career for students and a reduction of on-the-job training costs and liability risk for employers.

The profit formula defined by Johnson et al. (2008) as the second element of a business model can be found in the MiRIS financial process of sharing revenue and cost between partner institutions. While the "profit" dimension remains elusive in the MiRIS model, given the non-profit status of state funded institutions, the formula does include how revenue is captured and costs are compensated so that the partnership can remain financially viable to deliver the customer value proposition. Key resources, the third element of a business model for the MiRIS partnership, include the people, technology, equipment, information, channels, and affiliations and other resources that are necessary to deliver the value, while the key processes, the fourth and final element, include services, curriculum, and those related to quality and compliance. The MiRIS model touched every one of the four elements, inspiring change in the way the partner institutions did business and in the way individuals did their jobs. Figure 2 provides an illustration of the MiRIS business model adapted from the Johnson, Christensen, and Kagermann (2008) for-profit model.



Adapted from Johnson, Christensen, and Kagermann (2008)

Figure 2. The Elements of a Successful Business Model

From the onset of the partnership, MiRIS members have had plans to expand Consortium offerings. They are considering customer value proposition by weighing industry needs and student interest in computed tomography (CT), cardiac interventional, vascular interventional, mammography, picture archiving communications system (PACS), and other technologies. However, not unlike decisions made in other business models, the MiRIS partners intend to make informed decisions on how and when to expand their enterprise to include programs in other advanced imaging disciplines.

Conclusion 2

The financial process. Establishing a sound financial process was pivotal as to whether the Consortium would be established and the most critical factor for sustainability. Developing the financial process was all-consuming in the early work of the members. It was central to discussions as members strived to understand what eventually came to be a complicated two-tiered process of reconciliation. The first tier of reconciliation was completed by the MCCVLC, and the second tier by the MiRIS Consortium's fiscal agent. Complicating it further was the fact that each college measured the financial viability of academic programs differently, and so expectations varied as to how they defined "financially reasonable" in support of the MRI program.

The members of the MiRIS Consortium perceived the partnership as a financial means to an educational end. Some of the MiRIS colleges had made prior attempts to establish advanced imaging programs as an appendage to their radiography programs, while others had remained still. At the time collaborative discussions between the six colleges began, none of the institutions had experienced any volume of consistent long-term success with their efforts.

An ongoing and often repeated theme by members was "this makes sense . . . it's the right thing to do." Sharing resources is a fiscally responsible solution to a decline in funding of Michigan colleges, the result of decreased state allocations and falling property taxes. Members recognized the capacity-building potential the Consortium afforded their individual colleges and expressed an unwavering and enthusiastic sense of pride, as other Michigan community colleges inquired about joining the group.

As revealed through the research, establishing a transparent and equitable financial model was essential to Consortium members, and it begins with enrollment. Each of the six Consortium colleges assumes financial responsibility for four enrollments in MRI courses, equating to a full enrollment of 24 MRI students. All revenue and expenses are shared equally between the six colleges. The fiscal agent institution assumes responsibility of performing the year-end financial reconciliation. The following steps describe the registration to reconciliation process:

- One of the five community colleges assumes responsibility for "providing" one or more of the shared MRI courses through the Michigan Community College Virtual Learning Collaborative (MCCVLC). Serving as a course provider is voluntary. The provider is responsible to assure the course is ready and available on the MCCVLC for registration, and is responsible for facilitating the hire of an instructor to teach the course.
- All MRI students register for the course through the MCCVLC at the current MCCVLC tuition rate. The tuition is paid by the student to the provider college.

- At the end of each semester, the MCCVLC executes their reconciliation process. This involves invoicing the provider college for 10% of the tuition, which is retained by the MCCVLC as a service fee, and 20% of the tuition paid by students from other "home" colleges. A home college is declared by the student upon registration for the course. It is usually the college within the district where the student resides. The MCCVLC then distributes the 20% to the home college. The provider college is in possession of 70% of the tuition paid by students from other home colleges, and 90% of the tuition paid by their own students.
- The MCCVLC sends a report detailing these transactions to the fiscal agent. The tuition that each college is in possession of, whether as a provider college or a home college, belongs to the Consortium and is captured in the year-end fiscal reconciliation.
- At the end of the fiscal year, the colleges that have served as course providers invoice the MiRIS Consortium for costs associated with hiring instructors.
- The fiscal agent, also serving as the employer of the educational coordinator, invoices the Consortium for salary and benefit costs.
- The Consortium is invoiced for other costs incurred by colleges. These may be expenses associated with accreditation, course development, the fiscal agent fee, and other expenses pre-approved by Consortium members.
- Total tuition revenue and program cost are reckoned by the fiscal agent and year-end statements are distributed.

Figure 3 provides a summary of the rather complex financial process that occurs each fiscal year.

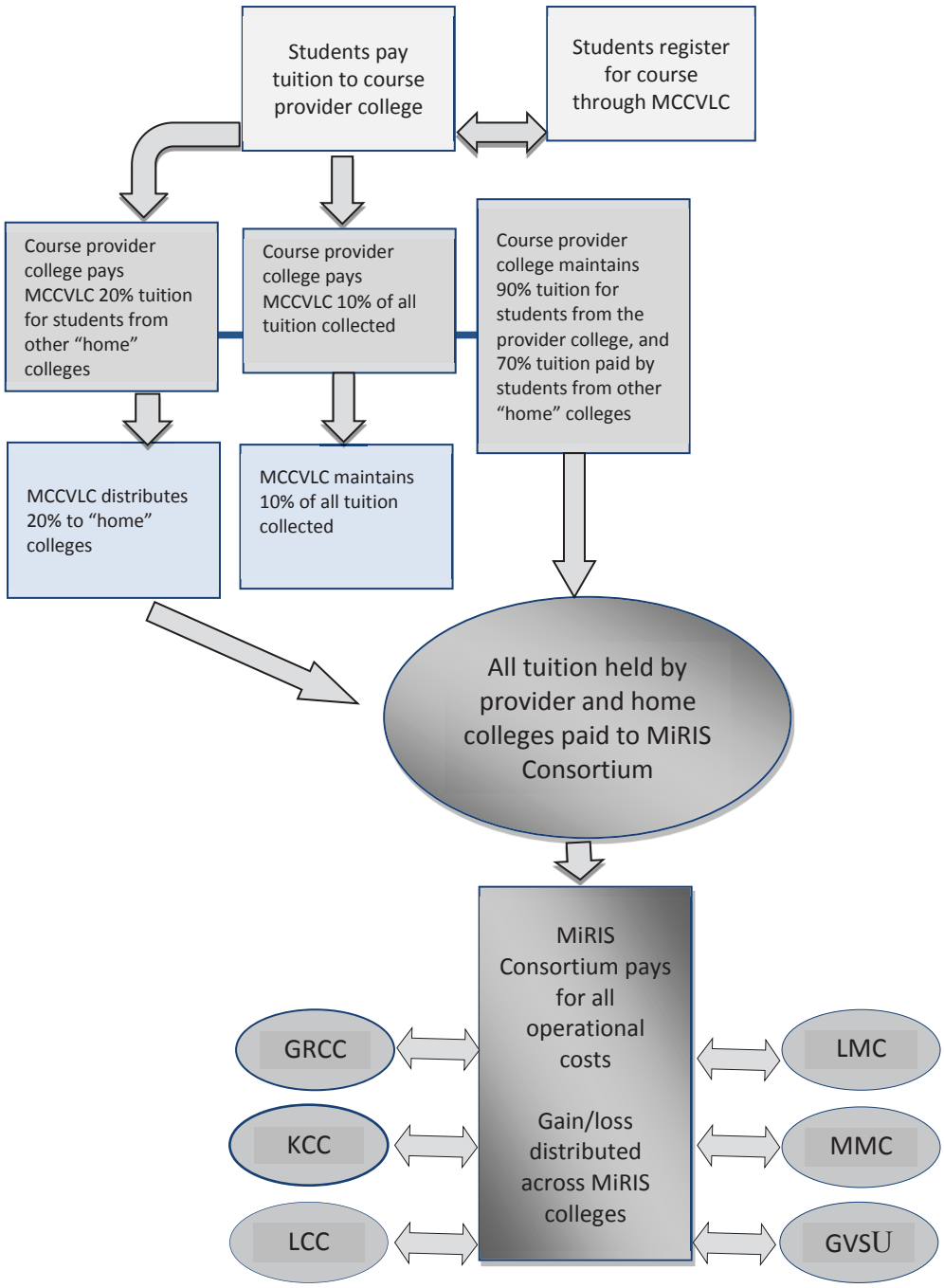


Figure 3. Financial Flowchart

While mention of the financial process transcended across both the program director and dean levels during the study's in-depth interviews, program directors spoke of budgetary concerns far more than the deans. Their comments implied a lack of understanding of the MiRIS financial process, the cost of health-related occupational programs, and how colleges are funded. One director spoke about radiography programs "making money" for colleges, with the expectation that the MiRIS Consortium's MRI program should "make money" or at least "break even." Another director spoke of the financial inequality between MiRIS colleges, implying that the colleges not serving as a provider of the shared MRI courses were at a financial disadvantage. This director continued with expressing an uncertainty of fairness to the community colleges, given that Grand Valley State University students are required to pay higher tuition, while GVSU remained an equal financial partner. The comments made by the program directors suggests a lack of understanding of the reality of program costs levied against revenue and a level of doubt associated with the MiRIS financial process. Given the group had just completed the first fiscal year and had not yet fully worked through the first reconciliation process at the time of the interviews, the fiscal uncertainty among program directors may subside with time, experience, and more discussion.

Conclusion 3

Relationships. While existing relationships provided a foundation of professional respect and trust upon which to build the MiRIS partnership, the group was not exempt of challenges as they worked together at a more granular level. They moved from a position of friendly competition to trying to align for the purpose of shared outcomes. There were times of tension as a group of experienced and passionate individuals with various skill-

sets worked together to blend their ideas and determine a set of collective priorities. That being said, it was the foundational trust and respect that allowed the members to confront issues and remain committed.

Each of the six programs directors were professionally acquainted with all, if not most, of the other program directors when discussions of collaboration began. This familiarity was the basis from which colleges first came together. The interview research confirms that the relationships between program directors grounded the group and allowed them to successfully work through differences.

Several of the deans and vice presidents representing the six institutions were also acquainted at the onset of the consortium discussions as were the presidents, especially those actively affiliated with the Michigan Community College Association (MCCA).

To appreciate how the ebb and flow of social interactions and relationship dynamics influenced the partnership, it is important to understand the stages in which the MiRIS Consortium progressed and the roles the program directors and deans assumed.

The program directors served as the catalyst for the MiRIS Consortium. The idea of a collaborative effort was initiated at the program director level and evolved into a business model at the dean and vice president level. Upon acceptance of the formal MiRIS Consortium Agreement, and the receipt of HLC approval, the deans stepped back while the program directors remained fully engaged to operationalize the work. In other words, once the Consortium structure was built, the program directors used the framework to design and deliver an MRI program as the deans supported from a distance.

The initial dialog responsible for eventually launching the partnership started between two program directors of neighboring colleges, one of whom expressed

interested in sharing MRI curriculum and instruction. Believing there may be opportunity for a more comprehensive collaboration, they involved their deans and a vice president to help them explore the potential for a partnership. The vice president was invited to the conversation because of his experiences with a previous Michigan community college partnership that had dissolved, and a university partnership that had thrived. The group decided to expand the conversations to include more colleges, with the two program directors identifying program directors from four other colleges. Essentially, they called upon their friendly counterparts from four neighboring institutions, people they knew and trusted. The fact that the geographic locations of the six colleges collectively represented the lower southwest Michigan region was ancillary to the consideration of which colleges should be invited to the table. Initial skepticism from the four invited program directors was readily apparent, manifesting with a plethora of questions and concerns from both the directors and their deans. However, discussions advanced between program directors, deans, and the lone community college vice president. Meetings, emails, and phone calls continued from April 2009 until December 2010, when the business model was finalized and the formal MiRIS Consortium Agreement (Appendix A) was executed.

In concert with the work occurring to establish the business model, the six program directors were meeting separately to develop the shared MRI program that would concurrently serve the community college students at the 200 level, and Grand Valley State University students at the 300-400 level. With significant negotiation and compromise, curriculum was developed and processes and procedures were drafted. At the same time, discussions ensued with the Joint Review Committee on Education in

Radiologic Technology (JRCERT) to ensure programmatic accreditation would be possible for an MRI program delivered through an intercollegiate consortial model.

Challenges. The interview participants for the study spoke very favorably of the group dynamics. They frequently mentioned an appreciation for the mutual trust that helped them work through numerous differences, challenges, and misunderstandings. Each program director had experience with managing his/her individual radiography programs within the confines of his/her college's policies and procedures and was very comfortable with a traditional face-to-face delivery model. However, participation in the Consortium required the program directors to think differently, to step into the unknown and release many of the long-held assumptions and beliefs about how things must be done. This change in mindset was often uncomfortable, creating tension, frustration, doubt, and even anger between members of the group. Both interviews and documents exposed some of the primary challenges that were discussed in some rather spirited, yet respectful, meetings of the group. These include:

- Uncertainty of the effectiveness of online learning.
- Inexperience with the processes and policies of the MCCVLC.
- Long-standing competition over clinical affiliations.
- Difference of opinion over program and course design.
- Concern for curriculum gaps, overlaps, and level of rigor.
- Frustration with understanding the financial model questioning equity and fairness.
- Frustration with trying to align the collective policies and procedures of the Consortium with individual college policies and procedures.

- Gaining buy-in and cooperation of individual college curriculum committees, registrars, business offices, and other ancillary departments and individuals.
- Abrupt changes when it was discovered that something had been overlooked or wouldn't work.
- Change in program director roles and responsibilities due to internal promotions.
- Ill-defined roles, responsibilities, and authority of program director leadership.
- The unknown.

That being said, the program directors expressed a genuine sense of pride that they were able to stay focused, keep differences in perspective, and work through the various issues that presented. Several also mentioned an appreciation they had for the opportunity to learn from their colleagues, finding the entire experience worthy of their efforts despite the challenges they had encountered.

Conclusion 4

Leadership. The role of the champion was pivotal in providing leadership and in facilitating the work necessary for the MiRIS Consortium's success. The champion role emerged early on in the formation of the partnership at three levels: the partnership level, the institutional level, and the MRI program level.

***The partnership champion*.** As revealed through a chain of document evidence, one of the program directors emerged early on, before the Consortium had really been formed, to assume the role of the partnership champion, albeit the position was undefined, unofficial, and untitled. The champion assumed the responsibility not because others were incapable or unwilling, but because this particular individual felt a deep

passion for the vision and a sense of personal obligation to the colleagues that had been invited to the group. This person's passion was so palpable that encouraging buy-in and inspiring a shared vision came very naturally, but accompanying it was a feeling of duty. Because the champion had brought the others along, inspiring the vision, there was a self-imposed sense of responsibility to assume many work tasks, both large and small, to avoid inflicting burden on fellow members that could lessen their commitment. As a result, this person undoubtedly assumed what could be argued to be the champion role.

The institutional champions. While the document research clearly identified a champion of the collaborative partnership, each of the program directors certainly assumed the role of a champion within their individual institutions to advance the MiRIS effort. Each director worked diligently within their college to (a) create the vision, (b) guide processes, (c) ensure buy-in, (d) communicate goals, and (e) generate and maintain a high level of commitment.

The researcher observed that champions within the MiRIS Consortium presented for different purposes, at different times, and at different levels. There was the partnership champion who facilitated work on behalf of the collective group of colleges and, as previously described, emerged very early on out of a deep passion and sense of obligation. There were individual institutional champions—the program directors who willingly assumed the role because of their personal desire to participate and their knowledge of the work to be done within their individual colleges necessary to align with the partnership. And then there was a hired champion responsible for the MRI program curriculum and student success.

Buy-in. The champions at all levels faced resistance, sometimes with each other. Probably the greatest challenge faced by all champions was "buy-in," answering the question of "why should we?" Securing buy-in from each program director and each dean was the mission of the partnership champion from the very initial meeting of the colleges. To move the more skeptical directors and deans, the champion's efforts continued over a significant period of time. The institutional champions encountered the "why should we" challenge many times across all divisions and levels of their respective colleges. The hired champion was faced with garnering buy-in from some anxious program directors that were hesitant to trust the shared program model and surrender curriculum, instructor, and student success issues. Buy-in conversations were not a singular event on the part of any champion, but rather occurred many times over and could be described as an ongoing labor of persuasion.

Qualifications. Clearly, the champion role was key to facilitating the MiRIS effort at the partnership level, the individual institution level, and the program level. Not necessarily positional, an effective champion must possess an unwavering passion, a deep knowledge of the work, the ability to inspire others, and a sizable amount of social and organizational capital. When any of these champion qualities are absent or even weak, effectiveness can be hampered. All the MiRIS champions, whether at the partnership level, the institutional level, or the program level, were from program ranks, which lends credibility to the fact that a champion need not hold an executive level leadership position to be effective.

Leadership at other levels. While the leadership role of a champion emerged as a predominant finding, several interview participants spoke of the importance of senior

leadership. They gave testimony to the support demonstrated by their president and vice president or provost in ensuring the allocation of resources and in supporting organizational change to accommodate the new partnership. Some elaborated further on the inclusion of MCCA as a source of support and leadership from a regional and state perspective.

Leadership in practice. An important conclusion related to this finding is that while two levels of leadership were actively practiced within the partnership, the formal MiRIS Consortium Agreement (Appendix A) does not clearly reflective this practice. The formal agreement does outline what is referred to as a "Consortium Council"; however, the scope of this group's authority and responsibility is not clearly defined, leaving some members to make assumptions and others to experience a sense of ambiguity and frustration. Observations supported leadership responsibility at the administrative dean level when it concerned issues that impacted the MiRIS Consortium—the business model, with leadership responsibility at the program director level when it concerned issues of the MRI program. The Consortium Council membership consists of the six program directors and one dean, when in practice all six deans are engaged with decisions that affect the Consortium, leaving program decisions to the directors. It would be in the best interest of all members if leadership roles and responsibilities were clearly defined and documented. Figure 4 illustrates the leadership model in practice by the MiRIS Consortium members.

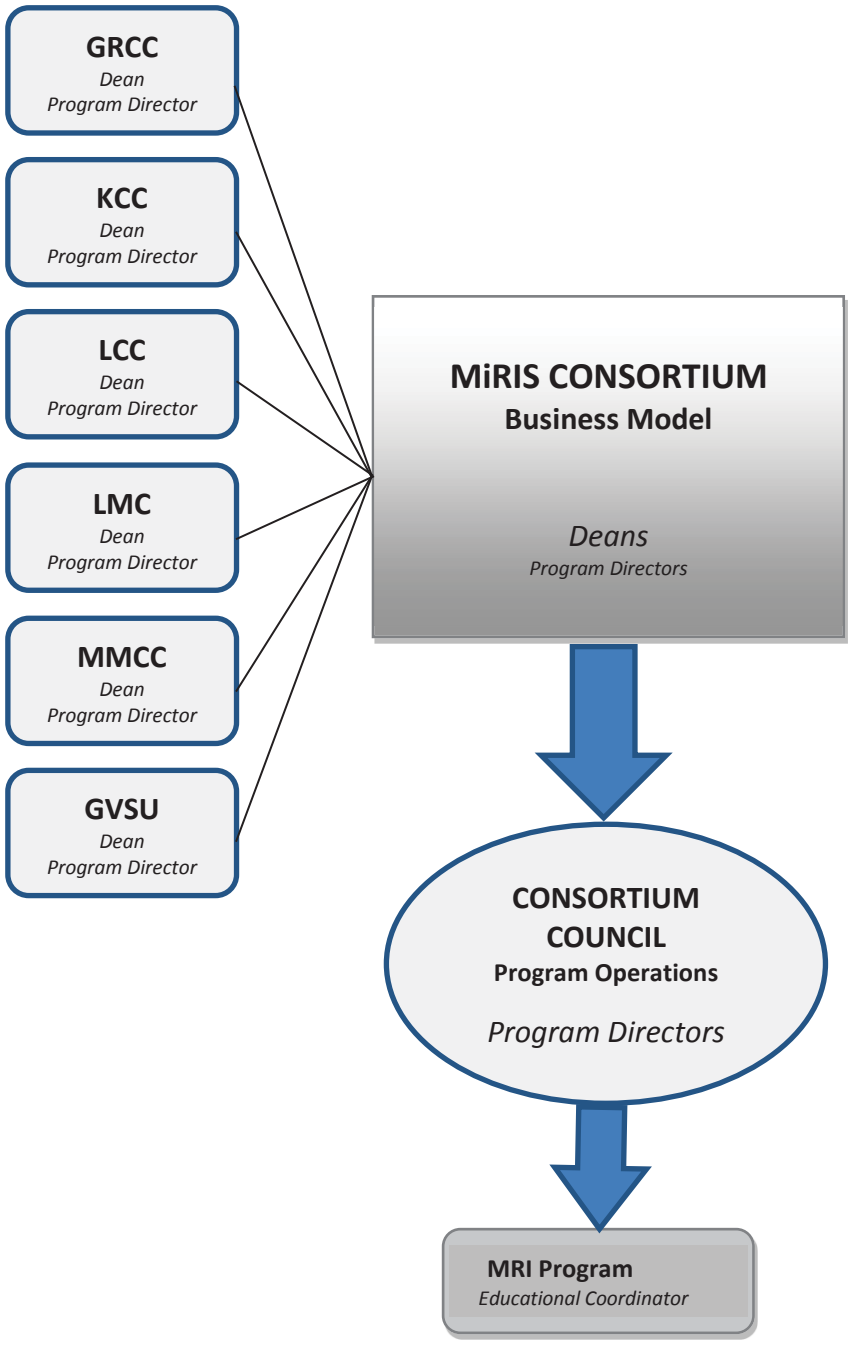


Figure 4. MiRIS Consortium Leadership in Practice

Conclusion 5

Value. The MiRIS Consortium generated unanticipated value beyond that of the initial and common expectations.

Initial expectations. Program directors knew that if the MiRIS Consortium MRI program came to fruition, students, employers, and patients would benefit. As individual directors, they had long been interested in expanding their college's offerings in medical imaging to align with advancements in the field of radiologic technology, yet they struggled to find a financially viable way to proceed. When discussions began about a collaborative MRI program, the program directors were enthusiastic, knowing there would be value students, employers, and patients. Program directors hoped that shared programming might provide a way for their individual colleges to offer their local students the ability to acquire comprehensive training in MRI technology that would lead to desirable job opportunities.

For years, the program directors had observed the profession's expansion into advanced technologies and on occasion had been confronted with student and employer questions as to when programming would be made available. In recent years, the program directors had also witnessed new graduates from their individual radiologic technology programs struggle to find full-time employment due to a decline in the job market; however, they were fully aware of the U.S. Department of Labor predictions of a higher-than-average market growth for radiologic technologists holding added credentials in an advanced technology such as MRI. The MiRIS MRI program offered an option for new radiologic science graduates to obtain an advanced credential, rendering them more marketable, and it also provided a rich applicant pool from which employers could select

and hire fully trained and qualified MRI technologists. And because the program directors were former practicing technologists, they were acutely aware that a comprehensive educational program in MRI would have positive implications to safe patient care. They recognized that the solid skill set and critical thinking capacity of a highly qualified technologist greatly contribute to good judgment and sound decision making with regard to patient well-being.

Added value: Educational quality and equity. The partnership's business model of sharing of resource removed the financial barrier to colleges, allowing them to collectively offer programs that would prove financially difficult for any one college to do in a silo. The partnership not only provided a mechanism from which to offer an MRI program, but it also provided a model from which other programs could be offered as well in areas such as CT, mammography, cardiac interventional, and others. The MiRIS Consortium broke through the barriers of traditional competitive and duplicate efforts to shared curriculum, pooled faculty, and mutual clinical education affiliations.

While sharing curriculum and faculty have obvious financial advantages, educational quality and equity were impacted as well. A key feature of the Consortium is the ability for students to be assigned to any of the more than 20 MRI service providers that have affiliations with MiRIS colleges, providing an equal and enriched educational opportunity for all MiRIS students regardless of their geographic location. This is especially important for the students from the more rural college districts, as they too have the opportunity to learn in large metropolitan hospital settings where cutting-edge imaging procedures are commonplace.

The online delivery format of didactic courses just further enhances the quality and equity of student learning by, again, increasing student access regardless of geographic location. The online design was intended to foster a learning community that assembled a broad spectrum of students from various locations in Michigan to share differing clinical education experiences from the many clinical locations around the state, thus expanding the students' professional network and learning capacity.

Added value: Professional growth. The value of an expanded network and learning capacity was not restricted to MRI students, as program directors reported they too had experienced growth in both areas, resulting in changes to their professional practice. A major change occurred with the program directors' perception of online learning, having reported a newfound confidence in the viability of online learning and, in some ways, even the supremacy over a traditional face-to-face delivery format. In addition, the program directors recognized the value of the online delivery with regard to access, equity, and the ability to expand learning opportunity for students by exchanging experiences beyond one college community.

The program directors also realized added value by way of recognition. Because they assumed the role of champion within their individual colleges to drive the MiRIS initiative, they caught the attention of others and, for some, this led to promotions and new relationships within their colleges. They also served as role models within the state's network of community college radiologic technology programs, as other directors sought them out to inquire about the MiRIS model. Collectively, the group was recognized with an award as an Outstanding Educating Team from the Michigan Occupational Dean's

Administrative Council (MODAC) for their innovative and collaborative approach to program delivery.

Added value: Model replication. While some partners had expressed optimism that the MiRIS Consortium may serve as a model for others to replicate, this was not the founding purpose or motivation for establishing the partnership. That being said, the Consortium did generate attention from other Michigan community colleges, as four institutions inquired about joining the MiRIS membership. Another group of colleges with an interest in forming a partnership around information technology questioned members about the MiRIS structure, while three of the MiRIS colleges had conversations about a shared program outside of medical imaging in the therapeutic sciences.

The ability of these colleges to leverage intercollegiate partnerships to meet economic and educational goals aligns well with the direction of federal policy makers, especially as they position to re-authorize the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins Act). According to the U.S. Department of Education Office of Vocational and Adult Education (2012), the proposal for re-authorization emphasizes four principles: (a) alignment, (b) collaboration, (c) accountability, and (d) innovation. While the Perkins Act of 2006 encourages these principles to some degree, the re-authorization proposal raises the bar substantially in requiring the alignment of educational programming to labor-market needs, the collaboration of educational institutions with business and industry, the accountability for improving academic outcomes, and the development and implementation of innovative models, strategies, and approaches to career and technical education. The proposal further suggests that funding would be allocated to regions within the states, rather than at local

levels. Given that the MiRIS Consortium was established in 2010 and the Perkins Act re-authorization proposal was published in 2012, the Consortium addressed these federal priorities without intent. However, should the Perkins Act be re-authorized as proposed, the MiRIS model will be of even greater value for replication by others.

Recommendations

For Practice

1. To ensure a solid foundation upon which to build a successful partnership, choosing members should be done with deliberate intention. Character and competence should be considered in the decision, with each partner's contribution clearly defined.
2. Having implications for effective leadership, it is important that members recognize the MiRIS Consortium as a business model, an administrative structure distinct from the MRI program. The leadership skill set, knowledge base, and organizational capital necessary to develop and lead a business model are different from those required to manage an educational program.
3. To clarify and define leadership roles, responsibilities, and scope of authority, the formal intercollegiate agreement should reflect the terms and conditions of the partnership's business model only. Leadership, terms, and conditions of each educational program offering should be outlined in separate addendums to the formal partnership agreement. As previously stated, the leadership necessary for a business model differs from that required to manage an educational program so, therefore, it would be best to keep the business model distinct from the MRI program in the formal partnership agreement. The

current MiRIS Consortium Agreement (Appendix A) blurs the lines of leadership and authority of the business model and of the MRI program, which has led to the confusion and frustration of some members.

4. In addition to the formal leadership structure, a champion should be identified and supported to facilitate the work to be done. Members should develop a strategy to reduce reliance on the champion over time so that the initiative becomes embedded to avoid collapse should the champion leave the partnership.
5. While partners may share a common broad vision, more granular level goals, timelines, and measures of success should be discussed and documented to ensure that all partners share expected outcomes.

Recommendations for Future Research

1. Given the MiRIS Consortium had just graduated its first cohort of students and completed its first fiscal year at the time of this study, a follow-up investigation of this partnership should be conducted to further learn from its experiences with the business model and growth strategies.
2. Expanding the participants to include student and employer perceptions would also serve to provide value as an extension to this study.
3. A comparative analysis of MiRIS student learning outcomes to those of traditional face-to-face programs administered by one institution would provide insight to the success of the MiRIS Consortium model.

Final Reflection

This study emerged from a personal passion of the researcher, who saw the practicality and value of sharing resources to design, develop, and sustain quality educational programming in the advanced medical imaging technologies with a potential application to other disciplines. Having been engaged in community college education, first as a student and eventually as a dean with a 14-year career as a practicing radiologic technologist in between, the researcher realized the ability of community colleges to change lives, not only the lives of students, but the lives of the patients they serve. In 2010 at the onset of this study, federal and state funding of postsecondary education was declining, while technological advancements had resulted in the demand for a higher skilled workforce in need of postsecondary education. The MiRIS business model addressed these challenges, and although it was in its infancy, the researcher took a risk in studying the evolution of this new partnership in hopes it would come to fruition as a model worthy of replication so that lives could be changed.

And while it may be too soon to determine the enduring success and extended influence of the MiRIS Consortium, the study was certainly an interesting and worthwhile undertaking for this researcher.

REFERENCES

American Association of Community Colleges. (2005). *Competencies for community college leaders.* Retrieved March 10, 2012, from http://www.aacc.nche.edu/Resources/competencies/Documents/competenciesforleaders.pdf

American Registry of Radiologic Technologists. (2012a). *Primary and post-primary certification requirements.* Retrieved July 29, 2012, from https://www.arrt.org/Certification

American Registry of Radiologic Technologists. (2012b). State licensure. Retrieved July 29, 2012, from https://www.arrt.org/State-Licensing/

American Registry of Radiologic Technologists. (2012c). *Continuing education*. Retrieved July 29, 2012, from https://www.arrt.org/pdfs/Governing-Documents/Continuing-Education-Requirements.pdf

American Society of Radiologic Technologists. (2012). *Explore careers in radiologic technology*. Retrieved May 2012, from https://www.asrt.org/main/careers/careers-in-radiologic-technology/explore-careers

Amey, M. (2007, Fall). *Collaborations across educational sectors. New Directions for Community Colleges, 2007*(139), 5-13. doi:10.1002/cc.288

Amey, M. (2010, Spring). Leading partnerships: Competencies for collaboration. In D. Wallin (Ed.), *Leadership in an era of change. New Directions for Community Colleges, 2010*(149)*,* 13-23. doi:10.1002/cc.391

Amey, M., & Brown, D. (2004). *Breaking out of the box: Interdisciplinary collaboration and faculty work*. Greenwich, CT: Information Age.

Amey, M., Eddy, P., & Ozaki, C. (2007, Fall). Demands for partnerships and collaboration in higher education: A model. In M. Amey (Ed.), *Collaborations across educational sectors. New Directions for Community Colleges, 2007*(139), 5-13. doi:10.1002/cc.288

Amey, M., Eddy, P., & Campbell, T. (2010). Crossing boundaries creating community college partnerships to promote educational transitions. *Community College Review, 37*(4), 333-347.

Baum, H. (2000). Fantasies and realities in university-community partnerships. *Journal of Planning Education and Research, 20*(2), 234-246. doi:10.1177/073945X0002000208

Bloomberg, L., & Volpe, M. (2008). *Completing your qualitative dissertation: A roadmap from beginning to end*. Thousand Oaks, CA: Sage.

Bracken, S. (2007, Fall). The importance of language, context, and communication as components of successful partnerships. In M. Amey (Ed.), *Collaborations across educational sectors. New Directions for Community Colleges, 2007*(139), 41-47. doi:10.1002/cc.291

Bragg, D., & Russman, M. (2007, Fall). The legislative playing field: How public policy influences collaboration. In M. Amey (Ed.), *Collaborations across educational sectors. New Directions for Community Colleges, 2007*(139), 93-103. doi:10.1002/cc.296

Buettner, D., Morrison, M., & Wasicek, M. (2002, Fall). Successful experiences with making partnering an operational strategy. In M. Spangler (Ed.), *Developing successful partnerships with business and the community. New Directions for Community Colleges, 2002*(119), 5-12. doi:10.1002/cc.72

Bureau of Labor Statistics, U.S. Department of Labor. (2012). *Occupational outlook handbook: Radiologic technologists.* Retrieved October 12, 2012, from http://www.bls.gov/ooh/healthcare/radiologic-technologists.htm

Bynum, L. (2002, Fall). The Alameda Corridor Industry & College Collaborative. In M. Spangler (Ed.), *Developing successful partnerships with business and the community. New Directions for Community Colleges, 2002*(119), 47-58. San Francisco, CA: Jossey-Bass.

Cameron, K., & Quinn, R. (2006). *Diagnosing and changing organizational culture* (Rev. ed.). San Francisco, CA: Jossey-Bass.

Casey, M. (2008). Partnership: Success factors of interorganizational relationships. *Journal of Nursing Management, 16*, 72-83.

Cloud, R. (2010). Epilogue: Change leadership and leadership development. In D. Wallin (Ed.), *Leadership in an era of change. New Directions for Community Colleges. Special Issue: Leadership in an Era of Change, 2010*(149), 73-79. doi:10.1002/cc.398

Collins, J. (2001). *Good to great: Why some companies make the leap . . . and others don't*. New York, NY: HarperCollins.

Collins, J. (2005). *Good to great and the social sectors: Why business thinking is not the answer*. New York, NY: HarperCollins.

Connors, T., & Smith, T. (2011). *Change the culture, change the game: The breakthrough strategy for energizing your organization and creating accountability for results.* New York, NY: The Penguin Group.

Covey, S. (2004). *The 7 habits of highly effective people: Powerful lessons in personal change*. New York, NY: Free Press.

Covey, S. (2006). *The speed of trust: The one thing that changes everything*. New York, NY: Free Press.

Covey, S. (2011). *The 3rd alternative: Solving life's most difficult problems*. New York, NY: Free Press.

Covey, S., & Link, G. (2012). *Smart trust: Creating prosperity, energy, and joy in a low-trust world*. New York, NY: Free Press.

Creswell, J. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage.

Deering, A., & Murphy, A. (2003). *The partnering imperative: Making business partnerships work*. West Sussex, England: John Wiley & Sons.

Easwar, I. (2003). Theory of alliances: Partnership and partner characteristics. *Journal of Nonprofit & Public Sector Marketing, 11*(1), 41-57.

Eddy, P. (2007, Fall). Alliances among community colleges: Odd bedfellows or lasting partners? In M. Amey (Ed.), *Collaborations across educational sectors. New Directions for Community Colleges, 2007*(139), 59-68. doi:10.1002/cc.293

Eddy, P. (2010). *Partnerships and collaborations in higher education.* In K. Ward & L. Wolf-Wendel, Eds., *ASHE Higher Education Report, 36*(2). San Francisco, CA: Jossey-Bass.

Eisner, M. (2010). *Working together: Why great partnerships succeed*. New York, NY: HarperCollins.

Fain, P. (2012). Tuition model quietly spreading. *Inside Higher Education.* Retrieved July 9, 12, from http://www.insidehighered.com/news/2012/04/09/differential-tuition-grows-popularity-even-community-colleges

Farrell, P., & Seifert, K. (2007, Fall). Lessons learned from a dual-enrollment partnership. In M. Amey (Ed.), *Collaborations across educational sectors. New Directions for Community Colleges, 2007*(139), 69-77. doi:10.1002/cc.294

Feltman, C. (2009). *The thin book of trust: The essential primer for building trust at work*. Bend, OR: Thin Book.

Gage, D. (2004). *The partnership charter: How to start out right with your new business partnership, or fix the one you're in.* New York, NY: Basic Books.

Garza, H., & Eller, R. (1998). The role of rural community colleges in expanding access and economic development. In D. McGrath (Ed.), *Creating and benefiting from institutional collaboration: Models for success. New Directions for Community Colleges, 1998*(103), 31-42. San Francisco, CA: Jossey-Bass.

Grubbs-Williams, C. (1998). The collaborative leader. In D. McGrath (Ed.), *Creating and benefiting from institutional collaboration: Models for success. New Directions for Community Colleges, 1998*(103), 51-56. San Francisco, CA: Jossey-Bass.

Gurley, L., & Callaway, W. (2006). *Introduction to radiologic technology* (6th ed.). St. Louis, MO: Mosby Elsevier.

Harris, E. (1995). *The shadowmakers: A history of radiologic technology* (P. Young, C. McElveny, & B. Pongracz-Barth, Eds.). Albuquerque, NM: American Society of Radiologic Technologists.

Hoffman-Johnson, G. (2007, Fall). Seamless transition in the twenty-first century: Partnering to survive and thrive. In M. Amey (Ed.), *Collaborations across educational sectors. New Directions for Community Colleges, 2007*(139), 17-27. doi:10.1002/cc.289

Irlen, A., & Gulluni, F. (2002). Asnuntuck Community College's machine technology certificate and degree programs. In M. Spangler (Ed.), *Developing successful partnerships with business and the community. New Directions for Community Colleges, 2002*(119), 47-58. San Francisco, CA: Jossey-Bass.

Johnson, C. (2007). *The role of social capital in creating sustainable partnerships* (Doctoral dissertation, Central Michigan University). Available from ProQuest Information and Learning. (No. 3288071)

Johnson, M., Christensen, C., & Kagermann, H. (2008, December). Reinventing your business model. *Harvard Business Review,* 51-60.

Joint Review Committee of Education in Radiologic Technology. (2012a). *Accredited MRI programs.* Retrieved July 29, 2012, from https://portal.jrcertaccreditation.org/summary/accreditedprogramsearch.aspx

Joint Review Committee of Education in Radiologic Technology. (2012b). *MRI accreditation standards*. Retrieved July 29, 2012, from http://www.jrcert.org/sites/jrcert/uploads/documents/2011_Standards/Standards_2011-Magnetic_Resonance.pdf

Joint Review Committee of Education in Radiologic Technology. (2012c). *General Information.* Retrieved July 29, 2012, from http://www.jrcert.org/about/

Joyce, K. (2008). *Magnetic appeal: MRI and the myth of transparency*. London: Cornell University Press.

Kahane, A. (2007). *Solving tough problems: An open way of talking, listening, and creating new realities*. San Francisco, CA: Berrett-Koehler Publishers.

Kellogg Community College. (2011a). *Cost to educate model* (Unpublished document). Battle Creek, MI: Kellogg Community College, Administration and Finance Division.

Kellogg Community College. (2011b). *Substantive Change Application, Higher Learning Commission of the North Central Association of Colleges and Schools* (Unpublished document). Battle Creek, MI: Kellogg Community College, Instructional Division.

Kezar, A., & Lester, J. (2009). *Organizing higher education for collaboration: A guide for campus leaders*. San Francisco, CA: Jossey-Bass.

Kisker, C., & Hauser, P. (2007). Partnering to move students into college and community-orientated careers: The Administration of Justice Department at East Los Angeles College. In M. Amey (Ed.), *Collaborations across educational sectors. New Directions for Community Colleges, 2007,* 29-39. San Francisco, CA: Jossey-Bass.

Kotter, J. (1996). *Leading change*. Boston, MA: Harvard Business Review Press.

Kotter, J. (2008). *A sense of urgency*. Boston, MA: Harvard Business Press.

Kotter, J., & Cohen, D. (2002). *The heart of change: Real-life stories of how people change their organizations*. Boston, MA: Harvard Business Review Press.

Kotter, J., & Whitehead, L. (2010). *Buy-in: Saving your good idea from getting shot down.* Boston, MA: Harvard Business Review Press.

Kouzes, J., & Posner, B. (2012). *The leadership challenge: How to make extraordinary things happen in organizations* (5th ed.). San Francisco, CA: Jossey-Bass.

Lefever-Davis, S., Johnson, C., & Pearman, C. (2007). Two sides of a partnership: Egalitarianism and empowerment in school-university partnerships. *Journal of Educational Research, 100*(4), 204-210.

Lencioni, P. (2002). *The five dysfunctions of a team: A leadership fable*. San Francisco, CA: Jossey-Bass.

Lencioni, P. (2006). *Silos, politics and turf wars: A leadership fable about destroying the barriers that turn colleagues into competitors*. San Francisco, CA: Jossey-Bass.

Lieberman, J. (1998). Creating structural change: Best practices. In D. McGrath (Ed.), *Creating and benefiting from institutional collaboration: Models for success. New*

Directions for Community Colleges, 1998(103), 13-21. San Francisco, CA: Jossey-Bass.

Lundquist, S., & Nixon, J. (1998). The partnership paradigm: Collaboration and the community college. In D. McGrath (Ed.), *Creating and benefiting from institutional collaboration: Models for success. New Directions for Community Colleges, 1998*(103), 43-50. San Francisco, CA: Jossey-Bass.

Maxwell, J. (2005). *The 360 degree leader: Developing your influence from anywhere within the organization*. Nashville, TN: Nelson Business.

McCarthy, C. (2003, Fall). Learning on the job: Moving from faculty to administration. In E. Piland & D. Wolf (Eds.), *Help wanted: Preparing community college leaders in a new century. New Directions for Community Colleges, 2003*(123), 39-49. doi: 10.1002/cc.120

Merriam, S. (2002). *Qualitative research in practice: Examples for discussion and analysis*. San Francisco, CA: Jossey-Bass.

Merriam, S. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.

Merriam-Webster dictionary. (2012). Retrieved October 31, 2012, from http://www.merriam-webster.com/

Messina, R. (2010). *Community college funding: A very public collision*. Retrieved June 21, 2012, from http://www.accbd.org/wp-content/uploads/2010/08/messina.pdf

Michigan Community College Virtual Learning Collaborative. (2012). *Guiding principles.* Retrieved July 29, 2012, from http://www.mccvlc.org/~staff/content.cfm?ID=95

Mohr, J., & Spekman, R. (1994). Characteristics of partnership success: Partnership attributes, communication behavior, and conflict resolution techniques. *Strategic Management Journal, 15*, 135-152.

Moltz, D. (2010). The new community college tuition hike. *Inside Higher Ed.* Retrieved July 9, 2012, from http://www.insidehighered.com/news/2010/10/26/tuition

Myran, G. (2009). A new open-door model for community colleges. In G. Myran (Ed.), *Reinventing the open door: Transformational strategies for community colleges* (pp. 1-11). Washington, DC: Community College Press.

Owens, R., & Valesky, T. (2007). In A. Burvikovs (Ed.), *Organizational behavior in education: Adaptive leadership and school reform* (9th ed.). Boston, MA: Pearson Education.

Ozaki, C., Amey, M., & Watson, J. (2007, Fall). Strategies for the future. In M. Amey (Ed.), *Collaborations across eductional sectors. New Directions for Community Colleges, 2007*(139), 105-113. doi:10.1002/cc.297

Paschal, R., Raymond, M., & Walker, R. (1998). Predictors of success on the ARRT's MRI exam. *Radiologic Technology, 70*(1), 29.

Patton, M. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.

Peppers, D., & Rogers, M. (2012). *Extreme trust: Honesty as a competitive advantage*. New York, NY: The Penguin Group.

Peterson, L. (2007). Articulating the future through collaboration. In L. Dotolo & A. Larrance (Eds.), *Access to higher education through consortia. New Directions for Higher Education, 2007*(138), 95-102. San Francisco, CA: Jossey-Bass.

Prins, E. (2005). Framing a conflict in a community-university partnership. *Journal of Planning Education and Research, 25*(75), 57-72. doi:10.1177/0739456X04270370

Reed, G., Cooper, J., & Young, L. (2007, Fall). A partnership in flux: The demise of a program. In M. Amey (Ed.), *Collaborations across educational sectors. New Directions for Community Colleges, 2007,* 79-90.

Rendon, L., Gans, W., & Calleroz, M. (1998). No pain, no gain: The learning curve in assessing collaboratives. In D. McGrath (Ed.), *Creating and benefiting from institutional collaboration: Models for success. New Directions for Community Colleges, 1998*(103), 71-84. San Francisco, CA: Jossey-Bass.

Rubin, H., & Rubin, I. (2012). *Qualitative interviewing: The art of hearing data* (3rd ed.). Los Angeles, CA: Sage.

Schaier-Peleg, B., & Donovan, R. (1998). Building local partnerships: Contributions of a national center. In D. McGrath (Ed.), *Creating and benefiting from institutional collaboration: Models for success. New Directions for Community Colleges, 1998*(103), 57-64. San Francisco, CA: Jossey-Bass.

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers and the social sciences* (3rd ed.). New York, NY: Teachers College Press.

Smith, D. (2011). *The elephant in the room: How relationships make or break the success of leaders and organizations*. San Francisco, CA: Jossey-Bass.

Society for Human Resource Management, & Wall Street Journal Careers. (2008). *Critical skills, needs and resources for the changing workforce: Keeping skills competitive.* Alexandria, VA: Author.

Spangler, M. (2002, Fall). Concluding observations on successful partnerships. In M. Spangler (Ed.), *Developing successful partnerships with business and the community. New Directions for Community Colleges, 2002*(119), 77-80. doi:10.1002/cc.80

Sundberg, L. (2002). Building partnerships with business that make a difference. In M. Spangler (Ed.), *Developing successful partnerships with business and the community. New Directions for Community Colleges, 2002*(119), 13-20. doi:10.1002/cc.73

Sydow, D. (2011). Think as entrepreneurs to develop new funding streams. *Community College Times.* Retrieved June 21, 2012, from http://www.communitycollegetimes .com/Pages/Opinions/Think-as-entrepreneurs-to-develop-new-funding-streams.aspx

Tett, L., Crowther, J., & O'Hara, P. (2003). Collaborative partnerships in community education. *Journal of Educational Policy, 18*(1), 37-51. doi:10.1080/0268093032000042191

Torres, L., Guillen-Dutton, A., & Linn-Watson, T. (2010). *Patient care in imaging technology* (7th ed.). Baltimore, MD: Lippincott Williams & Wilkins.

Warford, L. (2009). Reinventing career pathways and continuing education. In G. Myran (Ed.), *Reinventing the open door: Transformational strategies for community colleges* (pp. 123-138). Washington, DC: Community College Press.

Watson, J. (2007, Fall). Stepping outside the big box high school: A partnership influenced by goals, capital, and decision making. In M. Amey (Ed.), *Collaborations across educational sectors. New Directions for Community Colleges, 2007,* 49-56.

White House Summit. (2010). In B. Obama & J. Biden (Eds.), *President Obama's 2020 initiative.* Retrieved July 28, 2012, from http://www.whitehouse.gov/the-press-office/2010/10/05/remarks-president-and-dr-jill-biden-white-house-summit-community-college

Whitton, J. (2012). Why "educationally prepared and clinically competent" matters. *ASRT Scanner, 44*(5), 24.

Wowiod, L. (2002). Learning into action: Partnerships take the classroom to the community. In M. Spangler (Ed.), *Developing successful partnerships with business and the community. New Directions for Community Colleges, 2002*(119), 59-68. San Francisco, CA: Jossey-Bass.

Wright, L., & Middleberg, R. (1998). Lessons from a long-term collaboration. In D. McGrath (Ed.), *Creating and benefiting from institutional collaboration: Models for success. New Directions for Community Colleges, 1998*(103), 5-12. San Francisco, CA: Jossey-Bass.

Yamasaki, E. (1998). Sources and information: Community colleges and collaboration. In D. McGrath (Ed.), *Creating and benefiting from institutional collaboration: Models for success. New Directions for Community Colleges, 1998*(103), 85-92. San Francisco, CA: Jossey-Bass.

Yin, R. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks, CA: Sage.

Zwerling, L. S. (1998). Funding collaboratives. In D. McGrath (Ed.), *Creating and benefiting from institutional collaboration: Models for success. New Directions for Community Colleges, 1998*(103), 65-71. San Francisco, CA: Jossey-Bass.

APPENDIX A

MICHIGAN RADIOLOGIC AND IMAGING SCIENCES CONSORTIUM AGREEMENT

MICHIGAN RADIOLOGIC AND IMAGING SCIENCES (MiRIS)
CONSORTIUM AGREEMENT

Grand Valley State University (GVSU), Kellogg Community College (KCC), Grand Rapids Community College (GRCC), Lake Michigan Community College (LMCC), Lansing Community College (LCC), and Mid-Michigan Community College (MMCC), (herein after collectively referred to as the "Consortium Members", "MiRIS Consortium", "Consortium" or "Members" and individually as "Consortium Member" or "Member") agree to the following:

CONSORTIUM MEMBERS
The Consortium Members are two and four year institutions of higher education who agree to share resources and cooperate in offering educational opportunities for their students seeking to earn degrees and certificates in Radiologic and Imaging Sciences.

MISSION
This MiRIS Consortium has been created to provide didactic hybrid distance education, laboratory simulation, and clinical educational experiences in advanced medical imaging modalities with opportunities for students to earn associate, baccalaureate, or graduate degrees in the field acceptable to each student's credentialing bodies. All Members agree to cooperate, consistent with the terms and conditions of this Agreement, to operate a single state collaborative, MiRIS, for this Mission.

CONSORTIUM DIRECTOR
The Members agree to appoint by majority a Consortium Director (the "Director"). The Director will meet no less than the minimum qualifications set forth by the Joint Review Committee of Education in Radiologic Technology ("JRCERT") for program accreditation of magnetic resonance imaging education. The Director's primary responsibility will be to serve as the Council representative in support of the Educational Coordinator to assure consortium program student-learning outcomes are achieved, with specific responsibilities defined by the Consortium Council in accordance with JRCERT standards. The Director will be under the policies, procedures, and supervision of their employing institution. Director responsibilities may be shared by two persons and in the event of conflicting opinions, the conflict will be resolved through Council efforts.

EDUCATIONAL COORDINATOR
The Members further agree to hire a full-time Educational Coordinator (the "Coordinator") by a majority vote with each Member entitled to cast one vote. The Coordinator will meet no less than the minimum qualifications set forth by the JRCERT for program accreditation of magnetic resonance imaging education. The Consortium Council in accordance with JRCERT standards will define the Coordinator's responsibilities. The Coordinator will work in collaboration with the Director to assure consortium program student-learning outcomes are achieved. The Coordinator will be under the policies, procedures, and supervision of the fiscal agent. The Coordinator may also have instructor assignments.

GOVERNANCE

The Consortium Council shall be created to oversee the operation of the Consortium and shall be comprised of the Consortium Director, the fiscal agent Dean and one representative from each Member to be selected by the appropriate Dean of each Member school (or administrator of equal or similar level responsibilities). Each Consortium Member Dean shall indicate in writing the name and contact information of that Member's Council representative. Each appointed Council representative shall serve at the pleasure of the appointing Dean.

MEMBERSHIP

The above referenced institutions are all included as Members upon signing the Consortium Agreement. Other institutions may join the consortium as Members upon approval by the majority of current Members.

COURSE DEVELOPMENT, MODIFICATION, INSTRUCTIONAL TRAINING and TEACHING EVALUATION

Course development, modification, instructional training, and teaching evaluation to assure achievement of Consortium program outcomes shall be facilitated by the Educational Coordinator and supported by the Director serving as the Council representative.

INTELLECTUAL PROPERTY

COPYRIGHTS

Should a Member pay their faculty for development of courses and related materials to be used for Consortium purposes, the work is subject to the Member's established copyright policies. Copies of Members' Intellectual Property Policies shall be made available to all Members.

If the Consortium reimburses a Member for the development or revision of courses or related materials, the work belongs to the Consortium and the Consortium shall have the right for the life of the Consortium to use and modify the work.

Upon dissolution of the Consortium, the Members will inherit any copyrights held by the Consortium at the time of dissolution.

TRADEMARKS

Members agree to grant non-exclusive permissive license to each other to use institutional trademarks for purposes of promoting and identifying the Consortium but not in a manner inconsistent with that Member's policy(s) for trademark usage. Institutional trademarks remain the property of the institution.

COURSE USAGE UPON TERMINATION

Upon the termination of this Agreement or the withdrawal of any individual Member in accordance with the Duration and Termination provisions of this Agreement, no Member shall have the right or authority to utilize courses or course materials contributed by other Members or their participating faculty without the written consent of the intellectual property owner. Should a Member withdraw from the Consortium and is providing, or is scheduled to provide, a course offered in Consortium

programs, unless otherwise agreed in writing for a greater period of time, the Consortium is granted the use of the intellectual property owned by the withdrawing Member used as a part of said course(s) at no cost to the Consortium until the scheduled course(s) have been completed or for one year after the effective date of the withdrawal, whichever period of time is longer.

LIBRARY AND SIMULATION RESOURCES

Members agree to make available to all students enrolled through MiRIS full access to their respective academic collections and resources related to Consortium programs as deemed appropriate by the Educational Coordinator and Director.

EDUCATIONAL COORDINATOR PROFESSIONAL DEVELOPMENT

The Educational Coordinator will abide by professional development requirements set forth by the fiscal agent's policies and procedures, such as those associated with technology, institutional policies, etc. The Coordinator will be required to maintain professional credentials in accordance with the standards set forth by the JRCERT for program accreditation in magnetic resonance imaging education.

FACULTY RESPONSIBILITIES

Faculty responsibilities will be determined according to the policies and procedures of the institution employing the faculty.

CLINICAL EDUCATION

Student responsibilities, and program processes and procedures will be described in a program-specific student handbook developed by the Educational Coordinator and approved by the Consortium Council.

REGISTRATION, ADMISSION, ENROLLMENT, MANAGEMENT of STUDENTS

Students will be admitted to consortium programs by the institution granting the terminal award. The Consortium Council will establish suggested admission criteria. The Educational Coordinator will be responsible for securing documentation required of students by clinical sites related to background checks, drug screenings, and all other clinical access requirements. Students will register for consortium courses using the processes of the Michigan Community College Virtual Learning Collaborative (MCCVLC). Students will be governed by the student code of conduct and due process procedures of their "home college" and the institution granting the terminal award. Students will be accountable to program-specific rules and processes that will be defined in the program-specific student handbook and administered by the Educational Coordinator. Grade and refund appeals related specifically to a course will be governed by the policies and procedures of the institution providing the course.

Terminal awards shall include certificate of completion, associate degree, or baccalaureate degree and will be determined by the Member Institution granting the award.

LIABILITY

The parties agree that statutory and common law theories and principles of liability, indemnification, contribution, and equitable restitution shall govern all claims, costs, actions, causes of action, losses or expenses (including attorney fees) resulting from or caused by the actions or omission of the parties

hereto. Furthermore, if any Member becomes aware of a claim involving another Member, the party with knowledge of the claim shall inform the other part in writing within ten (10) days of receiving knowledge of the claim, demand, or other loss.

TUITION

Tuition is to be collected by each Member for their respective students enrolled in Consortium courses and shall be managed through Michigan Community College Virtual Learning Collaborative (MCCVLC) according to the MCCVLC processes and procedures.

Members agree that students enrolled in community college courses shall pay tuition at the community colleges' MCCVLC tuition rate including those students whose home college is the course provider college. Students enrolled in upper division or graduate level courses will pay tuition at a rate and with a process identified by the Consortium Council.

REVENUE AND EXPENSE SHARING

It is understood and agreed by the Consortium Members that a minimum financial responsibility will exist for each Member Institution according to the number of student positions allotted to each Member Institution. In the event allotted student positions are transferred from one Member Institution to another Member Institution, financial responsibilities will be pro-rated according to the number of student positions filled by each institution. If an institution fails to enroll students in their allotted positions, and is unable to transfer those positions to another its Member, they retain fiscal responsibility for those positions. Members may transfer student positions and financial responsibility to non-Member institutions upon majority vote of the Consortium Council. There is to be no value attached to an allotted position and nothing of value shall be given to the Member transferring an allotted position by the Member or non-Member receiving the allotted position. Should the Council deny a Member Institution the ability to transfer their allotted student positions to a non-Member institution, the Consortium will assume financial responsibility for those positions. Should a Member Institution terminate the agreement, the Consortium Council will determine a re-allotment of student positions, or actively recruit a replacement Member.

The MCCVLC will collect and distribute net revenue and expenses according to its normal practices and will provide the fiscal agent a reconciliation report each enrollment period. Each Member institution shall invoice the fiscal agent of the consortium for direct expenses incurred in operating the consortium and its courses, including instructional costs. The Consortium Council will approve all invoices to be paid. Annually the Consortium fiscal agent shall prepare a statement of net revenue and expense for the Consortium and for each participating institution by no later than 120 days subsequent to the fiscal agent's fiscal year end. Consortium excess revenue will be distributed, or consortium net expenses billed to, each Member or non-Member in proportion to the number of allotted positions assigned to each Member or non-Member.

FISCAL AGENT

Members agree for Kellogg Community College to assume the role of Consortium Fiscal Agent. The roles and responsibilities will be to manage the accounting of revenue and expenses, to provide Members with annual accounting statements, to distribute excess revenue to Members or to invoice

Members for net expenses incurred by the Consortium. The Fiscal Agent will also manage the employment of the Educational Coordinator as an expense of the Consortium. The role of Fiscal Agent may transfer to another Member Institution in the event Kellogg Community College terminates their membership in the Consortium, provides 60 days written notice that it no longer desires to perform Fiscal Agent duties or Members agree by majority for another Member to assume the responsibilities as Fiscal Agent.

PROGRAM AND CURRICULUM

Members agree to offer a Magnetic Resonance Imaging (MRI) Program as their first curricular selection. Curriculum for the MRI Program shall be initiated by KCC with input from GVSU providing for sophomore to junior (200/300) level courses.

INITIAL NUMBER OF STUDENT POSITIONS ALLOTED PER MEMBER INSTITUTION

Members agree to open the MRI Program with twenty-four (24) available student positions allotted as follows:

4 students	KCC
4 students	GRCC
4 students	GVSU
4 students	LMCC
4 students	LCC
4 students	MMCC

The Consortium Council reserves the right to increase or decrease the maximum number of student positions allotted to each Member upon Council majority vote.

CLINICAL EDUCATION ACCESS

Consortium courses that include a clinical education component for the MRI program shall be coordinated by the Educational Coordinator. Each student's home college agrees to facilitate access to its existing clinical education system should a student require clinical experience not provided by their home school's clinical providers. Members will support the Educational Coordinator to assure an appropriate variety of clinical experiences are provided to meet consortium program student-learning outcomes, and for eligibility of the American Registry of Radiologic Technologists (ARRT) examination in MRI.

Consortium courses that include a clinical education component in computed tomography, mammography, interventional and other advanced modalities will be managed like those of the MRI program as described in the preceding paragraph.

OTHER TERMS AND CONDITIONS

Members agree that the Consortium Council may approve processes permitting students to declare for upper division or graduate level Consortium courses.

Members shall have no authority to bind or act as agents for each other or their employees. Nothing in this Agreement, express or implied, shall confer any rights, remedies, claims, or interests upon a person or entity not a Party to this Agreement.

Members agree to abide by all Federal and state laws pertaining to equal employment opportunity and agree that no person shall, on the grounds of race, color, national origin, sex, sexual preference, age, or handicap, be excluded from employment with or participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity performed under this Agreement.

Members agree to abide by privacy rules set forth in applicable state and federal law.

Each provision of this Agreement shall be a separate and distinct covenant and, if declared illegal, unenforceable or in conflict with any governing law, shall not affect the validity of the remaining portion of this Agreement

This Agreement constitutes the entire agreement and understanding of the parties with respect to its subject matter. No prior or contemporaneous agreement or understanding will be effective. This Agreement shall be governed by the laws of the State of Michigan.

The individuals signing below on behalf of the Members hereby represent and warrant that they are duly authorized to execute and deliver this Agreement on behalf of Members and that this Agreement is binding upon Members in accordance with its terms.

Mutual indemnification and insurance requirements shall be provided for each faculty by the employing school at the usual levels for faculty at that school. The Consortium operates curriculum through each school and does not assume any liability for actions of faculty employed by Member schools.

DURATION AND TERMINATION OF AGREEMENT

This Agreement shall have an initial term of five (5) years with automatic renewal for successive one year periods. This Agreement may be terminated at any time by mutual agreement of the Members. Further, any individual Member may terminate its participation in MiRIS pursuant to this Agreement upon sixty (60) days advance written notice to all other Members. A Member choosing to terminate its participation must complete any and all of its courses currently in progress before the termination is effective. Notwithstanding the above, MiRIS shall not terminate the degree program until all enrolled students have a reasonable opportunity to complete required program coursework and applicable internships and graduation.

Signature Pages Follow

MIRIS Agreement for Kellogg Community College:

12-15-2010

Charles Parker
Vice President of Instruction
Kellogg Community College
450 North Avenue
Battle Creek, MI 49017

Date

12-15-10

Dennis Bona, Ed.D
President
Kellogg Community College
450 North Avenue
Battle Creek, MI 49017

Date

MIRIS Agreement for Lake Michigan College:

Dean F. Souden
Executive Dean of Career Education
Lake Michigan College
2755 E. Napier Avenue
Benton Harbor, MI 49022

2/22/11
Date

MIRIS Agreement for Lansing Community College:

Stephanie Shanblatt — 12/17/2010

Stephanie Shanblatt, Ph.D.
Provost: Mail Code: 8100
Lansing Community College
PO Box 40010
Lansing, MI 48901-7210

Date

12/17/10

Catherine A. Fisher, CPA
Chief Financial Officer: Mail Code 7000
Lansing Community College
PO Box 40010
Lansing, MI 48910-7210

Date

MiRIS Agreement for Grand Rapids Community College:

12-15-10

Steven Ender, Ed.D, President
Grand Rapids Community College
143 Bostwick Avenue, NE
Grand Rapids, MI 49503

Date

12.20.10

Gilda Gely, Ph.D
Provost & Vice President of Academic Affairs
Grand Rapids Community College
143 Bostwick Avenue, NE
Grand Rapids, MI 49503

Date

12/15/2010

Fiona Hert, M.S.W.
Dean of Workforce Development & Assistant to Provost
Grand Rapids Community College
143 Bostwick Avenue, NE
Grand Rapids, MI 49503

Date

MiRIS for Mid Michigan Community College:

Carol A. Churchill — 2.28.11

Carol A. Churchill, M.A.
President
Mid Michigan Community College
1375 South Clare Avenue
Harrison, Michigan 48625

Date

Todd Tarrant — 2/25/2011

Todd Tarrant
Dean of Nursing & Health Technologies
Mid Michigan Community College
1375 South Clare Avenue
Harrison, Michigan 48625

Date

John Skinner — 2/28/2011

John Skinner, M.Ed., M.S.A., R.T.(R)
Radiography Program Director
Mid Michigan Community College
1375 South Clare Avenue
Harrison, Michigan 48625

Date

MiRIS Agreement for Grand Valley State University:

Gayle Davis — 2.8.11

Gayle Davis, Ph.D., Provost
Grand Valley State University
301 Michigan St. NE
Grand Rapids, MI 49503

Date

Roy H Olsson Jr — 2-8-11

Roy Olsson, Jr., Ph.D., Dean
College of Health Professions
Grand Valley State University
Cook DeVoss Center For Health Sciences Suite 200
301 Michigan St. NE
Grand Rapids, MI 49503

Date

APPENDIX B

HIGHER LEARNING COMMISSION APPROVAL LETTER

Higher Learning Commission
A commission of the North Central Association

230 South LaSalle Street, Suite 7-500 | Chicago, IL 60604-1411
312-263-0456 | 800-621-7440 | Fax: 312-263-7462 | ncahlc.org

July 25, 2011

President Dennis J. Bona
Kellogg Community College
450 North Ave
Battle Creek , MI 49017

Dear President Bona:

This letter is formal notification of the action taken concerning Kellogg Community College by the Higher Learning Commission. At its meeting on July 18, 2011, the Institutional Actions Council (IAC) approved the extension of your accreditation to include the consortial relationship, known as Michigan Radiologic and Imaging Science Consortium, with Grand Rapids Community College, Grand Valley State University, Kellogg Community College, Lake Michigan College, Lansing Community College and Mid-Michigan Community College to offer the Magnetic Resonance Imaging program.

I have enclosed your institution's Statement of Affiliation Status (SAS) and Organizational Profile (OP). The SAS is a summary of your organization's ongoing relationship with the Commission. The OP is generated from data you provided in your most recent Annual Institutional Data Update. If the current Commission action included changes to the demographic, location, or distance education information you reported in your Annual Institutional Data Update, we have made the changes on the Organizational Profile. No other organizational information was changed.

The attached Statement of Affiliation Status and Organizational Profile will be posted to the Commission Web site on Monday, August 8. If you have questions about these documents, please contact Mary B. Breslin B.V.M., your staff liaison before Friday, August 5. Information about notifying the public of this action is found in Chapter 8.3-3 and 8.3-4 of the *Handbook of Accreditation,* Third Edition.

Please be aware of Commission policy on planned or proposed organizational changes that require Commission action before their initiation. You will find the Commission's change policy at ncahlc.org/information-for-institutions/institutional-change.html. If you have questions about how planned institutional changes might affect your relationship with the Commission, please write or call Mary B. Breslin B.V.M.

On behalf of the Board of Trustees, I thank you and your associates for your cooperation.

Sincerely,

Sylvia Manning

Sylvia Manning
President

Enclosures: Statement of Affiliation Status
Organizational Profile

cc: Board Chair

APPENDIX C

MRI CURRICULUM SUMMARY

MiRIS MRI Curriculum

MRI Core Curriculum:

- **Spring 2011**
  - MRI 200 — Professional Prospectus — online — 1 cr. (16 hrs) (KCC)

- **Summer** 2011
  - MRI 260 — MRI Pre-Clinical Preparation — hybrid — 3 cr. (48 hrs) (KCC)
  - MRI 220 — MR Physics I — online — 3 cr. (48 hrs) (LMC)
  - MRI 241 — Applied Sectional Anatomy — online — 3 cr. (48 hrs) (LCC)

- **Fall 2011**
  - MRI 222 — MR Physics II — online — 3 cr. (48 hrs) (LMC)
  - MRI 230 — MR Procedures & Pathophysiology I — online — 3 cr. (48 hrs) (LCC)
  - MRI 261 — Clinical Practice I — hybrid — 3 cr. (288 hrs) (KCC/Ed.C)

- **Spring 2012**
  - MRI 232 — MR Procedures & Pathophysiology II — online — 3 cr. (48 hrs) (LMC)
  - MRI 201 — Computer Applications in Medical Imaging — online — 3 cr. (48 hrs) (LMC)
  - MRI 262 — Clinical Practice II — hybrid — 3 cr. (288 hrs.) (KCC/Ed.C)

- **Summer 2012**
  - MRI 240 — Image Analysis — online — 3 cr. (48 hrs) (LMC)
  - MRI 295 — MRI Certification Exam Preparation — online — 3 cr. (48 hrs) (LMC)
  - MRI 263 — Clinical Practice III — hybrid — 3 cr. (288) (KCC/Ed.C)

/JK 10/1/09
Rev. JK 12/09
Rev. JK KM 2/4/10
Rev. JK 4/5/10
Rev. JK 10/15/10
Rev. JK 12/20/10
FINAL 1/11

APPENDIX D

CONFIRMATION TO PARTICIPATE IN THE STUDY – PROGRAM DIRECTORS

Date

Dear _____,

Thank you for agreeing to be a participant in my dissertation work by allowing me the opportunity of an interview to glean your perspective of the MiRIS Consortium. As I've shared, I am a doctoral student in the Ferris State University Doctorate of Community College Leadership Program and the title of my dissertation is Qualitative Insights on the Past, Present, and Future of a Michigan Intercollegiate Consortia for MRI Program Delivery. The catalyst of the study is the Michigan Radiologic and Imaging Science (MiRIS) Consortia model formed through the efforts of our six institutions with the initial purpose of delivering a magnetic resonance imaging (MRI) program with a baccalaureate transfer option to the university partner. The study is assuming a qualitative approach by conducting interviews with key individuals of each participating institution including six radiography program directors.

Research Overview

The research questions for my study are as follows:

1.) What elements must exist for the formation, sustainability and growth of an intercollegiate consortium for the delivery of certificate and degree programs in magnetic resonance imaging?

2.) Can the MiRIS Consortium model be replicated for programming in other occupational disciplines?

The interview will consist of several questions and consume about 60 to 90 minutes. Upon completion of the interviews, l will analyze the responses for common themes and draw conclusions that may serve to inform others interested in forming educational collaboratives.

The results of the study will be included in my dissertation to be defended to a committee at Ferris State University in the spring of 2013 and may be used in future published articles and professional presentations.

Benefit of Participating in this Research

Participation in this research provides you an opportunity to inspire innovation, to encourage a new way of thinking, and to inform others about intercollegiate partnerships as a

means of occupational program delivery in a traditionally competitive market. Collectively, participant input has the potential to influence other collaborative arrangements that would serve to advance the community college mission. There will be no monetary award for participation in the study.

Anonymity/Confidentiality

As the researcher, my involvement with the MiRIS Consortium prohibits anonymity of the member colleges for the purpose of this study. That said, your personal name will not be used in connection to your responses but rather coded and referred to as "Participant – Alpha Numeric" EX: "Program Director 1"

Risks of Participating in the Research

While considered minimal, acknowledged is the potential risk to relationships through authentic responses of delicate subject matter. Effort will be applied to avoid association of sensitive responses to you or to your institution however association may still be made by readers familiar with the MiRIS Consortium.

Research Data

The interview will be audio taped and professionally transcribed for analysis. Audio recordings and transcripts will be securely maintained by me as the researcher and password protected.

Informed Consent

Engaging with me to arrange a time, date and location for the interview and then subsequently presenting for the interview will constitute your voluntary consent to participate. You will be asked to sign an informed consent form prior to the onset of the interview.

Ferris State University Institutional Review Board Approval

Attached you will find the approval allowing me to proceed with my research efforts issued by the Ferris State University Institutional Review Board for the Protection of Human Subjects. Your participation will contribute greatly to the value of the study. I look forward to our meeting on _____.

Sincerely,

Jan Karazim
Doctoral Candidate
Ferris State University
Doctorate of Community College Leadership Program

APPENDIX E

CONFIRMATION TO PARTICIPATE IN THE STUDY – DEANS

Date

Dear _____,

Thank you for agreeing to be a participant in my dissertation work by allowing me the opportunity of an interview to glean your perspective of the MiRIS Consortium. As I've shared, I am a doctoral student in the Ferris State University Doctorate of Community College Leadership Program and the title of my dissertation is Qualitative Insights on the Past, Present, and Future of a Michigan Intercollegiate Consortia for MRI Program Delivery. The catalyst of the study is the MiRIS Consortium model formed through the efforts of our six institutions with the initial purpose of delivering a magnetic resonance imaging (MRI) program with a baccalaureate transfer option by GVSU as the university partner. The study is assuming a qualitative approach by conducting interviews with key individuals of each participating institution including three occupational deans.

Research Overview

The research questions are as follows:

1.) What elements must exist for the formation, sustainability and growth of an intercollegiate consortium for the delivery of certificate and degree programs in magnetic resonance imaging?

2.) Can the MiRIS Consortium model be replicated for programming in other occupational disciplines?

The interview will consist of several questions and consume about 60 to 90 minutes. Upon completion of the interviews, l will analyze the responses for common themes and draw conclusions that may serve to inform others interested in forming educational collaboratives.

The results of the study will be included in my dissertation to be defended to a committee at Ferris State University in the spring of 2013 and may be used in future published articles and professional presentations.

Benefit of Participating in this Research

Participation in this research provides you an opportunity to inspire innovation, to encourage a new way of thinking, and to inform others about intercollegiate partnerships as a means of occupational program delivery in a traditionally competitive market. Collectively,

participant input has the potential to influence other collaborative arrangements that would serve to advance the community college mission. There will be no monetary award for participation in the study.

Anonymity/Confidentiality

As the researcher, my involvement with the MiRIS Consortium prohibits anonymity of the member colleges for the purpose of this study. That said, your personal name will not be used in connection to your responses but rather coded and referred to as "Dean – Roman Numeral" EX: "Dean IV."

Risks of Participating in the Research

While considered minimal, acknowledged is the potential risk to relationships through authentic responses of delicate subject matter. Effort will be applied to avoid association of sensitive responses to you or to your institution however association may still be made by readers familiar with the MiRIS Consortium.

Research Data

The interview will be audio taped and professionally transcribed for analysis. Audio recordings and transcripts will be securely maintained by me as the researcher and password protected.

Informed Consent

Engaging with me to arrange a time, date and location for the interview and then subsequently presenting for the interview will constitute your voluntary consent to participate. You will be asked to sign an informed consent form prior to the onset of the interview.

Attached you will find the approval allowing me to proceed with my research efforts issued by the Ferris State University Institutional Review Board for the Protection of Human Subjects. Your participation will greatly contribute to my study and I look forward to our meeting on Friday, July 20th!

Sincerely,

Jan Karazim
Doctoral Candidate
Ferris State University
Doctorate of Community College Leadership Program

APPENDIX F

INFORMED CONSENT

INFORMED CONSENT

By signing this document, I understand the following:

- I am being interviewed as part of a qualitative study titled: Qualitative Insights on the Past, Present, and Future of a Michigan Intercollegiate Consortia for MRI Program Delivery.

- My interview will be audio taped and professionally transcribed in the form of a typed transcript intended for analysis. Audio recordings will be heard by the researcher and transcriptionist only and destroyed upon production of the transcript. Transcripts will be securely maintained by the researcher and password protected for a period of two years following the study, at which time they will be re-formatted and destroyed.

- My responses will be included in the researcher's dissertation to be defended to a committee at Ferris State University in the spring of 2013 and may be used in future published articles and professional presentations.

- Results of the study can be made available by contacting the researcher:

  Jan Karazim
  Kellogg Community College
  450 North Avenue
  Battle Creek , MI 49015
  karazimj@kellogg.edu
  (269) 965-3931 ext. 2315

- While considered minimal, I acknowledge potential risk to relationships through authentic responses of delicate subject matter. Effort by the researcher will be made to avoid association of sensitive responses to me or to my institution however, association may still be made by readers familiar with the MiRIS Consortium.
  The researcher's role with the MiRIS Consortium prohibits anonymity of the member colleges for the purpose of this study. The participant group for this study is the small group of individuals who worked together to establish the MiRIS Consortium and to coordinate the MRI Program and are known by administrators, faculty and staff at their respective colleges. Comments, quotes or points of view may be recognized and related to individual participants by readers who may be critical or offended which could have adverse consequences to working relationships. In an effort to protect my individual identity, my personal name will not be used but rather coded and referred to as "Participant – Alpha Letter."

- My participation in this study is voluntary. I have the right to refuse to answer any questions or stop the interview and withdraw my consent at any time during the course of the interview.

- I am not receiving any compensation for my participation in this study.

- This research plan has undergone the scrutiny of the Institutional Review Board (IRB) for Protection of Human Subjects - Ferris State University. The researcher has received approval to proceed with this interview research. I have viewed the approval document. I may contact the IRB at Ferris State University should I have concerns. The contact information is as follows:
  Dr. Connie Meinholdt, Chair, IRB
  ACS-2072, Ferris State University
  Big Rapids, MI 49307
  (231) 591-2759
  IRB@ferris.edu

_____ _____

Subject Signature Date

_____

Subject Printed Name

APPENDIX G

INTERVIEW QUESTIONS – PROGRAM DIRECTORS

RESEARCH QUESTIONS

1. **What elements must exist for the formation, sustainability and growth of an intercollegiate consortia for the delivery of certificate and degree programs in magnetic resonance imaging?**

2. **Can the MiRIS Consortia model be replicated for programming in other occupational disciplines?**

INTERVIEW QUESTIONS – Program Directors

Profile:

a. What is the highest level of education you've completed? What professional credentials do you hold?
b. Were you ever a full-time practicing technologist?
c. How long were you a practicing technologist?
d. Did you work in areas other than radiography?
e. What position do you hold at your institution? How long have you been in the position?
f. How many students do you enroll in your radiography program each year?
g. What other medical imaging programs do you offer at your institution?
h. Can you describe the healthcare community in your service area; number and size of hospitals; systems, etc.?
i. What training needs have been expressed or indicated by the medical imaging employers in your area over the past several years?

……

j. How did your college become involved with the MiRIS consortium?
k. What do you believe was the purpose of forming the MiRIS consortium?
l. How does participation in the consortium contribute to your college's mission?
m. What is the value to your college?
n. What is the value to your students?
o. What is the value to you?
p. Is there extended value beyond your college, your students and you that I haven't mentioned?
q. The planning for the establishment of the consortium took 2 ½ years, what kept your institution motivated to stay with it?
r. What kept you motivated to stay with it?
s. What have been the greatest challenges to establishing the consortium?
t. What brought the group past those challenges?
u. Can you please share the doubts, fears, frustrations and successes you personally experienced during the 2 ½ year planning phase?

v. Can you speak to how this consortia model has transformed your thinking about teaching and learning with regard to medical imaging education? How is teaching/learning in the MRI program different than it is in your radiography program and what do you think about it?
w. If you knew then, what you know now . . . . . .
x. For years, the majority of MRI training been accomplished through employer directed on-the-job. What's changed? Why is formal programming necessary in MRI and other rad. tech specialty areas?
y. How has Workforce responded? Administration? Technologists?
z. What do you believe should be the future vision for the consortium? next steps?
aa. What must exist for the consortium to sustain and remain a viable model?
bb. What is necessary for the consortium to thrive and grow?
cc. What will the consortium look like a year from now? Three years from now?
dd. Does your college's senior leadership see value in the MiRIS Consortium?
ee. What evidence is there your senior leadership values the MiRIS Consortium?
ff. Have you spoken with your President about it?
gg. Have you been asked to speak to others about the model?
hh. Can you think of other occupational programs that could be delivered like the MiRIS Consortium?
ii. What program or discipline characteristics must exist for this model to work?
jj. What would prevent the model from being applicable to other disciplines?

APPENDIX H

INTERVIEW QUESTIONS – DEANS

RESEARCH QUESTIONS

1. **What elements must exist for the formation, sustainability and growth of an intercollegiate consortia for the delivery of certificate and degree programs in magnetic resonance imaging?**

2. **Can the MiRIS Consortia model be replicated for programming in other occupational disciplines?**

INTERVIEW QUESTIONS

Profile:

a. What position do you hold at your institution? How long have you been in the position?
b. Can you share a bit about your professional background?
c. Can you provide an overview of your college, key points of the mission, description of the service area, enrollment, student profile, etc.?

::

d. How did your college become involved with the MiRIS consortium?
e. What do you believe was the purpose of forming the MiRIS consortium?
f. How does participation in the consortium contribute to your college's mission?
g. What is the value to your college?
h. What is the value to your students?
i. What if any, current federal and state issues are addressed by this consortium model?
j. The planning for the establishment of the consortium took 2 ½ years, what kept your institution motivated to stay with it?
k. What have been the greatest challenges to establishing the consortium?
l. What do you believe brought the group past those challenges?
m. Can you speak to how this consortia model has transformed thinking about teaching and learning with regard to occupational education at your institution?
n. What do you believe should be the future vision for the consortium? next steps?
o. What must exist for the consortium to sustain and remain a viable model?
p. What is necessary for the consortium to thrive and grow?
q. What will the consortium look like a year from now? Three years from now?
r. Does your college's executive leadership team see value in the MiRIS Consortium? What evidence exists?
s. Have you spoken with your President about it?
t. Have you been asked to speak to others about the model?
u. Can you think of other occupational programs that could be delivered like the MiRIS Consortium?
v. What program or discipline characteristics must exist for this model to work?

w. What would prevent the model from being applicable to other disciplines?
x. What about institutional characteristics that would make this model work? What influence does organizational capitol play?
y. What about social capital? Are there some characteristics of individuals that lend to planning and executing a model like this?
z. This model utilizes the MCCVLC as a platform for course delivery. What is the value of the VLC to this model?
aa. We operate in state of community college autonomy. In other words, we do not have a state system. Would the consortium model work better in a state system? Would it be more challenging in a state system? Why?

APPENDIX I

CONFIDENTIALITY AGREEMENT – TRANSCRIPTIONIST

CONFIDENTIALITY STATEMENT

I, _____ am being hired by Jan Karazim for my transcription services to produce a typed transcript from audio recorded interviews. These interviews serve as confidential research for the study titled Qualitative Insights on the Past, Present, and Future of a Michigan Intercollegiate Consortia for MRI Program Delivery.

With respect to participant confidentiality and research integrity, I agree to the following:

- The audio recordings will be provided to me by Jan Karazim on a flash drive. I will listen to them in a private environment secure from others hearing the audio content.
- I will refrain from loading the audio recordings on a computer but rather will produce the typed transcript from the flash drive only.
- I will refrain from saving the transcript on a computer, saving only on the flash drive to return to Jan Karazim.
- Upon completion of the typed, I will not retain any audio recordings or typed transcripts on a computer. All recordings and documents will be returned to Jan Karazim on her flash drive.

_____
Transcriptionist

_____
Date

APPENDIX J

LIST OF DOCUMENTS REFERENCED

DOCUMENT LIST

**Documents are listed in order of reference in Chapter 4

Code	Date	Description
D1	4/2009	Talking Points
D2	8/13/2009	Financial Model 1
D3	3/10/2010	Financial Model 2
D4	3/14/2010	Financial Model 3
D5	4/7/2010	Financial Model 4
D6	4/7/2010	Financial Model 5
D7	11/29/2010	Projected Budget Year 1
D8	6/17/2009	Questionnaire to Guide Formal Agreement Draft
E1	7/3/2009	Email exchange – Notes for Formal Agreement Draft
E2	12/7/2009	Email exchange – First Draft of Formal Agreement Sent
D9	N.D.	Edits to Formal Agreement 1
D10	N.D.	Edits to Formal Agreement 2
E3	4/20/2010	Email exchange – MCCVLC Financial Process
E4	4/21/2010	Email exchange – Formal Agreement Financial Language
D11	8/13/2009	Meeting Agenda
E5	11/9/2009	Email exchange – GVSU to Join MCCVLC

E6	7/5/2012	Email – Summary of Dean/Program Director Meeting
E7	3/1/2010	Email exchange – Program Director Curriculum Meeting
E8	12/20/10	Email exchange – Clinical Site Conflict
E9	7/23/2009	Email – Communication Plan
D12	3/2009	MRI Brief – Prepared for College VP and Dean
D13	12/2009	First Draft Formal Agreement
D14	1/2010	Presentation to Program Directors
D15	4/2011	Presentation to MiRIS Institutions Support Departments
D16	6/2012	Financial Process Guide
D17	6/2012	GVSU Student Registration Guide
E10	4/19/2011	Email – JRCERT
D18	4/15/2011	Letter – JRCERT
D19	1/2011	Program Outline of Associate Degree
D20	5/13/2011	Letter of Support from JRCERT
D21	1/11/2011	Letter to HLC
D22	2/21/2011	Letter to HLC
D23	6/17/2011	Letter to HLC
D24	6/2011	Substantive Change Form - HLC
E11	6/16/2011	Email –HLC Substantive Change Doc. MiRIS Colleges

D25	2011	Annual Report – Kellogg Community College
D26	12/22/2011	GVSU Articulation Agreement for Baccalaureate Degree
D27	10/2012	Event Handout

APPENDIX K

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

Ferris State University

Institutional Review Board (FSU - IRB)
Connie Meinholdt, Ph.D. - Chair
820 Campus Drive
Ferris State University
Big Rapids. MI 49307
(231) 591-2759
IRB@ferris.edu

To: Dr. Noreen Thomas & Ms. Jan Karazim
From: C. Meinholdt, IRB Chair
Re: IRB Applications #120502 (Title: Qualitative Insights on the Past, Present and Future of a Michigan Intercollegiate Consortia for MRI Program Delivery)
Date: July 2nd, 2012

The Ferris State University Institutional Review Board (IRB) has reviewed your application for using human subjects in the study, "Qualitative Insights on the past, present and future of a Michigan intercollegiate consortia for MRI program delivery" (#120502) and determined that it is exempt – 1A from committee review. This exemption has an expiration date three years from the date of this letter. As such, you may collect data according to procedures in your application until July 3rd, 2015, 2014.

It is your obligation to inform the IRB of any changes in your research protocol that would substantially alter the methods and procedures reviewed and approved by the IRB in this application. Your application has been assigned a project number (#120502) which you may wish to refer to in future applications involving the same research procedure.

Finally, we wish to inform researchers that the IRB requires follow-up reports for all research protocols as mandated by the Code of Federal Regulations, Title 45 for using human subjects in research. The follow-up report form is available from the Ferris website: http://www.ferris.edu/htmls/administration/academicaffairs/vpoffice/hsrc. Thank you for your compliance with these guidelines and best wishes for a successful research endeavor. Please let me know if I can be of future assistance.