

University Comprehensive Internationalization (CI): Faculty Meaning-Making,
Motivations, and Perceptions for Engaging Globally

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ABSTRACTS

Academic Abstract

American universities have been internationalizing for decades, and their leaders often contend they must engage globally to stay relevant and prepare students adequately for a rapidly changing work environment. Faculty members, as keepers of the curricula and pivotal university actors, are critical to global engagement efforts on their campuses. However, many university leaders have yet to engage individual professors in ways that have resulted in securing their sustainable support for comprehensive internationalization (CI). A similar weakness of CI related research to date has been its failure to include a broad group of voices when investigating faculty engagement in internationalization.

Following Childress' framework (2010), this study explored the meaning-making, motivations, and perceptions attached to CI through individual interviews with a sample from all ranks of U.S. civil and environmental engineering faculty members from three Land Grant universities. Interviewees highlighted a variety of barriers and motivations linked to internationalization including, *historical constructs, personal and professional values, and perceptions of potential outcomes of CI engagement*. The analysis highlights and explores these factors and their connections to the international outlook ranking for interviewees' institutions.

General Audience Abstract

American universities have been addressing global concerns and challenges for decades. Their faculties have for just as long sought palliatives and solutions to those issues. One element of that work is efforts to prepare students to work in an internationally connected world. University professors who design classes for students and conduct research are critical to all of these initiatives. However, university leaders have not been able to find ways to involve a sufficient and sustainable group of professors to make globally focused research and teaching efforts a central priority. Past studies investigating faculty involvement in internationalization have not yet researched a full range of professorial perceptions of such efforts.

This study sought to understand what a sample of civil and environmental engineering faculty members at three American Land Grant universities perceived concerning internationalization initiatives at their institutions. I chose this group for study because their views have not been examined systematically and because there are more students studying engineering and in this one field within engineering than ever before. Those I interviewed included faculty members of all ranks and they also exhibited a wide range of levels of engagement in globally focused research and teaching. Interviewee responses highlighted a diverse array of motivations for international engagement and as many disincentives for faculty to do so. Professors' work histories, values, and personal and professional perspectives all mediate their involvement in globally relevant issues. This analysis identified a list of concerns that university leaders can address to encourage their faculties to pursue internationalization. It also examined the connection between university reputations and faculty engagement with international concerns.

DEDICATION

This dissertation is dedicated to my family. You always believed I could do this Ph.D. and encouraged me in this long, non-traditional journey to knowledge.

Also, praise the Father, Son, and Holy Spirit who talked to me deep in my soul and helped me to keep this endeavor in its proper sphere.

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TABLE OF CONTENTS

DEDICATION	iv
ACKNOWLEDGEMENTS	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
CHAPTER 1 INTRODUCTION	1
1.1 Context and Purpose	1
1.2 Overview of Study	3
1.3 Dissertation Outline	4
CHAPTER 2 LITERATURE REVIEW	5
2.1 Definitions and Descriptions of Comprehensive Internationalization	5
2.2 Faculty Engagement in Comprehensive Internationalization	13
2.3 Internationalization Engagement Models	20
2.4 Challenges in Understanding Faculty Engagement	24
2.5 The Problem of Practice	27
CHAPTER 3 RESEARCH DESIGN AND METHODS	30
3.1 Problem of Research	30
3.2 Theoretical Framework	31
3.3 Researcher Positionality	32
3.4 Research Design	34
3.5 Rationale and Methods	40
3.6 Ethical Standards and Protocol Information	42
3.7 Research Questions	46
3.8 Validation and Quality Strategies	47
3.9 Study Limitations	49
CHAPTER 4 FINDINGS	50
4.1 Process Findings	51
Gender-Related Findings	51
Citizenship Findings	52
Non-Participant Findings	52
Demographic Findings	55
4.2 Case Study 1: HU University	56

Overview of HU University and Participants	56
Research Question 1: HU	57
Research Question 2: HU	61
Research Question 3: HU	62
Research Question 4: HU	66
Research Question 5: HU	68
Conclusions for HU	71
4.3 Case Study 2: MU University	74
Overview of MU University and Participants	74
Research Question 1: MU	75
Research Question 2: MU	79
Research Question 3: MU	81
Research Question 4: MU	85
Research Question 5: MU	86
Conclusions for MU	91
4.4 Case Study 3: LU University	94
Overview of LU University and Participants	94
Research Question 1: LU	95
Research Question 2: LU	98
Research Question 3: LU	99
Research Question 4: LU	102
Research Question 5: LU	104
Conclusions for LU	107
4.5 Cross-Case Analysis	110
Overview of Crossed Cases	110
Triangulation	112
Connection to Literature Review	113
Themes Across Cases	115
Cross-Case Highlights	122
5.1 Model and CI Practice Implications for Higher Education	124
5.2 Final Thoughts	128
REFERENCES	130
APPENDICES	137

Appendix A Email to Faculty Members for Interview	137
Appendix B Informed Consent Form.....	138
Appendix C Email to Department Head/Chair for Interview	141
Appendix D Telephone Recruitment Script for Department Head for Interview & Help.....	142
Appendix E Telephone Recruitment Script for Faculty Members for Interview	143
Appendix F Key Informant Confidentiality Agreement	144
Appendix G List of Land Grant Universities for Informants to Indicate Familiarity	145
Appendix H Knight Model.....	147
Appendix I Land Grant University History	148
Appendix J Paid Transcriber’s Confidentiality Agreement	149
Appendix K Email Text to Invite Informants	150
Appendix L Interview Questions.....	151
Appendix M Hudzik Definition Sheet for Interview.....	154
Appendix N Childress Excerpt About Model.....	155
Appendix O Codebook	156

LIST OF TABLES

Table 1: Assigned Interviewee Identities	p. 38
Table 2: Research Questions.....	p. 46
Table 3: Non-Participant Response Excerpts.....	p. 55
Table 4: HU Definitions of CI (prior to learning a definition of the term).....	p. 58
Table 5: HU Answers to Interview Question #4 about HU Intentionality of CI.....	p. 60
Table 6: HU Comments on Infrastructure.....	p. 64
Table 7: HU Institutional Network Types.....	p. 67
Table 8: HU Individual Support Answers to Interview Question #8.....	p. 68
Table 9: MU Definitions of CI (prior to learning a definition of the term)	p. 76
Table 10: MU Answers to Interview Question #4 about MU Intentionality of CI.....	p. 78
Table 11: MU Comments on Infrastructure.....	p. 82
Table 12: MU Institutional Network Types.....	p. 86
Table 13: MU Individual Support Answers to Interview Question #8.....	p. 87
Table 14: LU Definitions of CI (prior to learning a definition of the term).....	p. 96
Table 15: LU Answers to Interview Question #4 about LU Intentionality of CI.....	p. 98
Table 16: LU Comments on Infrastructure.....	p. 101
Table 17: LU Institutional Network Types.....	p. 103
Table 18: LU Individual Support Answers to Interview Question #8.....	p. 105
Table 19: Informant Ratings.....	p. 113

LIST OF FIGURES

Figure 1: Childress' Five "I" s of Faculty Engagement in Internationalization.....	p. 22
Figure 2: Non-Participants Ranked by Informants.....	p. 54
Figure 3: HU Word Cloud of Investment Responses.....	p. 62
Figure 4: MU Word Cloud of Investment Responses.....	p. 80
Figure 5: LU Word Cloud of Investment Responses.....	p. 99
Figure 6: Final Unit Ratings' Average	p. 119

CHAPTER 1

INTRODUCTION

1.1 Context and Purpose

We live in a globally connected world. To confirm this reality, one only need open a smart phone to get news from virtually anywhere on the planet or to obtain goods and services from businesses across national boundaries. In the United States (U.S.), one can also corroborate this reality by visiting a nearby college or university. American campuses have attracted substantial international student populations in recent decades. Further, many U.S. students experience the world through college and university sponsored engagement and mobility opportunities each year.

Higher education institutions (HEIs) have long understood their link to the global environment; ties that reach back to a time when Latin was their common language of instruction (Altbach, 2005). Indeed, for decades during the 17th and 18th centuries, university students traveled across national boundaries on grand tours aimed at gaining cultural understanding. Education is simultaneously a localized and international endeavor. Today, universities are called upon to prepare students to be productive citizens of their nations as well as professionals or employees who can participate in our globally connected and engaged communities. Educating students requires that HEIs take deliberate action to understand the international landscape and design instruction that produces students competent to address it.

Many universities have worked to initiate comprehensive internationalizing efforts during the last two decades especially, as the “global reconfiguration of economies, systems of trade, research, and communication, and the impact of global forces on local life” have proceeded apace (Hudzik, 2011, p. 6). The process of economic globalization has been underway for some

decades and can be tracked easily during the 20th and 21st centuries. Nonetheless, the advent and wide dissemination of immediate communication methods, due to the development of the internet, has accelerated the need for the average citizen to understand how to navigate international borders—both cultural and economic. Knight has observed that, “the international dimension is a key factor, shaping and challenging the higher education sector in countries all over the world” (2008, p. 3). However, there is not a consensus among stakeholders within higher education generally (university faculty, students, and staff) concerning why or how to engage internationally. Moreover, scholars and practitioners in the field do not agree on the significance of international concerns, nor do parents of university students or members of the public. The lack of consensus among multiple stakeholders, concerning these questions, provides one rationale for this inquiry.

This study explored faculty member engagement in comprehensive internationalization initiatives in civil and environmental engineering programs at three American universities. Since one primary mission of professors at tertiary institutions is teaching, their engagement is central in efforts to internationalize campuses. While the literature review below includes research that examined attitudes among faculty already involved in such initiatives, few studies have deeply explored whether professors possess a broad understanding of comprehensive internationalization. Further, few analyses have investigated why individual instructors were motivated to engage in internationalization despite the existence of logistical barriers to doing so. Indeed, while several scholars have proposed models suggesting how university leaders could engage their faculties in curricular internationalization, few analyses of professorial perceptions of such initiatives have been undertaken to date. Savishinsky has argued that while some institutions have successfully employed faculty committees to promote such engagement,

“researchers have found that even those institutions with campus-wide internationalization committees have achieved only moderate success in the operationalization of these plans, and modest success in the widespread engagement of faculty” (2012, p. 17). This fact suggests a need for additional research to understand more fully professors’ mindsets toward comprehensive internationalization in higher education. As keepers of the curriculum, faculty members bear the heaviest responsibility and enjoy an equal measure of opportunity for influencing university students’ learning and worldviews, global or otherwise.

1.2 Overview of Study

This research sought to understand faculty members’ meaning-making, motivations, and perceptions regarding comprehensive internationalization (CI) at three similarly organized higher education institutions (HEIs). For the purposes of this inquiry, I derived:

- *faculty meaning-making* from how faculty members personally described CI, related such efforts to their professional identity, connected/construed events based on personal experience with CI, interpreted personal situations of CI engagement, and tied CI to their long-term professional goals;
- *faculty motivations* from cited personal reasons for engaging or electing not to become involved in CI activities;
- *faculty perceptions* from how faculty members ranked/viewed CI efforts on campus and judged the value of such impacts and activities across the university.

Due to access and time constraints, this research focused on civil and/or environmental engineering faculty members. I sought to discover if university (including high level administration, college, and department official) efforts to engage sampled faculty members in CI on their campuses had influenced those professors’ meaning-making, motivations, and perceptions to engage globally. I employed a faculty engagement in internationalization model to analyze the perceptions of the faculty I interviewed.

1.3 Dissertation Outline

Chapter 1 outlines the basic context and purposes of this study and offers a brief overview of the dissertation. Chapter 1 also suggests how the terms within the dissertation title were defined for this study. Chapter 2 profiles previous related work and provides definitions and descriptions of CI. Chapter 2 also introduces relevant faculty engagement models, including the framework used for this study. Chapter 3 describes the research design and methods I employed. Chapter 3 also includes a review of relevant ethical concerns and validation strategies employed for this work. Chapter 4 presents this study's findings as case analyses one, two and three. It also offers a cross-case analysis of results. Chapter 5 sketches the implications of this effort's conclusions for the analytic framework it employed and for CI practice in higher education more generally.

CHAPTER 2 LITERATURE REVIEW

2.1 Definitions and Descriptions of Comprehensive Internationalization

Scholars have described comprehensive internationalization in various ways in the relevant academic literature. Several descriptions of the phenomenon are used interchangeably among scholars and leaders of HEIs in the United States. These include *comprehensive internationalization*, *internationalization*, *globalization*, and *global engagement*. These descriptors overlap, but also embody important differences. In consequence, prominent researchers of this subject including, Knight, Childress and Altbach typically begin their analyses by articulating the definitions on which their efforts rely.

Hudzik, another high-profile scholar of higher education, offered a well-known definition of comprehensive internationalization (CI) in a report in 2011:

... a commitment, confirmed through action, to infuse international and comparative perspectives throughout the teaching, research, and service missions of higher education. It shapes institutional ethos and values and touches the entire higher education enterprise. It is essential that it be embraced by institutional leadership, governance, faculty, students, and all academic service and support units. It is an institutional imperative, not just a desirable possibility. Comprehensive internationalization not only impacts (sic) all of campus life but the institution's external frames of reference, partnerships, and relations. The global reconfiguration of economies, systems of trade, research, and communication, and the impact of global forces on local life, dramatically expand the need for comprehensive internationalization and the motivations and purposes driving it (Hudzik, 2011, p. 6).

Hudzik's description firmly associated higher education with a globally engaged mission. CI has since been adopted by educators and administrators seeking to promote broad change in the teaching and learning cultures on their campuses. Most senior officials and others working full-time in the promotion of global engagement on American campuses recognize that to accomplish their aims, they will need to prompt departmental chairs and faculty members to move beyond the disciplines that their units have long represented. Compartmentalization, or

siloeing, occurs when those professors are only able to recognize or value one dimension of CI or do not grasp its potential value for their curricula or incentives to engage with representatives of other disciplines on campus.

Past investigators of university efforts to realize CI have found that those most serious about such initiatives are likely to exhibit activities from the following list:

- Providing “education and advocacy for CI...both internally and externally” (Hudzik, 2011, p. 2)
- “... integration of all international students and scholars into the campus living and learning environment” (Hudzik, 2011, p. 3)
- Creating learning (research/study/service) abroad programs opportunities for mobility (Hudzik, 2011, p. 3)
- Establishing outcomes “for internationalization incorporating knowledge, attitudes, and skills outcomes” (Hudzik, 2011, p. 3)
- Encouraging faculty “to enhance international comparative, and global perspectives in their teaching and scholarship” (Hudzik, 2011, p. 3)
- “Recruiting more international students and more international faculty” (Merckx & Nolan, 2015, p. 1)
- “Improving policy support...This might include policies on promotion and tenure, funding, credit and tuition transfer, and risk and safety” (Merckx & Nolan, 2015, p. 25)
- Providing international mobility opportunities for faculty “at various levels to spend part of their academic career learning about another culture” (Merckx & Nolan, 2015, p. 24)
- “Engagement through partnerships ... in collaboration with overseas partners and including such things as the establishment of research programs, study abroad centers, and/or branch campuses” (Merckx & Nolan, 2015, p. 25)
- Making fundraising for internationalization a university priority (Merckx & Nolan, 2015, p. 29)
- Establishing offices “designated to coordinate campus-wide internationalization activities” and building “essential frameworks for implementing internationalization” (American, n.d., para. 4)
- Creating campus-wide committees and institutional networks to support internationalization (Childress, 2010, p. 142)
- Articulating and promoting the message of CI (Hudzik, 2011, p. 4)

Another term, commonly used in lieu of CI, is internationalization. This designator implies that such efforts occur in only one or two dimensions of the institution (i.e., a focus on bringing more international students to campus) but does not reach the character or content of curricula or other

forms of curricular or campus engagement. That is, the term internationalization is not as holistic as CI.

Knight has also defined internationalization and connected it to the purposes of higher education: “Internationalization at the national/sector/institutional levels is the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of higher education at the institutional and national levels” (2008, p. 21). Although internationalization is not comprehensive, it does offer choice to individual institutions and faculty members. As a result, such efforts can be conceived as functioning as a subset of comprehensive internationalization. Indeed, Altbach and Knight have observed that, “internationalization involves many choices” (2007, p. 291). These selections allow leaders to address internationalization on their campus in ways that suit their institutions’ histories, cultures, and strategic operating environments. As such, Knight has explained that internationalization is a process of change “tailored to meet the individual needs and interests of each higher education entity. Consequently, there is no ‘one size fits all’ model of internationalization” (2012, p. 2). Indeed, Stohl has underscored the need for individual HEIs to choose their strategy carefully with an eye to the diverse interests and needs of their faculties:

[We] must also recognize the differing cultures among different scholarly fields with respect to internationalization. We must understand that physics faculty members behave differently than chemists, biologists, and mathematicians, and almost all the scientists are different from the engineers. The expectations of rewards and the costs of participation or nonparticipation are different. Faculty members who run laboratories have very different needs and resources than those who participate in central facilities or have no need of laboratories at all (2007, p. 369).

In contrast, some analysts have suggested that even universities with customized implementation plans should include certain elements of internationalization if they desire to be recognized as a globally engaged university. For example, Niehaus and Williams have argued

that curricular transformation is key to effective internationalization (2015, p. 59). While Hudzik (2011) has acknowledged the importance of individualized internationalization plans for universities, he also has presented a common set of components of such efforts for HEIs:

Manifestations of a global higher education system include, but are not limited to, rapidly expanding exchanges of students and faculty, the emergence of global institutional ranking schemes, dual and joint cross-border degree programs, international higher education consortia, cross-border collaborative research and projects, and rapid growth of global higher education capacity (Hudzik, 2011, pp. 16-17).

Apart from internationalization, other related terms are not accepted as readily by relevant stakeholders. Globalization, for example, differs fundamentally from internationalization's focus on education in its concentration on economics; "Globalization refers to global economic integration of many formerly national economies into one global economy, mainly by free trade, and free capital mobility, but also by easy or uncontrolled migration" (Daly, 1991, para. 1).

While universities exist within economic and political realities, their historic identities spring primarily from educational service. It is important to note that HEIs and the individual professionals they employ, are not dichotomous in their foci in such terms, but instead evidence a wide variety of relative degrees of emphasis on the marketplace and/or public knowledge. Moreover, the term globalization is a contentious one in higher education due to its ties to economics. Although entrepreneurship and innovation are largely viewed positively in higher education, some in the academy find efforts to emphasize the links between universities and the market distasteful and view any such links as academic capitalism. The term academic capitalism has been described by Rhoades and Slaughter as a change in the "nature of the professional workforce in higher education" (1997, p. 9) such that it is:

... being restratified [sic.], restructured, and reconfigured...In the process, the content of work in the academy—of curriculum development, research, and service—is shifting and

being redefined. We characterize these trends as the emergence and growth of academic capitalism, of increasingly managed professionals, and of supply-side higher education focused on economic competitiveness (1997, p. 9).

Rubins has explained that academic capitalism exists when “knowledge is construed as a private good” and that this model of higher education “sees little separation between science and commercial activity” (2007, p. 4). Rubins has also argued that, “unlike the public good knowledge regime, the academic capitalism knowledge regime values knowledge privatization and profit taking in which institutions, faculty, and sponsoring corporations have claims that come before those of the public” (2007, p. 4). Hoffman has argued that academic capitalism should be seen as “an umbrella term for capturing the wide array of market and market-like activities universities engage in to generate external revenues from education, research, and service” (2012, p. 12). He has observed that the “the term poses an oxymoron, violating the common conception that academics should be motivated by the pursuit of new knowledge and the elevation of learning over profit” (2012, p. 12). This is to say more generally that some analysts have leveled criticisms at HEIs that have appeared to seek to attract students based principally on economic advantage. Undeniably, as inflation adjusted state-based funding has declined for public American HEIs in recent decades, those institutions have struggled to meet their budget needs. That trend has prompted a focus on generating funds from diverse sources. For example, many public universities have focused heavily on attracting talented international students willing to pay out-of-state tuition and fees. Some critics would view such an emphasis as an example of academic capitalism, while others in higher education have viewed it more positively and argued that it represents as an opportunity to combine internationalization *and* income generation.

In any case, Altbach and Knight have encouraged HEI leaders to be careful when embarking on such initiatives by contending that, “today’s emerging programs and practices must ensure that international higher education benefits the public and not simply be a profit center” (2007, p. 304). In this view, HEI leaders should regularly examine the balance between their academic mission and the economic realities they confront. University administrators and professors each have a stake in the financial and academic needs of their institutions, but challenges arise when these stakeholders embrace differing views of what is of greatest importance. Sometimes these groups focus on competition, while, at other times, they may focus on collegiality. Truly, in American HEIs today “mission competes with money in university decision-making” (Massy, 2016, p. 21), and not all university administrators and faculty members interested in ensuring new revenues are convinced that internationalization will secure that result. Moreover, some “faculty skeptics and opponents of internationalization prefer to focus on the domestic milieu” and have expressed concern that an “institution’s focus on internationalized curriculum is symbolic of a shift toward a consumer-focused approach to higher education” (Childress, 2010, p. 33). Some of these skeptics equate all internationalization efforts with ongoing economic globalization and academic capitalism. Even Hudzik (2011), whose definition of comprehensive internationalization is employed in this study, coupled research with comments about economies and trade systems. However, individual attitudes about CI in higher education are not univalent, but rather complex. Each institutions’ approach to CI exists somewhere on a spectrum in terms of relative focus between academic capitalism and educational gain and HEIs may not remain at one point on that continuum continuously. Despite fears regarding the influence of academic capitalism, many CI initiatives in American higher education have sought to foster environments in which students could develop a “diversified

worldview,” comprehension of “international dimensions of their major fields of study,” effective communication, and “cross-cultural sensitivity and adaptability” (Childress, 2010, p. 13).

In recent years, some in higher education scholarship have employed the term global engagement as interchangeable with CI and/or internationalization. In fact, many universities have renamed their study abroad offices or international program positions to reflect this orientation, e.g. *Global Education Office* or *Director of Global Engagement*. Global engagement is markedly different than CI or globalization, however, as it is about ensuring that institutions are active transnationally, which is not the same thing as the trade/exchange flows and changing technologies that are resulting in quickening economic and social interdependence, nor of expansive efforts to secure curricular change to incorporate international concerns.

The term global engagement emerged to indicate a desire among colleges and universities to connect with global problems and issues, but not simplistically to embrace academic capitalism. In 2017, I defined global engagement for myself when I could not find an adequate definition in the literature. I argued that the concept refers to a deliberate choice to consider and act in response to a perceived international need, concern, or issue by a nation, institution or individual (Cranwell, 2017). Within the context of higher education, this definition refers to the need for college and university educators to connect their internationalization efforts to the global challenges their students will meet in their workplaces and daily lives. These can be addressed through actions designed to teach students needed capacities, including intercultural competencies and knowledge of contextual differences. Students can attain these professional skills in a variety of ways; experiential learning is one way. Ramaswamy and Ramaswamy have explained that, “experiential learning encompasses a variety of activities including

internships, research, and work experiences in educational settings. Well-planned, supervised and assessed experiential learning opportunities can stimulate academic inquiry so that the knowledge acquired in the classroom setting can then gain relevance” (2016, para. 1).

The American Council on Education (ACE) created a Blue-Ribbon Panel on Global Engagement in 2010 and published its report in November 2011. Pelletier wrote about the ACE report in 2012 arguing that the Council had:

developed a portfolio of programs, research, publications, tools, and services that have helped to enhance comprehensive internationalization on U.S. campuses and position U.S. higher education in a global context. But given that globalization continues to gain significance as a force in both higher education and in society writ large, the time was right for ACE to assess, refine, and perhaps expand its international activities. New approaches were needed to ensure that ACE was positioned to support and guide American colleges and universities in working strategically and substantively in a globalized higher education environment and highly interconnected world. ... Considering these new global contexts, the panel saw that a key challenge for ACE [would] be to create ways to help all its member institutions, large and small, to develop global engagement strategies consistent with their missions. To meet this challenge, ACE itself must embrace a strategic vision capable of succeeding in the dynamic world of globalization (Pelletier, 2012, paras. 2 & 6).

Interestingly, however, the ACE panel never defined global engagement in its report. Instead, the group argued:

... colleges and universities would be well served in developing their own strategies for global engagement through a process that defines core principles and practices, balances pragmatism with idealism, delineates comprehensive institutional strategies, aligns local and global interests, identifies possible models of global engagement, and integrates technology in the globalization of higher education (American, 2011, p. 5).

Clearly, there are many terms in use and many positive opportunities for university faculties to connect their teaching, research, and service efforts to the larger global context. As noted, I employed Hudzik’s (2011) definition of comprehensive internationalization for this study.

2.2 Faculty Engagement in Comprehensive Internationalization

This section describes what is known about faculty member engagement in comprehensive internationalization on university campuses. Indeed, Childress has observed that:

Faculty members' attitudes toward international learning directly impact (sic.) their willingness and interest to internationalize their courses, engage in research collaboration with international partners, and participate in service projects overseas (2010, p. 33).

Criswell and Zhu have acknowledged that "little is known about faculty member priorities with respect to internationalization" (2015, p. 22). Criswell and Zhu (2015) conducted their study as "part of the Faculty Internationalization Perceptions Survey (FIPS), a web-based research instrument" (2015, p. 25). They sent a survey to faculty members at two U.S. universities and one Canadian university in an effort to identify faculty member "priorities regarding engagement in internationalization" (Criswell & Zhu, 2015, p. 36). Their study concluded that professors were supportive of internationalization overall, but do not engage "due to a lack of resources and support" (Criswell & Zhu, 2015, p. 36). Several research studies have highlighted intrinsic motivations as a primary reason for why faculty members become globally engaged on their campuses. Klyberg (2012), for example, interviewed multiple faculty members at two small private universities. Most of the professors with whom she spoke had academic backgrounds in the liberal arts or human science disciplines. Klyberg found that faculty "participants were more intrinsically than extrinsically motivated to engage in [internationalization]. Specifically, participant engagement in internationalization generally predated institutional adoption of an internationalization initiative and came from personal experience" (2012, p. iv).

Navarro has also highlighted the importance of faculty champions in internationalization who are personally committed to its attainment. She has explained that, "a campus champion is

respected both by faculty and administrators, has power, and is a good educator, knowledgeable, change oriented, risk taker, a collaborator, and a ‘doer’” (2004, p. 42). Navarro’s champions of internationalization manifested extensive experience and accomplishment. Her interviews with faculty members serving in colleges of agriculture at two public land-grant institutions led her to observe that, “there is still little published information regarding the perspectives of random samples of faculty regarding strategies by which to internationalize the undergraduate curriculum” (2004, p. iii).

Savishinsky (2012) concluded that most professors he interviewed “... had conceived of a program based on personal interests, teaching expertise, and/or international experience. ...Very few faculty members with whom [Savishinsky] spoke were recruited to participate in ...” study abroad programs managed/owned by other professors or the institution (2012, p. 149). He explored the perspectives of professors working at three different types of HEIs: “a large research university, a private comprehensive university, and a community college” (2012, p. ii). Savishinsky interviewed faculty members from various disciplines with experience leading study abroad programs.

Sanderlin focused her research on known faculty champions and advocates of internationalization on one large public research university campus. She interviewed professors from liberal arts and business disciplines and found that, “despite the rationales offered by leadership and through strategic plans for becoming engaged in international concerns, the most common motivating factors identified by champions and advocates were intrinsic or personal influences that were not captured in institutional efforts to internationalize” (2012, p. ii).

Some studies have identified other factors that influence faculty member engagement in internationalization. For example, Schwietz surveyed professors at nine public universities in

Pennsylvania to investigate their attitudes, beliefs, experiences, and involvement related to internationalization (2006, p. iv). Her “key findings show[ed] that faculty who have higher international experiences scores have higher levels of involvement in internationalization” (2006, p. 140). Additionally, Schwietz suggested that intrinsic motivation is closely related to personal experience. Finally, she argued that multiple influences ultimately shape faculty engagement in internationalization in HEIs.

Viers (2003) also concluded that several factors affected faculty member engagement in internationalization, but he argued that intrinsic motivation was more significant than the other concerns he identified to be at play. Viers concluded that, “faculty interviewed became involved in international scholarship because of their internal make-up, the intrinsic rewards and to a lesser extent extrinsic rewards this form of scholarship brings” (2003, p. iii). Viers interviewed seven professors from one discipline (Area Studies) at one university. All of his study’s participants were actively engaged in internationalization-related activities.

Childress’ (2008) dissertation research focused on the ways HEI leaders seek to motivate faculty members to engage in internationalization initiatives. In an analysis of professors at two different types of educational institutions Childress found that, “after an internationalization plan has been developed, a senior administrative leader must charge a high level, interdisciplinary group of faculty and administrators with the authority and resources to oversee [its] implementation” (2008, p. 334). She interviewed HEI administrators and university committee members charged with realizing such aspirations to determine how they sought to engage faculty members in comprehensive internationalization efforts. Childress had noticed, “a gap in the literature on how committees are communicating the goals of internationalization plans to faculty

at large in order to advance the campus in transitioning from planning to operationalization phases of internationalization” (2008, p. 74). She concluded that:

The intentional development of faculty engagement in Duke and Richmond’s internationalization was achieved through the creation of multiple types and levels of internationalization plans, which formalized internationalization as an institutional priority and provided focus, organization, and resources for faculty to engage (2008, p. 307).

Based on her findings, Childress created a model for faculty engagement that she dubbed the Five I’s of Faculty Engagement in Internationalization (2008, p. vii). I employed her framework for this study and outline its tenets in section 2.3 below.

Other scholars, including Dewey and Duff, have argued that “our global era requires globally competent citizens” (2009, p. 491). The American Council on Education has similarly observed that, “one of the fundamental duties of U.S. higher education is to prepare students for productive and responsible citizenship. In the early 21st century, this means preparing students to live and work in a society that increasingly operates across international borders” (2012, p. 3). These arguments highlight the need for strong and broad faculty member engagement in CI initiatives. Higher education has always been tied to the preparation of future generations, which is largely accomplished through curricular content. Advocates of comprehensive internationalization have contended that shifts in societal norms, growing international communication and interconnectedness, and the close links between employment options and professional fields suggest that HEIs should undertake such efforts. Indeed, “The International Association of Universities confirmed the need to improve the preparation of university students as national and global citizens” (Ayoubi, 2019, para.2).

However, Stromquist has challenged the motives of HEIs and faculty members who cite student preparation as their animating goal to engage globally and contended that

competitiveness and power may be their primary motivators instead (2007, p. 84). Viers has expanded on the idea of multiple galvanizing factors incentivizing internationalization by arguing that, “in terms of factors that motivate faculty to sustain their involvement in international scholarship, four themes emerged including the internal make-up of the individual, intrinsic rewards, extrinsic rewards, and external factors” (2003, p. 104). Cooper and Mitsunaga found similarly that for faculty members “extrinsic rewards, such as funding and travel, seem to have more importance in the initial stages of these international efforts, when there is a need for equipment or when faculty are being recruited for a particular project” (2010, p. 79). These scholars also found that intrinsic motivations emerged later and motivated professors to continue international partnerships even when fiscal support dwindled.

The literature highlights other extrinsic factors linked to faculty engagement in comprehensive internationalization. First, there is the aspiration or pressure for status or prestige. For professors and their universities alike, stature relates to the desire to be ranked highly in evaluation systems and to extend their salience and influence. For colleges and universities, it often also leads to mimicking perceived leaders in the sector. This phenomenon, an example of what organization theorists have called mimetic isomorphism, is increasingly a factor in HEIs, whose executives wish them to be viewed as global universities in ranking/scoring systems (Dimaggio and Powell, 1983).

For their part, Merx and Nolan examined senior international officers’ experiences in higher education and argued, following Max Weber, that leaders’ efforts to position their institutions were “shaped by the interaction of wealth, power and prestige” (2015, p. 20). Olson, Green, and Hill also found an “intensified interest in international and global matters on many campuses across the country” (2008, p. v). It is not uncommon for senior international

administrators to seek top-down solutions to trends linked to global engagement by highlighting or acting in ways that quickly identify the institution as a global player in rankings. For example, one trend is to encourage faculty to publish their research in internationally focused outlets. Some universities and colleges have also hired “star” faculty to increase their global standing (Stromquist, 2007, p. 96). Following the desire for status or prestige, power is a second external factor that analysts have argued shapes the likelihood and character of faculty engagement in CI. Perceived prestige and power are closely coupled.

One great challenge in university internationalization efforts concerns the decision of who is to lead such initiatives. Faculty members, especially in the United States, are accustomed to relative autonomy. Furthermore, most in the academy agree that professors should control curricula. Therefore, pressure on faculty members by administrators to internationalize does not by itself guarantee such outcomes. Consequently, some institutions have offered their professors incentives and grants to encourage internationalization and participation in related activities. Nonetheless, such incentives have not always led to sustainable comprehensive internationalization programs. While a clear commitment by senior administrators is important, top-down calls for change alone, in general, have not worked to engage faculty members on a sustained basis, according to several studies of faculty engagement in comprehensive internationalization initiatives. For example, Hudzik has argued that:

Successful CI is not the product of well-meaning, but heavy top-down decision-making by presidents and provosts. Neither is it only the result of bottom-up populism, but a product of these two processes in concert to pursue consensus (2011, p. 3).

Engberg and Green expanded on this idea by arguing that university presidents and senior leaders need to send consistent recurring messages to their faculties if their efforts are to result in vigorous and widespread support for internationalization (2002, p. 13). The lesson of this stream

of inquiry seems to be that clear, open, and persistent communication and collaboration are key to engaging faculty in CI in a lasting and meaningful way.

Building a positive academic reputation or image is a third factor that influences faculty member engagement in CI. However, involvement based on academic reputation alone can produce shallow involvement. Faculty commitment to CI must also be connected to professors' teaching duties and conceptions of student development. Recruiting talented students to campus relates to teaching and purpose, therefore a positive international academic reputation can play an important role in attracting top students to specific disciplines, which can be beneficial to faculty members and the university as well. For this reason, professors may perceive value in recruiting international students to their departments, but ignore other components of comprehensive internationalization efforts. Such a failure among faculty members to connect students beyond their disciplines (or research groups) to the larger aspirations of CI is likely to have negative consequences because, "internationalization has become an increasingly important trend in higher education" (Childress, 2010, p. 1). Childress has suggested that this motivation has been catalyzed by "... national and global events ... September 11th and the War on Terror have demonstrated the importance of international knowledge for national security and global peace" (2010, p. 1). This imperative appears even more pronounced now, in 2020, as a global pandemic touches all areas of lives and livelihoods of the populations of nations throughout the world.

Altbach has likewise called on HEIs to embrace internationalization and argued doing so is essential because, "history shows that when universities shut themselves off from economic and societal trends, they become moribund and irrelevant" (2005, p. 6). Taken as a whole, these streams of scholarship suggest that few faculty members become involved in internationalization

efforts for only one reason. This fact complicates the reality that universities require faculty member support to pursue CI-related efforts.

It also appears that faculty are motivated by factors beyond their role in the university's teaching mission when they consider internationalization. For example, Olson et al. have argued that while:

Many campuses across the country are working to advance internationalization ... [where change is needed to] shift from focusing chiefly on inputs ... to articulating and assessing student learning outcomes [and this] ... has not been an easy one, because these changes require significant rethinking of curricula, pedagogy, and faculty roles and rewards (2008, p. 2).

A fourth factor influencing faculty participation in CI initiatives is the existence of support for professors to begin/continue in internationalization effort(s). The term "support," as used here, encompasses provision of faculty training to lead international groups as well as efforts to acquaint them with best practices to collaborate with partners in other nations, logistical help (in budget preparation, travel, recruitment), institutional infrastructure (insurance, legal aspects, policy), funding, and communication (a clear understanding of which offices provide different types of assistance and timing for internationalization efforts). As noted above, two scholars particularly, have developed well-known and important engagement models aimed at engaging more individuals on campuses, especially faculty members, in internationalization efforts: Knight (1994) and Childress (2008).

2.3 Internationalization Engagement Models

The Knight and Childress analytic frameworks have each highlighted systems of support and communication that they argued help to shape faculty member engagement in CI. Knight has suggested that she developed her model (see Appendix H) out of a desire to devise, implement, and review internationalization strategies for universities because of the topic's increasing salience and importance in higher education (1994, p. 1). She has argued strongly that

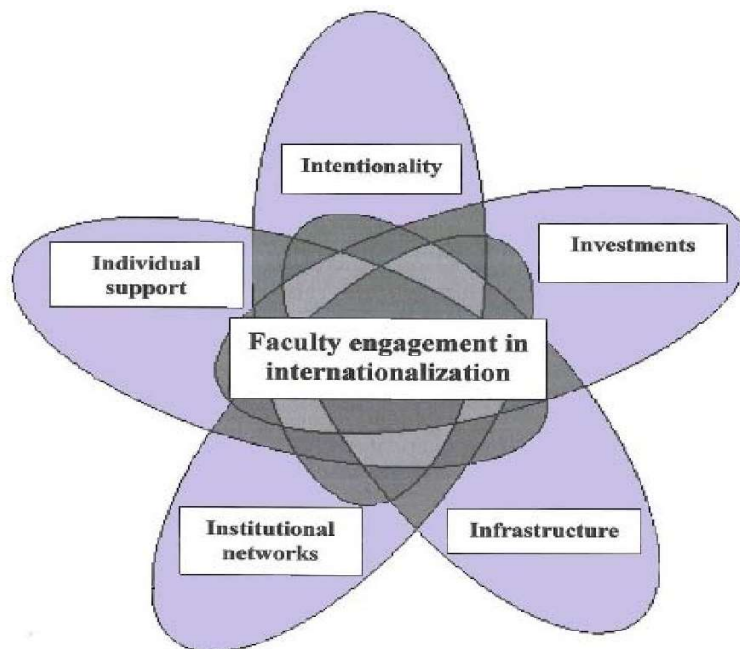
“Internationalization cannot be owned by a small group [within an HEI and on individual campuses], as it then becomes marginalized and can be seen as an exclusive, rather than an inclusive, issue” (1994, p. 12). Knight (1994) dubbed her model the Internationalization Cycle. She was concerned that faculty international engagement had been limited to an exclusive group of senior administrators and other supporters who had not taken the time to foster involvement among those who did not initially understand or agree with such efforts. For these reasons, she argued that both “supporters and naysayers need to be heard” (1994, p. 12). Her cyclical model, influenced by strategic planning frameworks, encouraged: establishing *awareness*, obtaining broad *commitment*, *planning* thoroughly and strategically, *operationalizing*, *reviewing* impact, and providing *reinforcement* of participation (1994, p. 12). Knight (1994) imagined her model as one that leaders, involved with implementation of CI on campuses, could adopt to build and sustain a strong ethos of faculty and staff support.

While Knight’s framework is well respected in the field, Childress’ model of faculty involvement in internationalization is also well regarded. In fact, Childress used Knight’s model as her dissertation framework, which led to the creation of her own framework in 2008. I did not use Knight’s approach in this analysis for three reasons. First, Knight’s model assumed a supportive culture for integrating internationalization. While top HEI leaders might want to foster such a culture, her model seems to ignore the fact of strongly unsupportive cultures that exist at many universities. Second, Knight’s framework considers integration for students, staff, and faculty together. I am persuaded, however, that professorial integration in internationalization requires a unique framework designed to communicate, support, and partner with that group individually. Third, the Knight model includes numbered stages of progress that make it appear that each step toward engagement is separate. Even though there are arrows

between the numbered stages, the Knight model implies a context conducive to a linear approach, instead of an interconnected, collaborative mélange of actors producing an often messy and unpredictable reality.

Childress, meanwhile, has described her approach “As a cybernetic model, this faculty engagement framework emphasizes the interconnectivity among institutional subsystems, feedback loops, and stakeholders” (Childress, 2010, p. 139). Childress’ framework, shown in Figure 1 below, “is visually depicted as a Venn diagram” and includes connecting and overlapping loops of intentionality, investment, infrastructure, institutional networks, and individual support all producing faculty engagement in internationalization (Childress, 2010, pp. 139-140).

Figure 1: Childress’ Five “I” s of Faculty Engagement in Internationalization



Source: Childress, 2008, p. 306; Childress, 2010, p. 140.

Childress’ approach was born out of a desire “to develop widespread faculty involvement” because professorial engagement is so important “to successful internationalization

efforts, [and] numerous obstacles exist which [*sic.*] impede faculty involvement in internationalization” (2010, p. 29). All the factors Childress highlights (*intentionality, investment, infrastructure, institutional networks, and individual support*) address the need to provide faculty members organizational backing to secure their sustained engagement in internationalization. I briefly suggest how this is so by next considering each of the elements in her model.

According to Childress, intentionality, “was achieved through the creation of multiple types and levels of internationalization plans, which formalized internationalization as an institutional priority and provided focus, organization, and resources for faculty to engage in internationalization” (2010, p. 140). For Childress, investment implied institutional targeting of resources from “diverse sources,” (Childress, 2020, p. 141) including investment from the university itself. Financial resources assured support of central international offices and helped to defray faculty’s financial costs of participation (i.e., passport and insurance fees). Both institutions in Childress’ research sample communicated to faculty members the importance of their engagement in internationalization by providing sufficient resources and clearly suggesting how to access them (Childress, 2010, p. 141). For Childress, infrastructure connoted, “organizational and programmatic resources through which [faculty may] ... explore international perspectives within their teaching and research agendas” (2010, p. 141). Additionally, she argued that this factor may include: “academic activities and organizational practices, such as faculty seminars, international degree programs, and a campus overseas” (2010, p. 141). Institutional networks, “are essential to create communication channels for faculty to learn about international opportunities, resources, and their colleagues’ areas of expertise and regional interests” (2010, p. 142). Finally, in Childress’ model, individual support

was necessary “for faculty to connect institution-wide goals for internationalization with their individual scholarly agendas” (2010, p. 142).

2.4 Challenges in Understanding Faculty Engagement

Although Childress’ (2010) organizational change model covered a wide range of needed faculty support mechanisms to encourage engagement in CI, I also discovered several other relevant factors in the literature that may constitute barriers to such professorial involvement that Childress’ framework does not directly address. For example, Savishinsky (2012) reported that HEI leaders need to consider several disincentives when developing strategies to secure support for CI efforts such as tenure and promotion policies that do not support internationalization. Additionally, while past research has examined trends in motivations and barriers to faculty engagement in CI, those initiatives have not routinely included a broad set of disciplinary voices. In particular, STEM faculty voices have not been included in research addressing CI. These differing perspectives are necessary to effect systematic institutional change to diversify and broaden faculty participation in comprehensive internationalization. Indeed, according to the ACE Blue Ribbon Panel on Global Engagement:

Many institutions—indeed, perhaps most of them—suffer because global engagement has grown haphazardly, and ad hoc as individual programs and faculty members have pursued international interests independently. That often forces institutional leaders to then struggle post hoc to articulate a rationale for the institution’s particular mix of international activities and to tie that rationale to the institution’s mission and history. The result often is a collection of discrete initiatives that may be broad, but is often not deep or cohesive, and that does not advance significantly the strategic priorities of the institution (American, 2011, p. 19).

ACE has also produced a report concerning the steps necessary to engage faculty in internationalization that argued:

[R]ecognizing that faculty are crucial to internationalization is one thing—getting them involved is another. Faculty are extremely busy and often feel pulled in multiple, competing directions ... faculty are often ‘inherently skeptical.’ For those who have been

around for a while, internationalization may seem like a passing fancy—yet another administrative fad that will come and go—and nothing to get too excited about or involved in...Despite these obstacles, given the priority many campuses are placing on internationalization, most have at least *some* level of engagement in the process by at least *some* faculty. Almost certainly, there are faculty scattered around campus who maintain personal and professional relationships with counterparts abroad, often over long periods. A handful of faculty [members] may travel overseas for conferences or lead a student group as part of a course. Some disciplines lend themselves nicely to international course content, and faculty may emphasize these areas in their teaching. The challenge, however, is to strategically scale up and systematize faculty engagement in internationalization (American, 2013, p. 1).

This ACE analysis went on to address other challenges involving comprehensive internationalization such as 1) “Achieving a ‘Critical Mass’” 2) “Tenure and Promotion Policies,” 3) “The Budget,” and 4) “Build[ing] Strategic Relationships Abroad” (American, 2013, pgs. 4, 8, 13, 18). Clearly, American university leaders desirous of enlisting faculty members in CI initiatives must begin by first listening to faculty voices.

Another lacuna in this literature is the fact that engineering faculty members’ perceptions of CI have not been explored well to date. This gap is particularly significant because program enrollments in that discipline are rising. As Yoder has observed, “degrees awarded to students graduating with a bachelor’s degree from an engineering program increased by 7.5 percent from 2014 to 2015, continuing a trend of annual growth since 2007” (2017, p. 1). More generally, the literature has not systematically included individual professors’ voices in its development of engagement models, and a host of other important topics (understanding views on internationalization regarding tenure, disciplinary culture, access issues, time for private life, research, preparedness to teach/lead/manage students in international experiential learning environments, knowledge of budgeting, and risk factors) related to engaging faculty members effectively in internationalization. In fact, Childress did not develop her model based on

interviews with faculty members in departments and colleges, but instead she interviewed a sample of top university administrators.

However, as I noted above, a few scholars have explored faculty member responses to internationalization activities and their work has highlighted the need for more such analyses so that institutions can better understand professors' needs and interests for engaging in CI. For example, Vaz and Demetry have studied how a sample of faculty members responded to a research based international experience at a polytechnic HEI in the U.S. They reported that "STEM [Science, Technology, Engineering and Mathematics] faculty may be reluctant to get involved and are likely to benefit greatly from preparation and mentoring" (2010, p. 4). As they observed:

Goode (2008) found that the faculty in the study tended to overestimate their own intercultural competence and were 'most significantly challenged' in that area, observing that the faculty had a 'lack of awareness about, and interest in' the intercultural roles they were called on to play. In addition, faculty tended to assume that their academic roles would be like those on campus, an assumption that might not hold, especially for experiential programs. No studies have been conducted regarding the preparedness of STEM faculty to lead international programs, but it is likely that group would face at least as many challenges as the liberal arts faculty participating in Goode's study (Cited in Vaz & Demetry, 2010, pp. 1-2).

Overall, this literature review has demonstrated a need for additional research to understand more fully faculty members' meaning-making, motivations, and perceptions regarding comprehensive internationalization. Again, as stated earlier, for the purposes of this inquiry, I derived:

- *faculty meaning-making* from how faculty members personally described CI, related such efforts to their professional identity, connected/construed events based on individual experience with CI, interpreted personal situations of CI engagement, and tied CI to their long-term professional goals.
- *faculty motivations* from cited personal reasons for engaging or electing not to become involved in CI activities.
- *faculty perceptions* from how faculty members ranked/viewed CI efforts on campus and judged the value of such impacts and activities across the university.

Moreover, the relevant literature has suggested that not all faculty are alike across disciplines. Different disciplinary groups require targeted consideration when encouraging them to engage internationally because the flow of their work is closely tied to the foci of their fields.

In addition, engineering professors, particularly, have not been widely interviewed by CI scholars. Of the studies in this literature review that included engineering faculty members, all involved them alongside other STEM faculty, which arguably overgeneralizes already large groups of disciplines. Moreover, the many studies analyzed for this review did not employ qualitative methods when exploring engineering faculty perceptions regarding internationalization. While quantitative research is helpful, individual voices should also be heard in order to reduce stereotyping and to provide textured understanding so as to inform senior administrators more effectively as they develop efforts to engage faculty members in CI.

2.5 The Problem of Practice

The problem of practice is that while senior leaders at American universities are increasingly seeking to internationalize their campuses to remain globally relevant and prepare their students for the future, few such efforts appear to engage individual faculty members in ways that lead to a sustainable critical mass of support for CI. Comprehensive internationalization requires input from multiple stakeholders. Put differently, CI's attainment ultimately depends on both top-down and bottom-up efforts. This literature review has suggested that top-level university/international administrators must intentionally, persistently, and effectively promote CI's importance to a broad population of faculty members to make CI sustainable. For example, the American Council on Education (ACE) has argued that,

this process [of comprehensive internationalization] requires a clear commitment by top-level institutional leaders [to ensure that it] meaningfully impacts the curriculum and a broad range of people, policies, and programs, and results in deep and ongoing

incorporation of international perspectives and activities throughout the institution (2012, p. 3).

Nonetheless, faculty engagement in internationalization is not widespread at many higher education institutions. Furthermore, I have argued that the models that universities use to engage faculty in such efforts (when they try to do so) often do not account for differences among academic disciplines. Faculty involvement is often seen as a one-size-fits-all challenge that does not include the unique characteristics of disciplinary cultures or the range of challenges involved in planning appropriate and meaningful international experiences for students. For example, a study abroad program aimed at teaching students how to perform coastal engineering research in the Dominican Republic is quite different from one exploring art history in Italy and the content and character of each would differ markedly.

Another challenge to securing a critical mass of faculty engagement in CI is abiding confusion concerning who should lead endeavors to institutionalize such efforts. All professors and staff are central to the mission of the universities that employ them. However, faculty members are especially critical to the teaching mission of their institutions because they are the expert designers and conveyors of the classroom content that shapes the bulk of student learning on university campuses. The autonomy that professors in the United States possess regarding this critical dimension of university functioning always leads to consideration of whether CI should be a “bottom-up” or “top-down” initiative. Kezar has pointed to an underlying divide between administrators and faculty members in higher education and claims that “Administrators are often pulled toward standardizing and centralizing processes, whereas faculty often favor decentralization and collaboration on processes” (2014, p. 93).

This literature review revealed that top-down engagement in CI initiatives is a necessary condition for their success, but not a sufficient one (Hudzik, 2011, pgs. 22, 24). Critical numbers

of faculty, from all disciplines, must engage in CI if it is to be broadly adopted and prove sustainable. As Childress has argued, “in order to develop widespread faculty involvement, the engagement of latent supporters, skeptics, and opponents is critical” (2010, p. 29). The literature evidences a gap in practice because it demonstrates that only limited groups of faculty members regularly engage in CI decisions at many institutions. Furthermore, in practice, CI is ignored by large numbers of faculty members and therefore is not often considered by senior leaders engaged in policymaking at many universities. One frequent example of this oversight arises when tenure and promotion policies do not incorporate the CI mission and instead present obstacles to its realization.

CHAPTER 3 RESEARCH DESIGN AND METHODS

The purpose of this study was to investigate a sample of university-based engineering faculty members' meaning-making, motivations, and perceptions regarding comprehensive internationalization (CI) on their campuses. The sample for this analysis was comprised of sixteen faculty members from three universities. More specifically, this study recorded a sample of civil and environmental engineering faculty member voices relating to CI and explored their views about their university's efforts to engage in such initiatives. I intentionally sought voices from a range of professors who identified as strong, moderate, or non-advocates of CI. As outlined in Chapter Two, I employed Childress' Five "I's" model of faculty engagement in internationalization to guide this inquiry. To reiterate, I employed the following definition of CI:

[A] commitment, confirmed through action, to infuse international and comparative perspectives throughout the teaching, research, and service missions of higher education. It shapes institutional ethos and values and touches the entire higher education enterprise. It is essential that it be embraced by institutional leadership, governance, faculty, students, and all academic service and support units. It is an institutional imperative, not just a desirable possibility. Comprehensive internationalization not only impacts (sic) all of campus life but the institution's external frames of reference, partnerships, and relations. The global reconfiguration of economies, systems of trade, research, and communication, and the impact of global forces on local life, dramatically expand the need for comprehensive internationalization and the motivations and purposes driving it (Hudzik, 2011, p. 6).

I investigated only higher education institutions (HEIs) located in the United States due to large differences in academic culture, staffing, and organization among universities located elsewhere.

3.1 Problem of Research

As mentioned in the literature review, the principal weakness of CI related research

to date, has been its failure to include a broad group of faculty member voices when investigating meaning-making, motivations, and perceptions for employees to engage in internationalization. Much of the inquiry concerning CI in higher education has focused on the perceptions of university administrators. Moreover, studies that did explore faculty attitudes and motivations concerning CI relied primarily on interviews with professors who were already advocates of internationalization.

The literature that has examined faculty motivation for deep engagement in CI efforts such as Sanderlin's (2012) study, concluded that intrinsic motives serve as a primary catalyst for faculty involvement rather than institutional promotion. Other researchers have confirmed the strength of intrinsic motivation for those faculty currently involved in internationalization activities, but those analyses have not engaged non-advocates. In essence, many faculty members participating in the CI space first became involved for personal reasons. However, the studies mentioned have not investigated how non-advocates could be motivated to engage, nor have those analyses explored the motivations for all levels of CI advocacy across disciplines.

3.2 Theoretical Framework

This study employed Childress' (2008; 2010) model of the Five I's to encourage Faculty Engagement in Internationalization: *Intentionality, Investments, Infrastructure, Institutional Networks, and Individual Support* (See Appendix N & Figure 1). Apart from the rationale shared above, I also selected Childress' framework due to its deep reliance on scholarship from strategic planning (Childress, 2010, p. 18) because university campuses are historically complicated, collegial, and slow-to-change. Change, at such institutions, has a larger chance of success if it begins with well-articulated and agreed upon goals. Additionally, the Five I's model

focuses on practical and interconnected interests and logistics likely to incentivize faculty members' consideration of internationalization.

Childress developed her framework based on research with top-level HEI administrators. She drew her sample for study from members of the Association of International Administrators (AIEA). AIEA's membership is largely made up of top-level leaders in international education on university campuses. Childress noted that she had selected, "AIEA as the population for investigation ... due to these institutions' demonstrated commitment to internationalization" (Childress, 2010, p. 162). I used Childress' model (see figure 1) to frame the research questions for this inquiry because I wanted to explore faculty perceptions of CI within the context of a framework developed based on university administrator perspectives. I sought to understand how faculty members perceived CI and its implementation on their campuses. Therefore, I fashioned each research question in tandem with the Childress model, which later also had direct influence on the crafting of interview questions. Table 2, on page 56, depicts the relationship of each research question to the five "I" s of Childress' model. By using her framework to establish the research and interview questions, I created an organized way to solicit faculty member perceptions of CI while at the same time creating an opportunity to reflect on the relative comprehensiveness and efficacy of Childress' model.

3.3 Researcher Positionality

I acknowledge that, in addition to my part-time doctoral student status, my experience working full-time at a large, land-grant university (as a staff member and later as an administrative/professional faculty member) in international education has shaped this research. Furthermore, my professional experience of working closely with civil and environmental engineering faculty members was one reason I selected that discipline's professors for study.

While I continually questioned my assumptions, my familiarity with the population I set out to investigate constituted a “prolonged engagement and persistent observation,” (Creswell, 2013, p. 250) which I viewed as a benefit.

My 19 years of professional work have illuminated the challenges of competing interests in higher education, the lack of communication that can exist among university administration and academic units, and the critical role that faculty members play in the development of student perspectives. I also recognize that I have strong views about comprehensive internationalization, including the belief that central HEI leaders need to find ways and means to engage academic units and their professors effectively in such efforts if they are to succeed. HEI leaders would do well to communicate with a broad group of faculty members, on a regular basis, to obtain their input regarding CI. I believe professorial input is critical because if strategic planning is completed by university top administration without seeking, *listening*, and creating (and continuously re-creating) consensus among faculty members (who teach students and conduct research daily) such plans will not be effective or sustainable. Furthermore, obtaining the viewpoint of employees in departments and centers is extremely important because students trust their academic “homes” and because professors expect to share responsibility for vital university decisions instead of receiving mandates from administrators. This is especially important when a campus is large and decentralized, as virtually all major U.S. research universities are.

In personal terms, I believe that there is no single truth about organizations and that multiple realities exist in each. I adopted an interpretive orientation for this analysis because I sought to “present the case[s] from participants’ multiple perspectives and meanings” (Yin, 2014, p. 220). I also believe that disciplinary characteristics and cultures matter when engaging faculty members in any university mission since professors in specific disciplines typically are

acculturated to uphold the norms and values of their fields. As a result, faculty are likely to reflect those norms and values when confronted with specific programmatic and curricular choices, especially those in which they had no say. Finally, as a professional working in the CI field, I have a strong understanding of the claims on faculty time, a definite bias regarding the importance of CI in higher education, and an overall suspicion that many HEI leaders do not regularly listen to multiple faculty voices or work overly hard to encourage professors to engage globally.

3.4 Research Design

I designed this analysis as a qualitative, comparative, multiple-case study. I conducted interviews at three public land-grant universities. For readers fully to understand the context of land grant university site selection, I provide a brief overview of the history of those institutions in Appendix I. I sampled all interviewed faculty members (tenured or tenure-track) from the same academic discipline groupings (civil and environmental engineering-CEE). Additionally, some interviewees held administrative positions in their respective universities in addition to their faculty status.

All faculty whom I interviewed for this study were employed by comprehensive, research producing institutions in their states, and those universities corresponded to broad regional areas within the United States, although they were not representative of the entire nation. Overall student populations differed by university as did the number of faculty members employed by civil and environmental engineering departments. Additionally, I purposely selected case study location sites based on a varied international ranking as determined by the *Times Higher Education (THE)* world university rankings (2017). I selected that ranking system because it is widely respected and is one of the few that provides a specific international outlook ranking.

THE, “is the only global university performance table to judge world class universities across all of their core missions—teaching, research, knowledge transfer and international outlook” (Times, 2017). THE ranks “international outlook [by] (staff, students and research) and judged[es] on international to domestic student ratio, international to domestic staff ratio, [and] international collaboration” (Times, 2017). THE ranked only 147 U.S. institutions (many of them were land-grant institutions) on this criterion of the 980 universities it otherwise included in its world rankings.

The three sites I selected differed in their university’s international outlook standing according to categories I developed from THE world university rankings information. The rankings for international outlook in U.S. institutions by THE ranged from 19.4 (lowest) to 85.6 (highest). I scored categories as follows: high (49.9 to 85.6), medium (34 to 49.8) and low (19.4 to 33.9). The high-ranking universities (HU) category contained eight U.S. land-grant universities. The medium-ranking universities (MU) category included 20 such institutions. Finally, the low-ranking universities (LU) category included seven land-grants. I chose a university from each category for this study so that faculty voices could be explored from institutions manifesting different levels of CI engagement.

The original cases I selected for this study included one university department in the East North-Central region of the U.S. Midwest, another in the West North-Central area of the U.S. Midwest, and a third from the West South-Central region of the U.S. South. All of those institutions had student populations between 26,000 and 42,000, and the number of faculty members in CEE departments ranged between 25-65, at the time of this study. I had to change my final selection of institutions due to a lack of participation from one department, but final institutional participants came from the same regions mentioned above and fell within the same

student and CEE faculty member population sizes. A detailed discussion of how I selected a replacement university appears in the findings section below. I picked two institutions from the U.S. Midwest because that region had the largest regional representation in the ranking categories. Possible West Coast selections either did not couple civil and environmental engineering in the same department or they were not ideal due to travel costs and logistics.

I used a qualitative research design for this study because I was interested in ensuring, “the collection of data in a natural setting sensitive to the people and places under study, and ... include[ing] the voices of participants, the reflexivity of the researcher, a complex interpretation of the problem, and its contribution to the literature or a call for change” (Creswell, 2013, p. 44). I aimed to listen to faculty voices regarding my topic and therefore I conducted interviews with individual professors. I employed a comparative study design to secure data similar enough to be analytically compared, but also sufficiently different so that it might possibly be transferrable to other faculty groups and useful to HEIs in general. I coded the faculty interview transcripts from all selected institutions simultaneously. I identified codes, categories, and themes respectively and then analyzed each case individually for distinct characteristics by university. Following that process, I analyzed the cases collectively and compared them.

After I selected institutions for investigation, I obtained approval for this study from Virginia Tech’s Institutional Research Board. I sent recruitment emails (see Appendix A) to CEE faculty members at selected universities based on their posted faculty listings online. More, I requested in the email that faculty members self-identify into one of three levels of advocacy in CI: strong, moderate, or non-advocates. I later compared those personal rankings of levels of advocacy with participants’ final personal global engagement ratings (see Appendix L). The recruitment email messages to faculty members also contained an informed consent form (see

Appendix B). Next, I sent an email to department chairs/heads similar to what I sent other faculty members (see Appendix C), but the message to department heads asked for help in encouraging faculty participation and a request to rank professors from their departments confidentially into the three levels of CI advocacy/engagement as noted above. I attached informed consent forms in the emails to department heads/chairs too (see Appendix B).

I completed 16 semi-structured personal interviews for this study. All interviews were audio recorded with the permission of the participants. I interviewed six faculty members from the high-ranked university (HU), six professors from the medium-ranked university (MU), and four faculty from the low-ranked university (LU). All participants completed and signed the informed consent form and provided it to me by email or in-person before the interview (see Appendix B). I completed 15 of the 16 interviews in-person on the faculty members' respective campuses, and I undertook one interview via online audio connection. I provided hard copies of the informed consent form during the in-person interviews in addition to the copy I had already shared via email. For the online interview, the interviewee emailed me the signed consent form before our interview. I requested time for one-hour interviews with the expectation that our exchanges would require between 30 and 60 minutes. I asked each interviewee, on a volunteer basis, to provide demographic, rank information, and time of years/service at their institution as the last question of the interview. All interviewees shared at least some demographic information with me.

I strove to have a well-organized and clear plan for this research. It was evident before, during, and after the interviews that this study addressed complex people, institutions, and challenges. I have intentionally withheld details concerning each university/department connected to this study in an effort to preserve the confidentiality of the identities of those I

interviewed. I assigned an identifier to all interviewees according to their university and interview order. Table 1 (below) provides the assigned interviewee identities for this study.

Table 1: Assigned Interviewee Identities

Interviewee Assigned Identity	University THE Rank Level	Date of Interview	Format
HU1	High	2/7/2019	In-Person
HU2	High	2/7/2019	In-Person
HU3	High	2/8/2019	In-Person
HU4	High	2/8/2019	In-Person
HU5	High	2/8/2019	In-Person
HU6	High	2/11/2019	Online
MU1	Medium	2/4/2019	In-Person
MU2	Medium	2/4/2019	In-Person
MU3	Medium	2/4/2019	In-Person
MU4	Medium	2/5/2019	In-Person
MU5	Medium	2/5/2019	In-Person
MU6	Medium	2/5/2019	In-Person
LU1	Low	3/11/2019	In-Person
LU2	Low	3/11/2019	In-Person
LU3	Low	3/11/2019	In-Person
LU4	Low	3/12/2019	In-Person

I intentionally withheld assigned interviewee identity designations from tables within each case study to avoid groupings of attributes that might lead to potential paths of revelation for individual identities. Furthermore, I cited all documents I found online concerning individual universities in this study by coded university name (I withheld website data). I have provided information in the reference section of this document explaining how interested readers may obtain a copy of those references through a signed confidentiality agreement.

In addition to the interviews, I reached out to my professional contacts in civil and environmental engineering departments to request they act as confidential informants for this study. I chose to use a professional informant panel to triangulate the data regarding

participants' self-identified advocacy stance to CI. First, I asked all professional contacts to sign a confidentiality agreement as an informant (see Appendix F) and to complete an Excel spreadsheet of land-grant institutions by outlining their familiarity with CEE departments at those universities and to indicate their willingness to serve as an informant (see Appendix G). *If* a professional colleague completed those two documents and had matched institutions to the universities where I completed interviews, I updated their confidentiality agreements with the addition of the name of the matched institution(s). Confirmed informants received the updated confidentiality agreement and a list of faculty members from each matched institution whose faculty I had invited to participate in this research. I asked all informants to complete a subjective ranking (based on their idea of what comprehensive internationalization was), as best as they were able, for the matched institution(s)'s faculty members (strong advocate, moderate advocate, or non-advocate) and return it by email. Five of the 34 professional contacts acted as informants by completing the ranking for this inquiry.

The final element of this study's research design included collecting public-facing evidence of CI engagement on the studied universities' campuses. I searched online to obtain basic, relevant, and publicly available information about CI at each university where I had selected a department for analysis. I specifically searched for documents regarding comprehensive internationalization plans, strategies, and faculty engagement efforts at each institution. My search included general websites and web pages of the president and provost offices, college of engineering, civil and environmental engineering departments, and international education. I used this information as a validation and quality assurance strategy.

3.5 Rationale and Methods

I chose to undertake a comparative, qualitative study for four principal reasons. First, as noted above, I designed this study to explore engineering faculty members' meaning-making, motivations, and perceptions regarding CI on their campuses and to map their views regarding their institutions' attempts to engage them in such initiatives against the Childress model. I utilized qualitative methods because those rely "primarily on human perceptions and understanding" (Stake, 2010, p. 11). Furthermore, qualitative research is interpretive, experiential, situational and personal in character (Stake, 2010, p. 14) and therefore was a good option for exploring individual faculty member perceptions.

Second, I intended to discover whether faculty member perceptions harmonized with the publicly available evidence from their institutions regarding their university's internationalization stance and efforts to engage faculty in it. A comparative, multi-case study allowed me to explore this question and to examine whether faculty member perceptions and institutional (top-down) CI efforts aligned. This approach aligned with Yin's contention (2014) that case studies can be used when studying real-world cases that are contemporary. Additionally, Yin has suggested that case studies address questions of 'how' and 'why.' This study was designed to understand how engineering faculty members make-meaning, are motivated, and perceive engagement in CI based on their responses to interview questions and on evidence of their past interaction with such initiatives.

Third, this study analyzed engineering faculty responses regarding CI in higher education and compared their perceptions of such efforts across differently ranked institutions, but within similar types of universities and the academic discipline. More importantly, I sought to analyze the relative fit of the Childress (2008, 2010) model for engaging faculty members in

internationalization. Childress's framework helped me craft the interview questions I asked concerning faculty engagement in CI and their perceptions of their institution's processes and structures to support the same.

Fourth, I pursued engineering faculty member voices because Merkx and Nolan have argued that engineering is one of the "fields [that] are increasingly international" (2015, p. ix) and because student populations in engineering disciplines are rising in the U.S. In fact, the National Science Board has found that "In the last 10 years, undergraduate engineering enrollment has been on the rise [and]...increased by 63% between 2006 and 2015" (National, 2018, p. 50). I sought to capture the positionality and perceptions of such a high-profile presence regarding the CI mission. Engineering is very broad, so I limited my analysis to civil and environmental engineering because there are many universities with strong student populations in these disciplines. According to Yoder, civil/environmental engineering comprised the second highest number of undergraduate degrees awarded in the 2014-2015 academic year in the United States (2017, p. 2).

Additionally, according to the United States Department of Labor, "Employment of civil engineers is projected to grow 8 percent from 2014 to 2024...[and] as infrastructure continues to age, civil engineers will be needed to manage projects to rebuild bridges, repair roads, and upgrade levees and dams as well as airports and buildings" (United, n.d., para.1). Civil and environmental engineers serve communities and address global issues because civil and environmental engineering addresses challenges of clean water, infrastructure, construction safety, transportation, pollution, and more. Therefore, CEE faculty members (who are educating the next generation of civil and environmental engineers) are important to university internationalization work.

3.6 Ethical Standards and Protocol Information

The Institutional Research Board (IRB) at Virginia Tech approved this study in October 2018. The IRB extended approval for this study in October 2019 for a year and again in October 2020 for an additional year. I originally sent 104 emails to invite faculty members at the three universities to participate in this study. As mentioned previously, I replaced one university due to lack of participation from the list of faculty members originally contacted. I sent an additional 17 emails to invite faculty members at the replacement institution to become involved in this study.

I adhered to approved protocol for emails concerning participation, which allowed only one follow-up email, for those who did not initially respond. I also followed my approved protocol, which allowed one phone call to follow-up with faculty members who had not initially responded to my email messages. I conducted in-person interviews during February and March of 2019. Appendices A-E contain copies of the IRB approved emails, phone scripts, and informed consent forms used in this analysis.

I audio recorded all interviews with the consent of each participant. I took limited notes during the interviews to remind myself of things that might be important to the research. I conducted all interviews, except for one online, in faculty offices or a conference room (as arranged by the participating professor) on their respective campuses.

As part of each interview, I asked participants if they would like to review a copy of their interview transcript for accuracy. Of the 16 interviewees, 12 requested a copy and I sent each their transcript via email with an invitation to provide feedback. None of those with whom I shared interview transcripts provided any response. I also offered each participant an opportunity to receive a copy of the case analysis concerning their institution when my dissertation was

approved by my committee. I plan to email a copy of the relevant case study to participants as promised when my dissertation is formally approved.

I paid for NVivo to transcribe all the interviews I conducted. NVivo has a confidentiality agreement in place for all transcriptions its staff complete. After receiving the NVivo transcribed documents, I realized that they were approximately 90% accurate. As a result, I devoted several months to checking each transcript very carefully. I formally hired an individual, who signed a *Paid Transcriber's Confidentiality Agreement* form (see Appendix J), to help ensure the verbatim accuracy of the transcriptions. However, that person never reviewed any transcripts. Instead, I completed an accuracy analysis of seven transcripts and I employed Rev.com to check and ensure the accuracy of the transcriptions of the other nine. Rev.com provides a confidentiality agreement for all of its transcribers. The Rev.com review resulted in an accuracy rate of 99 %. I completed all final checks and updates for the transcripts in December 2019.

Once the transcripts were complete and accurate, I began coding the data. I employed multiple types of coding: *in vivo* coding, magnitude coding, memo writing, and two structural codes (see Appendix O/Codebook). I used Microsoft Word and/or Microsoft Excel for coding the data. Once I had completed coding the Word documents (interview transcripts), I extracted coded comments into a separate file in Word. Thereafter, I converted some of those comments into Excel files for sorting.

I coded all interviews conducted for this study using the *in vivo coding* method to identify themes in the data. I used *magnitude coding* to highlight distribution of faculty rank, gender, ethnicity, self-identified advocacy level, personal final global engagement ranking, years of service in higher education, length of service at current institution, and length of interview. I also used magnitude coding to capture information concerning invited participants (both interviewees

and non-participants), and charted responses from non-participants (including responses from the original university I replaced due to low participation). I employed *Memo writing and analytic memos* to record my thoughts and identify possible overarching themes across the interviews. Additionally, I used two *structural codes*: Research and Interview Questions, and MMP (Meaning-Making, Motivations, and Perceptions). These two structural codes allowed me to “code and initially categorize the data corpus to examine comparable segments’ commonality, differences, and relationships” (Saldaña, 2016, p. 98).

I used multiple types of coding to analyze different elements of the interviews. I believed that this recoding and recategorization of data was important because “rarely will anyone get coding right the first time” (Saldaña, 2016, p. 11). In addition, I originally coded all interviews simultaneously to identify broad themes and highlight important information. As concepts emerged, I analyzed the cases by individual institutions, and then I analyzed across the three cases. For each individual university, I compared faculty member meaning-making, motivations, and perceptions concerning their institution’s efforts to internationalize comprehensively and to engage them in those activities. I highlighted concepts, commonalities, challenges, and impact connected to Childress’ Five “I” s model of faculty engagement in internationalization, CI practice, and to higher education in general in the cross-case analysis I undertook.

As I mentioned above, in addition to interview participants, I contacted individuals in my personal professional network in person and/or by email in an effort to locate informants who were familiar with, and willing to rank, faculty members from the universities where I completed my interviews. I talked in-person to two professionals within my network to act as informants. Only one of those completed the *List of Land Grant Universities for Informants to Indicate Familiarity* form (see Appendix G). That person did not have any matches to my selected

universities. I later emailed 32 additional professionals within my network asking for informants (see Appendix K). The email requests included faculty members from 16 universities in the United States. The email included a copy of the *Key Informant Confidentiality Agreement* and the *List of Land Grant Universities for Informants to Indicate Familiarity* (see Appendices F & G). Of the group I contacted, 14 responded. Of that 14, 10 completed the *Key Informant Confidentiality Agreement* and the *List of Land Grant Universities for Informants to Indicate Familiarity* form. Of those 10, six had matches with the universities whose CI efforts I was examining. I responded to the six informants with matches by email and provided a list of faculty members from each relevant institution and encouraged them to rank all faculty members at each university that they were comfortable to rank. Some of the six with matches, matched more than one institution and I therefore sent those individuals multiple lists of faculty members to rank. I also attached a confidentiality agreement with the names of their matched institutions to remind them of their agreement to ensure confidentiality. Five of the six informants with matched institutions completed the ranking lists. I summarize more information derived from their rankings in the findings chapter below.

I endeavored to keep the identities of individual faculty members who participated as interviewees and informants confidential. I password protected all documents: consent forms, emails, notes, audio recordings, and transcripts on my personal computer. I secured all identifying hard-copy paper related to this study in my private home in a locked cabinet or I scanned the hard copy into an electronic document, shredded the original hard copy document, and placed the resulting electronic file under password protection.

3.7 Research Questions

I investigated the five specific research questions provided in Table 2 below for this study. The interview questions appear in Appendix L.

Table 2: Research Questions

Question	Relation to Model
1. How do Civil and Environmental Engineering (CEE) faculty members individually define and describe comprehensive internationalization in higher education (how to they make-meaning of that term)?	Relates to the <i>intentionality</i> of their campus (or of American higher educational trends) to make comprehensive internationalization a higher education (and institutional) priority and to communicate this sufficiently and effectively to faculty members.
2. Regarding comprehensive internationalization of their campus, how do CEE faculty members perceive the investment for CI from various institutional levels? <ul style="list-style-type: none"> ● University leaders' input ● Colleges level input ● Departmental input ● Individual input 	Relates to the targeted <i>investment</i> of resources by their campus, the communicated importance associated with investment, and the ability of their institution to successfully communicate how faculty can access institutional investment for CI.
3. Regarding comprehensive internationalization of their campus, how do CEE faculty members perceive infrastructure provided to them for engaging in CI? Does infrastructure exist, such as: <ul style="list-style-type: none"> ● Organizational & programmatic resources ● Opportunities for faculty exploration in CI in teaching, research and service ● Faculty seminars/workshops ● Campuses or centers abroad 	Relates to established <i>infrastructure</i> designed by their campus to support faculty options and engagement in CI.
4. Regarding comprehensive internationalization of their campus, how do CEE faculty members perceive institutional networks provided to them for engaging in CI? Do networks exist such as: <ul style="list-style-type: none"> ● Communication channels which regularly highlight engagement in CI ● Learning opportunities about models and partnerships for CI 	Relates to <i>institutional networks</i> created and maintained by their campus aimed at increasing interdisciplinary and collaborative relationships for faculty partnership and mentorship on how best to globally engage.

<ul style="list-style-type: none"> ● Connections to peer work to global engagement ● Timely communication regarding upcoming funding or collaboration sources 	
<p>5. Do CEE faculty members express that they are individually supported to connect institutional CI goals to their individual teaching and research goals? And do CEE faculty members agree that it is important to create globally prepared university students?</p>	<p>Relates to <i>individual support</i> provided by the institution to help connect faculty members' individual goals with institutional goals.</p>

3.8 Validation and Quality Strategies

I set out deliberately to ensure high quality data and findings. Creswell has “recommend[ed] using multiple validation strategies regardless of the type of qualitative research [undertaken]” (2013, p. 250). For this reason, I completed pilot interviews, drew upon my knowledge from prolonged engagement in the CI field working with civil and environmental engineering faculty, aimed to identify and account for my bias as a researcher, employed triangulation of data sources and relied on my committee chairs for review of this study.

I began validating strategies for this study by conducting two pilot interviews with professors who serve on the faculty of the department of civil and environmental engineering in which I work. I conducted both conversations in May 2018. The pilot interviews helped me to clarify and finalize questions before I interviewed study participants. Pilot interviews with CEE faculty members where I work represents my familiarity with the culture of the population in this study, which arose from my years of working with CEE faculty members at a large, land-grant university. As a researcher, knowing the culture of the discipline and of land grant HEIs helped to build rapport and trust during the interviews and increased my ability to ask appropriate follow-up questions (Creswell, 2013, p. 250).

I clarified my positionality as a researcher for this study in Section 3.3. I offered “comments on past experiences, biases, prejudices, and orientations that have likely shaped the interpretation and approach to the study” (Creswell, 2013, p. 251). My disclosures and shared reflections (Creswell, 2013, p. 265) serve as both validation and quality for this multi-case study.

Next, I triangulated my information sources as another validation strategy for this study. I collected data in multiple ways through faculty interviews, confidential informants, review of relevant university documents, and my own observations. According to Creswell, the triangulation “process involves corroborating evidence from different sources to shed light on a theme or perspective” (2013, p. 251). The strongest such information in this study came from comparing interviewees and informants’ answers regarding the levels of advocacy of CI of participants. I asked interviewees to self-identify regarding their level of support for CI before we spoke and again at the beginning of our conversation. I compared those answers whenever possible to confidential informants’ ranking of those faculty members’ advocacy levels. I discuss those comparisons in more detail in the findings chapter below.

Finally, I relied on my dissertation committee chairs for regular review of this study. Creswell (2013) and others often refer to this validation strategy as “peer review” and my dissertation committee chairs met the definition of this role. My chairs kept me honest as a researcher and asked, “hard questions about methods, meaning, and interpretations” (Creswell, 2013, p. 251).

Moreover, I sought to ensure study quality by adhering to Creswell’s “criteria for evaluating a ‘good’ case study” (2013, p. 265). I have sought to be transparent about my positionality as a researcher (see section 3.3), to offer a clear description of the cases examined

in this study, to describe how I identified themes from those cases and to outline the “assertions and generalizations” I drew from my interviews as explicitly as I could (Creswell, 2013, p. 265).

I sought to be explicit concerning my positionality as a co-constructor of this study’s meaning and context (see section 3.3). I have tried to be honest about the embedded nature of my practical experience in the field and how it has contributed to my perspective as a researcher. I did not attempt to distance myself from the analysis, but did try to focus directly on participant voices, informant information, and data available in the public domain. I sought constantly to be conscious of, and to examine, my potential biases during my coding and analysis of the data.

Section 3.4 outlined how I selected cases for this study. In Chapter 4, I describe each case in detail and recount the history and status of CI for each institution.

3.9 Study Limitations

Land-grant universities are large, diverse, and decentralized organizations. It is inevitably narrowing and limiting to some degree as a result to interview only individuals from one set of stakeholders (i.e., only faculty within one discipline) in such complex organizations. Additionally, engineering faculty and students have only recently begun to engage widely in comprehensive internationalization (especially education abroad) initiatives as compared to faculty advocates and students from colleges of liberal arts and business. However, I employed Childress’ model to gauge the involvement in CI of CEE faculty members and findings related to her model can be generalized to other academic disciplines. Thus, further to the concept of analytical generalization (Stake, 1995), while each case study represents a limited academic population and institution (with its own culture and traditions), the findings from this study may be applied to other similar higher education institutions.

CHAPTER 4 FINDINGS

As I have argued above, universities, especially large, decentralized, research-focused institutions, are complex, and change within them is often slow as a result. All three land-grant universities represented in this study were large, decentralized, and heavily research focused. Internationalization is not new to land-grant institutions. Moreover, faculty members are a special group of professionals, especially those in tenured or tenure-track positions because they enjoy a level of autonomy not often seen in other organizations. In this sense, this analysis and its findings are tied to long-standing policies and practices in higher education. The relative degree of faculty autonomy and the singular significance of promotion and tenure guidelines in professorial life have not changed significantly over many years and are unlikely to shift to accommodate comprehensive internationalization goals.

After multiple iterations of coding, six principal categories emerged:

- Faculty autonomy
- CI's connectedness to professors' career goals
- Importance of faculty values
- Diversity of ideas
- Student care/training
- Faculty levels of awareness of CI

Upon closer evaluation of those categories, three main themes emerged in relation to CI in higher education: historical constructs, personal and professional values, and perceptions of potential outcomes. Each case study below and the cross-case analysis will highlight meaning-making, motivations, and perceptions of faculty members in relation to these three themes. Those I interviewed often articulated numerous viewpoints in response to interview questions. Therefore, multiple answers may be attributed to one participant in the analysis below. Before presenting those findings, I first share some discoveries that arose or became clear as I completed this work.

I have dubbed those “process findings” and I provide them here as context for the major themes and foci of this study. Taken together, those insights related to gender, citizenship, non-participants, and interviewee demographics.

4.1 Process Findings

Gender-Related Findings

Engineering as a field and a discipline is well known to be disproportionately male relative to the general population. In recent years, many universities and companies have attempted to increase the number of female engineers in degree programs and the workforce. However, the graduation and professional retention rates for women in engineering remain a challenge:

In the United States, engineering is a field that has remained stubbornly sex segregated. While nearly 25% of engineering college graduates are women, women make up only 11% of the engineering workforce, a proportion that has remained flat for about 15 years (Fouad, Fitzpatrick, and Liu, 2011, Abstract).

Conversely, females studying abroad outnumber males overall, including in engineering programs:

The data suggest that, overall enrollment numbers aside, and for whatever reasons, women are more drawn to study abroad than men. Even in a field where men substantially outnumber women -- engineering -- study abroad's particular appeal to female students shines through, in this case all the more dramatically (Redden, 2008, para 15).

In light of this information, one interesting process finding was that no women agreed to participate in this research from any of the three universities. Many reasons could account for that fact and I did not design this inquiry to investigate the question. However, it is worth noting that I invited the following percentages of women to participate in this study from each university:

- 19% of the total faculty members invited from the high internationalization-ranked institution (HU)
- 22% of the total faculty members invited from the medium internationalization-ranked institution (MU)
- 24% of the total faculty members invited from the low internationalization-ranked institution (LU)

Most women I invited to participate were already tenured. Certainly, this is a topic for future study.

Citizenship Findings

Another interesting process finding was that many of this study's participants were either non-citizens or had become naturalized citizens of the United States. In fact, 38% of the total number of interviewees identified as members of that demographic in their interviews. The largest group of participants to share such information were members of the HU university.

Non-Participant Findings

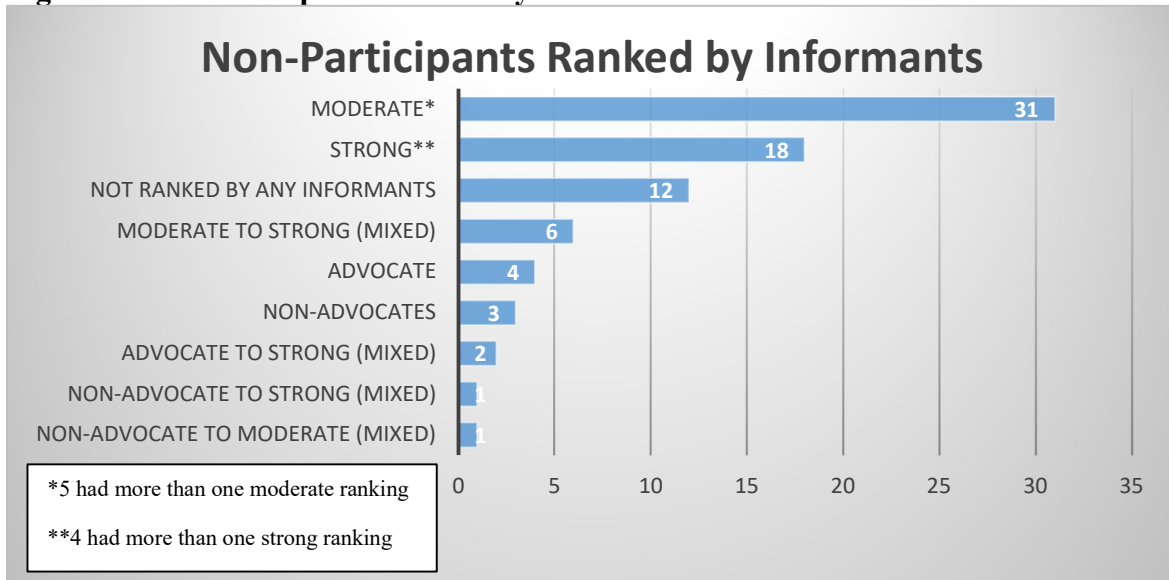
Non-participants (those who were invited to participate but did not) also yielded interesting insights. First, I had to replace the university originally selected to serve in the LU category due to lack of participation among its faculty group. In fact, I received only one reply to 27 emails requesting interviews. I responded to the lone willing individual notifying him that I would arrange a time for us to meet once I had arranged my campus visit. However, after a follow-up email request soliciting additional respondents, the department head/chair replied that *"Our Department will not be able to participate in this endeavor. However, any individual Faculty may choose to do otherwise."* Since the department chair indicated that faculty members could make their own decisions concerning participation, I continued to attempt to recruit individuals by telephone. After connecting by telephone (and leaving voicemail messages when able), I spoke with two faculty members. Below are my notes from those conversations:

- Talked to on 1/16/19, he will look at email again, but he said the chair did not want them to participate. I said that the chair did email me to say he would not participate, but that individual faculty could decide for themselves. He said he would check and let me know (Cranwell, 2019).
- He answered the phone and talked to me about the chair's response, who didn't want to "play" by ranking the individual faculty members, so he thought that his school was out as an option, I told him that my chair and I talked about it and since the research is not particularly focused on the level of advocacy of faculty and that was just one way to triangulate my data, I was still interested in the interview (Cranwell, 2019).

Neither of these faculty members ever reached out to me concerning this study again. In addition, the one initially positive respondent never replied to my requests to schedule an interview. Shortly thereafter, I made the decision to choose another LU institution to study.

Second, I originally invited 94 professors from the final list of institutions to participate in this inquiry. Of that total, 16 ultimately participated in interviews and 78 were non-participants. When confidential informants ranked faculty members at matched universities, they evaluated *all* faculty members because they were not privy to participant information. I adopted this approach to ensure that actual participant identities were protected as much as possible. Figure 2 below reveals the combined levels of perceived advocacy for non-participants only. Please note that one informant chose to add another level of advocacy (Advocate). As a reminder, the ranking system presented for participants and informant use was: Strong advocate of CI, Moderate advocate of CI, or Non-advocate of CI.

Figure 2: Non-Participants Ranked by Informants



Thus, according to informants for this study, 71% of the non-participants were identified as moderate, moderate to strong, or strong advocates of comprehensive internationalization. I found this surprising because most non-participants, a large proportion of whom were reportedly engaged in CI (at least were so perceived by informants), never responded to my email requests and telephone messages.

The third process finding, also related to non-participants, arose from that group's responses to my email requests for participation. Only a few replied to my inquiries. While I cannot know why this occurred, it does appear that even if the term 'comprehensive internationalization' were not familiar to those I contacted, I nonetheless had hoped that 'internationalization' might elicit some responses. Table 3 provides examples of observations from both informant-ranked and unranked non-participants:

Table 3: Non-Participant Response Excerpts

Ranking by Informants	Response Excerpts from Invitation to Participate in Study
Moderate	"Thank you for offering me the opportunity to participate in your research. Although the topic seems to be timely and intriguing, and I have some international collaborations, the matter per se has not attracted much of my attention so far. Thus, I have developed neither sufficient knowledge nor established opinion on the subject to comfortably share with you. I am positive that you will find individuals more competent than I to pursue your study. "
Moderate	"I am not interested in participating."
Not Ranked by Any Informants	" I unfortunately am not familiar with the concept, nor do I fit into any of the categories you listed. I would recommend that you contact our department head or our college dean and perhaps they can suggest faculty who are more in tune with these issues. I respectfully refuse your request for an interview. Sorry"
Not Ranked by Any Informants	" I am not agreeing to interview because I don't know what CI is or whether I am an advocate. I've talked to other faculty in my department and this is the general consensus. I understand this is for your dissertation and that you are trying to get people to interview (and I really hope you are successful). As a bit of advice, you may get more faculty to respond if you re-phrase your invitation email to inform us what CI is (and why we should care). Best of luck to you! Thanks."

I discuss this apparent confusion regarding the meaning of comprehensive internationalization more below. While the email inviting participants (see Appendix A) did not define CI, it did say:

Given the nature of the research, I ask that you not investigate comprehensive internationalization in higher education between this time and the time of a scheduled interview, so your interview will reflect your thoughts at the time of this email.

Additionally, in several telephone calls to arrange interviews, many faculty members were only willing to participate after I indicated that I would share the working definition of comprehensive internationalization early in their interviews.

Demographic Findings

The last process finding involved demographic information from all interviewees. The participants proved to be a diverse group in terms of their academic status. Of the 16 interviewees, seven were full, five were associate, and four were assistant professors. As stated

previously, all participants were male. Their range of service or experience as faculty members at their current institution ranged from 1.5 to 30 years. Few interviewees shared their exact age, but it was evident that their ages were distributed across a broad span. The highest age shared was 69 years. The racial make-up of those interviewed for this study included 62.5% white non-Hispanic, 25% Asian/Asian Indian, and 12.5% Hispanic individuals. Overall, I was also successful in recruiting a broad range of CI advocacy levels, a goal of this study.

4.2 Case Study 1: HU University

Overview of HU University and Participants

The first case study represents a land-grant university from the *Times Higher Education (THE)* world university rankings (2017) with a high ‘international outlook’ sub-ranking. As I noted above, I created categories from THE (2017) with scores that identified ‘high-ranked’ universities as those with international outlook results from 49.9 to 85.6. I refer to the university chosen for interviews, from the high-ranked category for international outlook, as HU. There were eight land-grant universities in this category. I interviewed six faculty members from HU university in February 2019.

I interviewed three full professors, two associate professors, and one assistant professor from HU. Half indicated they had work in industry prior to joining the academy. The interviewees indicated they possessed an average of 16.3 years working as a faculty member. Their average tenure at HU was 15 years. These findings suggest that most interviewees had spent their academic careers at HU. The group was ethnically diverse, and one participant shared his age. All interviews for this group took between 40-51 minutes, except one, which lasted for approximately 30 minutes.

Half of the HU faculty group self-identified, as requested, into a category describing their level of advocacy of comprehensive internationalization (CI) prior to or at the start of the interview. I received two “strong” rankings and one “moderate” ranking. The other half of this group of interviewees (three individuals) was unwilling to categorize themselves due to a lack of familiarity with the term “CI.” I received comments such as HU1’s of “I don’t know what it is” (2/7/2019).

Near the end of the interview (in interview question #13, see Appendix L), after I had shared and discussed the study’s working definition of CI (see Appendix M) and framework (see Appendix N & Figure 1), I asked participants to rate their global engagement on a scale of 1 to 10 (with 10 as best). I then formulated a system to rank these individual global engagement responses in relation to original self-identified CI advocacy level as:

- 1-3.9 as “non-advocate”
- 4-7.4 as “moderate”, and
- 7.5-10 as “strong”

The final global engagement rankings identified four strong advocates of CI, (which confirmed/matched the original two self-identified advocacy levels at the beginning of the interview), one moderate, (which matched that individual’s self-identified advocacy level at the beginning of the interview), and one non-advocate. I discuss the relationship between self-identified CI advocacy levels and the final global engagement rankings later in this chapter.

Research Question 1: HU

The first research question (see Table 2) for this probed how civil and environmental engineering faculty members individually defined and described comprehensive internationalization (CI) in higher education. I sought to understand the intentionality of campus leaders towards CI as an institutional priority and university leaders’ ability to convey that

weighting to faculty members. Table 4 (below) shares excerpts from HU faculty members' definitions of CI (prior to learning the working definition of this study). The Table provides individual self-identified advocacy levels and final global engagement rankings.

Table 4: HU Definitions of CI (prior to learning an official definition of this term)

Self-Identified Level of Advocacy	Final Global Engagement Ranking Indicator	Response Excerpts from HU Definitions of CI
"I'm not an advocate, because I don't know what it is."	1 (non-advocate)	"The deployment of the educational resources of an institution globally, that has no limitation to who it can reach."
"I have no idea of what it is. "	8 to 9 = 8.5 (strong)	"I guess probably you are talking about some kind of, making the higher education entities aware of different cultures and different countries, different politics, culture, people ... the way we do things in the university, the way they do things in Country X, and as we move towards more collaboration and ... [HU] likes to bring international people here, to actually make that more effective, for not only for the state of [removed] because this is a land-grant institution, but also for the other countries, and how we actually bring business here."
Moderate	4 (Moderate)	"I guess I would think that it would involve, number one foreign language training and then collaboration with international partners, both, you know, at a home institution and also at an international institution."
Strong	9 (Strong)	"It's about education and also doing research in the international arena kind of, recruiting international students. Doing research through collaborations with international faculties and research institutions and also working on the topics that are relevant not only to the United States but to many other countries in the world."
Participant wanted to understand what CI was before answering	9 or 10 = 9.5 (Strong)	"In the context of higher education would probably mean a healthy exchange of graduate students from one country to another, from multiple countries through a multipronged back and forth."
Strong	8 (Strong)	"I understand this is by my own experience. In terms of my current academic activities. One of them is a research center that deals with [removed content] ... and in that context partnerships, and particularly international partnerships are of great value...when you say in terms of internationalization, I understand that we need to communicate, share, and collaborate with international partners. ... For us this is very important because ... [of the] ... magnitude and the impact they have on society. And they actually occur around the globe and with that then, if we work in the traditional sense of just focusing on our own country, our own activities in the United States, even improving our

	<p>infrastructure is not going to guarantee that it does not affect one of those events. ... To date with economies being so globalized...So we have to make sure that we not only address our own needs but we help address the needs of others, that at the end, are of critical importance to us as well if not just because it's the humanity that demands that we all work together...So in that sense then that takes us from research through education because our students, those that graduate from our institutions here need not only to understand the local conditions but need to be able to work with people from those countries and those two things together is what makes our transfer of technology effective."</p>
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I received a wide array of proposed definitions from HU participants in response to this question. Admittedly, not all universities do (or need to) use the same terms regarding internationalization. As such, it was no surprise that many engineering faculty members were not familiar with the specific term “comprehensive internationalization.” However, participants were able to articulate some aspects of a globally engaged university. It does not appear from their various definitions that HU administration had communicated a unified idea of CI/internationalization/global engagement, even though globally focused activity has clearly been a part of the university’s goal set for some time.

When searching online for HU’s strategic plan, I found a document from 2006 that updated that framework and that included sections addressing international student enrollment, advancement in the international marketplace, and the importance of international recognition (HU*, 2006). The HU College of Engineering’s strategic plan, established a few years after that of its parent university, stressed the importance of global impact. The plan for that College addressed international competition and demands and highlighted a suggestion from engineering faculty that the criteria for promotion and tenure incorporate such projects and partners. The plan also highlighted the needs of international students on campus and advocated for study abroad and faculty exchange programs with foreign universities. The College of Engineering’s plan aligned with HU’s current strategic plan that emphasized the importance of international

experiences for students (with well-defined goals) and stressed the significance of producing research with sufficient power to affect the world.

I asked the following interview question immediately after I shared Hudzik’s definition of CI (see Appendix M) with interviewees: *Would you describe your university’s efforts to internationalize comprehensively as **intentional**? If so, why? If not, why not?*

Table 5 (below) shares HU faculty responses to this question.

Table 5: HU Answers to Interview Question #4 about HU Intentionality of CI

Answers (excerpts) to Question #4 about HU Intentionality of CI
"They are intentional in what they do internationally, I don't know if it's comprehensive ... I don't have insight into their strategy. If I knew the types of activities that were happening outside of the United States, right now, and where they planned to go, then I'd be able to comment on [whether] its comprehensive."
"I would say it's moderately intentional. I think they do what they think they have to do to find resources and that often has an international component, I think. I think it's the byproduct of going after resources...it's sort of forced on them by the inflow of both [international] faculty and students."
"Yes...because of the programs that are in place, because of the resources that the administration dedicates to this effort and faculty research ongoing, a significant amount of our research has an international component. We have a very strong partnerships with [list of countries removed] just to name a few, and [more] that I am unfamiliar because of my field."
"Yes...there is a lot of work to collaborative research, you know, not only from the research support but for teaching with different countries and every time I hear what they have to say, at the administrative level, is to actually to, not only to bring more students from outside, but what is to benefit for the state of [state]. Right. And just to bring more business and that's the kind of benefit that it produces, and that's the way I interpret it, but I think, so I think I see, I see that they have an intention and they are doing it and there is very strong evidence that [HU]-univ is actually towards a different kind of agreement with different countries."
"As far as I know because I'm not involved in the management level or structure of the university, so I can just share some of my observations. OK so let’s start with students. [HU] is a very diversified university. So, we recruit students from all over the world...So in terms of international student composition that is, you know [HU] is doing all the work to recruit new students and to promote its name...our school and department hires international faculty...we have a workshop to promote diversity."
"Yes...we have a variety of internationalization programs where the university leadership has set up multiple avenues by which there is a healthy exchange of students from different countries coming into our university and going from our university to others in order to learn and teach at the same time. Very intentional. We have a whole department of global engineering programs. I forget the name of the exact institute but there is a pretty large institute that arranges international programs. Very intentional."

Most HU interviewees answered this question affirmatively. Two faculty members appeared to have doubts about the comprehensiveness of the university's effort, but all perceived that CI was an institutional goal. Research question #2 asked for further reflection concerning the relative intentionality of HU's CI efforts.

Research Question 2: HU

The second research question (see Table 2) for this study solicited HU civil and environmental engineering faculty members' perceptions of investment in CI by university leaders, their college of engineering, the CEE department, and themselves. Ultimately, I asked this question to understand better the range of resources available to support CI at HU. Additionally, I expected to learn how successfully university leaders had communicated their aims concerning internationalization to faculty and whether professors understood how they could access support for such efforts.

HU interviewee responses to this question varied. Some prominent terms in their replies included: research, abroad, engineering, support, level, funding, and exchanges. To obtain an overarching sense of interviewees' perceptions concerning their university's investment in CI, I created a word cloud to visualize the vocabulary they employed in describing those efforts (see Figure 3).

relevant teaching involvement, research and service, faculty seminars or workshops, and campuses or centers abroad. I reviewed for evidence of established campus infrastructure aimed at supporting faculty engagement in CI.

An interview question asked:

*Please share your thoughts regarding comprehensive internationalization **infrastructure** at your institution (as a follow-up can ask about the following categories:)*

- *Organizational and programmatic resources*
- *Opportunities for faculty exploration in CI in teaching, research, and service*
- *Faculty seminars/workshops*
- *Campuses or centers abroad.*

Table 6 (below) highlights some basic information, including positive and negative comments/language articulated about infrastructure by HU interviewees (above Table 6 is a list of infrastructure codes as reference, see Appendix O/Codebook for more information). It is important to note that I offered the bulleted follow-up categories for this question after early faculty participants suggested they were uncertain what the term “infrastructure” was meant to address.

Meaning of Infrastructure Codes (Model refers to Childress, 2010)			
INFPRT	Pre-model share of association in terms of infrastructure	INFPRNL	Pre-model share of negative infrastructure language
INF POT	Post-model share of association in terms of infrastructure	INF PONL	Post-model share of negative infrastructure language
INFP RPL	Pre-model share of positive infrastructure language	INFP RBI	Pre-model share of basic ideas/phrases in terms of infrastructure
INF POPL	Post-model share of positive infrastructure language	INF POBI	Post-model share of basic ideas/phrases in terms of infrastructure

Table 6: HU Comments on Infrastructure

HU Comments on Infrastructure	
"There are plans if you want to start a course in collaboration with a university in country X, you can apply for support. So, the thing is, there is funding available. You have to compete for it, but it is available" (INFPRT).	"I know that they [Dean of Students' Office] do things well [in terms of caring for international students]" (INFPOPL).
"So, we do a little workshop here, especially when you are an assistant professor and they tell you a lot of things, maybe a lot of it you forget, but at the end of the day they provide this information and it's always available" (INFPRT).	"There are those opportunities, but they sometimes fizzle out or they take off, and it's kind of you know the scrum to figure out what's happening" (INFPRNL).
<i>(When asked in a follow-up question, do you know of any campuses or centers that HU has abroad?)</i> , "Yeah, I don't know if I'd call them centers because, it is like you say, center is a big things and center has a lot of definitions, but there are a lot of things going in terms of very well established collaborations" (INFP RBI).	"Everything that you're driven, even if it doesn't matter, you're driven to be evaluated on that process only" (INFPONL).
"There are some of all those that exist here, that are supported in some way" (INFPRT).	"It's not on the horizon of many junior faculty because senior faculty teach service-learning courses" (INFPRT).
"There is no scholarly output from that [traveling internationally]" (INFPRT).	"I was encouraged not to spend time on things that don't contribute to being promoted" (INFPRNL).
"There may be an opportunity to get involved in research and education to help universities better tailor their educational system to be more like what we have" (INFPRT).	"So, the infrastructure is the P & T process. So, they would have to change that, and that's not changing" (INFPONL).
"So, in infrastructure, yes infrastructure wise I would say that there's programmatic support, funding support, if the cause is worthwhile and well-defined and impactful, infrastructure is always available at HU-univ. I can say that, that if I choose tomorrow that I need to, like for example our own department has a relationship with [university name removed]. We have a HU-[name removed] program that lasted for several years... That's just one example of infrastructure that is available to, you could say, prime or initiate the kind of global partnerships for the long term" (INFPRT).	"Everyone was excited about that [international collaboration] and it went on for about five years. And so, I guess the, and then it then it died, partly because higher education costs in Europe are quite low while in the U.S., they are very expensive, and we could just never resolve that. And so, speaking of resources, you know the university doesn't want to talk about that" (INFPRNL).
"They go to like the UK, they do two, three weeks in UK. So, it's not like they necessarily go there and study" (INFPRT).	"It's detached from the promotion and tenure process for the other faculty" (INFPRNL).

<p>(When asked in a follow-up question, do you know anything about the immigration offices that serve them [international students]), " I don't" (INFPOBI).</p>	<p>"There is a big network of support for new students that come from abroad. Some of them actually get engaged with this organization before they get here and it helps them with you know transportation, access to housing, even a support network for the days when they are just getting used to the system. You can say those student organizations are very important" (INFPOBI).</p>
<p>(When asked in a follow-up question, do you know anything about the network here or the infrastructure for visiting scholars), " No, I don't" (INFPOBI).</p>	<p>"Information technology, laboratories, personnel exchanges. I think those are the main ones" (INFPRT).</p>
<p>(When followed-up with -You did mention the graduate student exchanges. Was there any infrastructure on campus that helped with exchanges?), "I guess, I think I can't think of any infrastructure that helped with that" (INFPRBI).</p>	<p>"Oh yeah. We have a few offices. We have an international scholar's student office, we have, I think that's is probably the office to get involved. And when you talk about MOUs, we have quite a number of MOUs signed" (INFPRT).</p>
<p>"You can compete for a department travel, international travel grant" (INFPRT).</p>	<p>"So, we get a lot of students from there. But it's all you know. It's all one way" (INFPONL).</p>

Like the investment question, the infrastructure question generated a wide variety of responses. Some faculty appeared to be focused more on the organizational structure of the university in relation to CI when addressing it, while others addressed support units and their physical space and activities. A few participants were able to name offices on campus that supported CI (whether it was before or after I shared the Childress model with them), while others were relatively unaware of the role those staff played in CI on the HU campus. Although the level of awareness varied among faculty members, I think it was important that, collectively, interviewees were able to identify most of the offices that had a role in CI on the campus:

- Dean of Students' Office
- Office of the Dean of the College of Engineering (specifically, the associate dean for global programs)
- International Student and Scholar Office/ISS
- Global Engineering Department
- HU office in another country
- Insurance (for global travel) office
- President's Office
- Research Foundation Office

- Office of Corporate and Global Partnerships
- Office of Export Control
- Office for [Research] Compliance
- Provost's Office
- Office of Graduate Programs
- VPR (Vice President for Research).

This list suggests that, as a group, HU faculty members were aware that infrastructure *was* in place to support CI.

Research Question 4: HU

The fourth research question (see Table 2) solicited interviewee perceptions of the institutional networks provided for them to engage in CI. I asked about communication channels that regularly highlight CI, learning opportunities about models and partnerships to attain internationalization, connections to peer work linked to global engagement, and timely communication regarding upcoming funding or collaboration sources. I reviewed for evidence of institutional networks created and maintained by HU's CI leaders that sought to increase interdisciplinary global relationships for faculty.

I asked the following interview question:

*Please share your thoughts regarding comprehensive internationalization **institutional networks** at your institution such as: communication channels, learning opportunities about partnerships and models, connections to peer groups, timely communications about upcoming events, policy change, etc.*

Table 7 profiles the sort of communication networks interviewees highlighted along with sample quotations.

Table 7: HU Institutional Network Types

Type of Communication	Example Quotes from HU
Email	"[Communications] I hear about are either just from an e-mail from the dean or an associate dean."
Agreements with Int'l Partners	"... we establish agreements with other networks abroad to do things like develop joint research agendas. ... Typically, that's the type of bilateral network, the network experience that I have with international partners."
Policy	"it is a policy thing, If I have to travel to country X, I have to fill a form. I need to ask permission even if I pay for my costs. But it is there, I fill the form and say I'm going to country x. I immediately I get an email, 'oh, You're going to [country named removed]'and because that's listed as one of the places [the university works], they send me the insurance and all that stuff."
External Entities	<ol style="list-style-type: none"> 1. "There is a website at the State Department, and many other things." 2. "The second thing is, I go to the U.S. News and World report, to the university rankings and depending on what my interest area is. I usually check those subject rankings for engineering, civil engineering."
Personal Networking	"Let me see if I understand that, because network, I do network all the time. I was at a conference last week and I met new people from the University of [name removed] ...And now I'm actually talking about a collaboration [with them]."
Peer Network	" Just a comment from in the hallway with a faculty colleague."
Online	"Usually I search online, I just put a name in Google.com."

The HU faculty members I interviewed had some other notable things to say about the topic of communication, as related to CI. For example, one participant said that, “one of the biggest things that influences faculty members' career is how their contributions on that global stage are being valued locally” (HU5, 8-Feb-2019) and indicated that it is important to recognize them for promotion. I saw the comment as also implying that it is important to communicate better to the local HU community the range of international activities with which individual faculty members are involved. Another comment concerned the volume and interest in communication, “There's plenty of communication that we receive, and, like good faculty members, ignore, from various departments that tell us of opportunities or funding, some of them we avail ... there are enough emails and information to establish that sort of network” (HU5, 8-Feb-2019). Childress’ (2010) model outlined networks for CI as collective, essential, institutional channels for faculty to learn about international opportunities, resources, and their colleagues’ areas of expertise in a globally connected context. However, at times it appeared

that faculty members interpreted the word ‘network’ very differently from what Childress intended. Instead, several faculty participants saw networks as individual connections and their responses pointed to apathy involving collective university/departmental networking to accomplish CI goals.

Research Question 5: HU

The fifth research question (see Table 2) explored whether interviewees perceived sufficient support on campus to connect and engage their individual teaching and research goals to CI. I also sought to discern whether those with whom I spoke agreed that it is important to create globally prepared university students.

The related interview question asked:

(a)Do you feel individually supported to engage in comprehensive internationalization on your campus? (b)Do you feel that the university helps you connect your teaching and research to this [CI] mission?

Table 8 displays HU interviewee responses to interview question 8 and shares some contextual comments.

Table 8: HU Individual Support Answers to Interview Question #8

HU Answers Concerning Individual Support, Interview Question #8	
8a	8b
"I think it was discouraged, early on because the focus was developed scholarly output in ways that is very typical, standard."	"No."
"What does that mean? I mean, I feel supported because if I want to do it, yeah that's good for a research group, for HU-univ, for teaching. So, it's kind of, ... for granted ... I just do it and I do my own thing, but I know there is support, of course."	"You know, it is my wish to actually make that connection, I do that all the time, it's very natural for me. I don't feel like they are pushing me that hard I'll do it anyway. ... I mean I don't need the help. ... Yeah, so, maybe they are helping me, maybe you know maybe there is help, there is support everywhere."
"I guess my answer would be 'no' in the sense that, they are very happy if you do things like that, but there's no, but they'll certainly encourage you to do	"I would say, yeah ... there are a few things there...there are these international travel grants and if they heard about some kind of collaboration, they would certainly like it ... the

it, but there's nothing explicit that they're going to do to help you."	fact that it's international is just incidental in my opinion.
"Yes...We haven't been specifically asked to do that, but you know, we are pretty independent, they expect you to do a good job in basically three areas, of teaching, research and service ... all those in the international area will be encouraged. ... So, I would say we are working toward. that direction."	"Again, I don't directly feel these incentives or these encouragements from the university because they are kind of a few layers away from me. It's pretty far away ... you're not limited to anything. ... Our problems are global; it is not limited to a region or even to other countries."
"Yes, yes."	"For research yes, teaching they are trying, it's difficult to make a direct connection. I mean I've always had the support if I need it."
"Yes and encouraged furthermore, I think it's becoming clear, at least to our institution it's clear, that we have to operate in a global environment. We can't claim that we're training top students if we do not have a strong international component."	"Well, yes, just in the sense that they constantly encourage us to look for those opportunities ... they encourage collaborations and access to those opportunities so that we can train our students better."

Table 8 illustrates the strongly contrasting responses among interviewees regarding support for CI from university and academic units. Some interviewees assertively acknowledged support while others expressed discouragement. Five HU participants suggested that the university, college, or department were happy to have faculty engage in CI activities (or for faculty to participate if they wanted to do so), but that help to do so was limited.

Furthermore, I asked the following questions as part of the interview, *what do you feel was the greatest motivator for your participation? What were your overall reasons for participation?*

Stated motivational reasons for HU faculty members to engage globally included:

- An offered opportunity
- A desire to help others
- Cultural experiences
- Personal disposition
- Positive international experience from industry work
- Desire to help domestic students overcome their limited “provincial outlook on things” and to encourage them to have an international experience
- The nature of their work/field of work
- Engaging with others with diverse thinking to see how they see things differently
- Competition

Three faculty members explicitly tied their motivation to engage globally to the nature of their work in some way. Furthermore, other interviewees who were not (or less) engaged in CI initiatives, including the participant who indicated he believed faculty were being discouraged from becoming involved in CI, shared that they used global examples in their teaching based on the nature of their discipline. Thus, it appears HU has missed opportunities to incorporate faculty members already favorably inclined to global solutions into its CI efforts more broadly.

Another relatively unexplored avenue to secure faculty engagement in CI at HU arose from the below interview question concerning global preparedness for students. The question asked:

(a) Do you think it is important to create globally prepared university students?

(b) And do you feel that you personally do or should use part of your teaching role to prepare students to be global citizens and engineers?

All HU interviewees answered part ‘a’ of the question with “yes” and some added the word “absolutely” and one added “a very, very loud, yes.” One faculty member also added, “it’s critical, I would say, to give them international perspective” (HU4, 8-Feb-2019). All of those with whom I spoke also had positive reactions to part “b” of the question. Four of the six said “yes” or “yes, absolutely” in response to part ‘b’ of the question. Three of the six participants added the following observations for this question too:

- “I think I should probably do better” (HU2, 7-Feb-2019).
- “For me, I mean, I see only a small portion of the core curriculum. So, I could do better. But I don’t know because the kind of things that I teach, I’m not flexible for that, but I recognize that some of my colleagues can do that” (HU2, 7-Feb-2019).
- “I have already done that because when I talk about environmental problems ... [students understand] our problems are global” (HU4, 8-Feb-2019).
- “I do that by the type of problems that I give in class and the examples that I use ... I have to talk to them in the context of the global environment because I have to tell them why are we doing things here [in country X]” (HU6, 11-Feb-2019).

Conclusions for HU

There is a reason that HU is in the high-ranked category for international outlook. HU faculty interviewed for this study were collectively able to identify most of the investment, infrastructure, networks, and other support provided by the university and units across campus for CI. I grouped HU interviewee responses to the questions I posed concerning university backing for CI into the following categories in preliminary coding:

- Autonomy (i.e., the freedom to decide engagement level)
- Awareness Levels (i.e., relative awareness of relevant offices and information)
- Interest in CI Connectedness to Career (i.e. interest in global engagement directly related to their discipline's connections to global challenges)
- Faculty Values (i.e., relating promotion and tenure to CI)
- Diversity (i.e., interest in different viewpoints and inputs)
- Student Care (i.e., interest in preparing students for the global landscape)

I examined these categories more closely and grouped them into three main concepts. The first was the way *historical constructs* within higher education barred or enhanced the global engagement of these faculty. For example, even though an online strategic document suggested that HU faculty members wished to add international collaborations to the evaluation of their work (HU*, 2009, p. 8), the university's promotion and tenure (P&T) guidance has not changed to reflect that fact. In fact, as one participant indicated, "there is a policy level recognition that exchanges internationally are bad" (HU5, 8-Feb-2019). Since CI is not a specific measure of evaluation at HU, interviewees perceived that barriers to participation still existed. I am not advocating for changes in HU's P&T requirements, but it appears, from my interviewees at least, that for a larger group of faculty members to engage with CI—especially early in their careers—HU leaders must find additional ways to support internationalization. It was also evident that interviewees perceived tenure as allowing any with strong personal motivation to engage in CI even though the interviews revealed a combination of tenured and untenured non-advocates.

Regardless, four of those with whom I spoke expressed concern about CI's value in tenure and promotion evaluations.

The second aggregative concept focused on *what faculty members value* most. As one participant said, "If we do not value it, it will go away" (HU5, 8-Feb-2019). Interviewees highly valued the global aspects of civil and environmental engineering work. Participants also strongly regarded their research and the progression of their careers. These findings suggest that engineering faculty, especially at research-heavy universities such as HU, may engage more readily in CI when university leaders vigorously support connections between their individual research and CI efforts. I asked participants at the close of each interview to rank their university, college of engineering, CEE department, and themselves in relation to CI (see Appendix L, question #13). The average ratings for each category among HU participants revealed that the department ranks the lowest in institutional terms on this question. This finding suggests that leaders and international educators at HU should consider how they might strengthen support for CI at the departmental level. Focused engagement in CI by departmental leaders could create an organizational environment more supportive of CI as an attribute of value for promotion. If department leaders successfully helped faculty members connect their research to CI, it seems more likely that professors' research knowledge would translate into student preparation for global challenges.

The third theme, which emerged from the data, concerned how interviewees perceived potential outcomes of CI engagement. Regarding faculty engagement in CI, one interviewee observed that "Their time is the primary investment. The time and with that goes expertise" (HU6, 11-Feb-2019). So, for faculty members to spend their time to engage in CI initiatives, there must be a catalyst (or perhaps several) to bring them into the global space. HU6 revealed

that he started his “life as an international student, so I’ve always been a firm believer that it’s very good to provide opportunity and share” (11-Feb-2019). I am not trying to imply that all faculty who come from international backgrounds are automatically strong advocates of CI, but it can be a strong motivator in certain situations. More generally, it appears that a personal connection may be a place to start when engaging international faculty members with CI.

Another perception to be aware of is one-sidedness, in which faculty members only view CI endeavors from one direction (i.e. outward facing, U.S. helps the world). The outcomes of this approach can be limiting. For example, several interviewees supported recruiting international students into their university and research groups. Yet, some of those same faculty members did not see the need to promote international experiences for U.S. students. Still, one study participant summed up the need for American students to gain global insight when he reflected on past students. As he put it, they, “were not global, they were not state prepared” (HU1, 7-Feb-2019). Another outcome of this perception was evident when a conversation about teaching, related to CI, immediately turned outward-facing based on experience. This participant responded, “when you say comprehensive internationalization of teaching, that becomes a little bit more vague, because I cannot go and issue a degree to a student who is in some other country ... I have taught classes in different countries” (HU5, 8-Feb-2019). This statement suggests that for this interviewee at least, teaching may be focused on international communities in need of his expertise. It was not clear if he equally valued teaching global concepts to his HU students.

Overall, HU participants were products of their environment. For years, this university has promoted internationalization and it appears generally to have disseminated that message effectively. Some HU faculty participants noted that in their view Childress’ Five “I” s model of Faculty Engagement in Internationalization has been fully implemented at HU. Other

interviewees provided insight into the work that still needs to be done at HU in their view. As one interviewee explained, “that [CI work] is a boutique kind of, um, it's a feather in your cap but the feather doesn't matter when it comes to promotion” (HU1, 7-Feb-2019). Additionally, if one recalls Hudzik’s definition of comprehensive internationalization as “an institutional imperative, not just a desirable possibility. Comprehensive internationalization not only impacts [sic.] all of campus life, but the institution’s external frames of reference, partnerships, and relations” (2011, p. 6), it can be said that some of HU’s faculty members do not see yet CI as an imperative.

4.3 Case Study 2: MU University

Overview of MU University and Participants

The second case study represents a land-grant university from the *Times Higher Education (THE)* world university rankings (2017) evidencing a medium ‘international outlook.’ As I noted above, I created categories from THE (2017) with scores that identified the ‘medium-ranked’ universities as those with international outlook rankings from 34 to 49.8. I refer to the university selected as a part of my sample as a medium category institution, as MU.

I interviewed six faculty members at MU university in February 2019, three were full professors, two were associate professors, and one was an assistant professor. Two interviewees indicated they had worked in industry prior to their employment in the academy. The average number of years that interviewees had worked as a faculty member was 16.8 and the average number of years they had served as a faculty member at MU was 11.8. Most interviewees had spent all of their time in the academy as a faculty member at MU. The participant group composition included two distinct ethnic groups, and two interviewees shared their age/age range. Most interviews for this group took between 43-53 minutes, except for two which lasted

between 28-35 minutes. Two interviewees also had experience in academic administration along with their professorial positions.

Most of the faculty were willing to self-identify, as requested, into a category for their level of advocacy in comprehensive internationalization (CI) prior to or at the start of the interview. I received one “strong” ranking, two “moderate” rankings, and one “moderate to non-advocate” from members of this interview group. The other two faculty participants expressed an unwillingness to categorize themselves due to a lack of familiarity with the term “CI.” Near the end of the interview (in interview question #13, see Appendix L), after I had shared and discussed the study’s working definition of CI (see Appendix M) and the study’s framework (see Appendix N & Figure 1), I asked participants to rate their individual global engagement on a scale of 1 to 10 (with 10 as highest). I then formulated a system to rank those responses in relation to original self-identified CI advocacy levels:

- 1-3.9 as “non-advocate,”
- 4-7.4 as “moderate,” and
- 7.5-10 as “strong.”

The final personal rankings for the MU interviewees identified no strong advocates of CI, four moderates (one was originally strong), and two non-advocates. I discuss the relationship between self-identified CI advocacy levels and these rankings later in this chapter.

Research Question 1: MU

The first research question (see Table 2) for this study sought to explore how civil and environmental engineering faculty members from MU individually defined and described CI in higher education. I used this question to understand faculty members views concerning the intentionality of campus leaders towards CI as an institutional priority and their ability to convey that message. The following table includes excerpts from interviewee definitions of CI (prior to

learning the working definition of this study). The Table provides individual self-identified advocacy levels and final global engagement rankings:

Table 9: MU Definitions of CI (prior to learning an official definition of this term)

Self-Identified Level of Advocacy	Final Global Engagement Ranking Indicator	Response Excerpts from MU Definitions of CI
moderate	7 (moderate)	"Collaboration on research, teaching, maybe communicating at international conferences, exchanging ideas."
"I don't know what you mean by that terminology...I'd rather have some sort of definition."	4 or 5= 4.5 (moderate)	"Well, if I were to take those 2 words, comprehensive means complete, and internationalization probably means that people across the world. ... All higher education is very similar or the same."
strong	4 (moderate)	"I think it's just complete integration of intercultural and international understanding and experiences for all students, both on campus and off. A tenet of any entity that commits itself to comprehensive internationalization understands that all students should be required, really, to have an international experience. Now, whether that means study abroad, whether that means hosting somebody that comes in from another country, that can be broadly defined. For you to be comprehensively committed, that means you've got to weave it into your entire higher ed program."
no category provided without definition	7 (moderate)	"Do something in another country or [undertake] joint collaborative research."
"moderate to non"	1 or 2 = 1.5 (non-advocate)	"I'm coming ... from my engineering background...Most notably, we use the U.S. [removed] System ... I feel like a lot of our fundamental mechanics and things like that ... Sure math is math and mechanics are mechanics, and to the extent that international also means uniform reality, then yes international's great ... there are different nations and they have different bases for doing things. ... I guess if I was aware of another country that was doing something better, I would always like to do things better. Not necessarily because I want to try to do something the same as another international country, but because I want to do it better."
"I'm going to say medium . And, I'll be honest, the reason I'm saying it is I'm not quite sure what it means."	3 or 4 = 3.5 (non-advocate)	"I'm going to start off by saying I don't know...my best guess would be it's a matter of both taking a look at different international perspectives on topics, teaching related to those, as well as being accepting of different international viewpoints that may come about."

MU participants articulated a wide array of definitions to this interview question. It was no surprise that some interviewees were not familiar with the term “comprehensive internationalization” because university leaders often create their own labels for what internationalization or global means for their campus. However, participants were able to articulate some aspects of a globally engaged university in relation to CI. Those with whom I spoke mentioned collaborative research, exchanging ideas with international partners (perhaps at international conferences), integration of intercultural and global understanding, the need for international student experiences or programs in other countries, and the importance of differing perspectives and viewpoints. One study participant suggested that higher education was the same around the world. I found this response surprising at first, because I have observed how different universities are in different countries, but the idea has merit since universities are indeed similar in many respects.

When searching online for documents at MU regarding the university’s strategic plan, I found one from 2015 that included sections addressing international recognition/profile to help research growth, students in the job market, a diversity of ideas, engagement throughout the state and world, recruitment of talent from the state and internationally, deliberate support of internationalization to help students appreciate and connect with the global environment, and the strengthening of research through international partnerships (MU*, 2015). As this was written, MU was in the process of finalizing a new strategic plan

The MU college of engineering’s existing strategic plan (2013), however, did not mention global topics (MU*, 2013). It appears from online content that the college is in the middle of finalizing a new strategic plan as well (MUa*, 2020). I expect that the college will include more about global engagement given its inclusion in the university’s strategic plan. This

expected change is indicated by a new program created within the college curriculum that highlights global perspectives and emphasizes study abroad experiences. I also learned in the interviews that a new dean was encouraging faculty members to engage internationally.

I situated the next interview question immediately after I shared Hudzik’s (2011) definition of CI (see Appendix M) with the interviewees. That query asked: *Would you describe your university’s efforts to internationalize comprehensively as intentional? If so, why? If not, why not?* Table 10 (below) shares faculty thoughts concerning this question.

Table 10: MU Answers to Interview Question #4 about MU Intentionality of CI

Answer to Interview Question #4 about MU Intentionality
"I would like to believe they are, but I'll be honest, I haven't thought real deeply about that...I'm well aware of efforts to both develop partnerships with other academic institutions, bringing students here, partnerships both at the undergraduate and graduate level. Partnerships to bring faculty and other visitors from other institutions to share their perspectives. ... I think the college is supportive. I think they're still trying to find the right balance of this, meaning they clearly want to build international relationships, they want to bring in graduate students, but it's a matter of resources, trying to balance how many resources how to put toward that versus how much of our resources to devote to working more just on our issues without that broader perspective."
"I would say so ... the university intentionally tries to attract more international students to come to [MU] campus and build those joint degree programs. I think that's definitely an intentional effort and the teaching was one aspect of comprehensive internationalization. In terms of research. That part, I am not quite sure the university at institutional level been that as proactive as teaching. ... It's more of individual faculty driven. If I understand this working definition correctly, this isn't some more at institutional level, what have they done? Have they been really intentional in promoting the collaboration of research, teaching, and service? That's kind of my impression, for the research side is more individual faculty driven."
"I would say traditionally not, very recently becoming intentional ... historically, unintentional ... I mean it [CI activities] happened, but it was not necessarily coordinated outside of study abroad opportunities. A lot has happened over the last few years."
"I would say yeah, yeah intentional ... this is [an] old university with a lot of alumni from all over the world and the tradition goes on. ... I would say last 10 years or so, and also it goes partly with the leadership."
"I'm not really sure ... what I've seen along these lines has been more aimed at diversity and inclusion ... at the graduate level we have historically gotten a fair number of [country reference removed] graduate students."
"Yeah, they do have some very intentional programs in that area ... for instance, in the engineering college, which is what I'm part of, quite a few study-abroad opportunities for students...And in professors of course. The professors go to [country named removed] or Europe. I think there's been some in Asia where you can study abroad. ... We are definitely encouraged as faculty to attend conferences ... and he [the chair of CEE] was encouraging me to do a few more international

conferences as part of my work towards becoming a professor. ... We have certain courses that we encourage students to take that have global perspectives. That's more at the university level."

Participants voiced varying degrees of affirmation. The comments collectively painted a picture of a university that is in a transition, from not intentional to a purposeful leadership, at least concerning support for CI. One participant put the transition this way: "I would say traditionally not [intentional], very recently becoming intentional... A lot has happened over the last few years" (MU3, 4-Feb-2019). Other participants' views of CI seemed also to be transitioning. Some listed a grouping of programs that was very intentional, one noted an international alumni presence, and another indicated that the teaching mission was quite deliberate, but shared that research is faculty driven (and perhaps not meant to be an intentional effort by the university, but rather by faculty). Research question #2 pushed a little deeper into the ways that interviewees saw MU CI-related efforts as purposeful.

Research Question 2: MU

The second research question (see Table 2) for this study sought to examine civil and environmental engineering faculty members' perceptions of university leader investment in CI, as well as that evidenced by leaders of the college of engineering, the CEE department, and among their colleagues. I was especially interested in identifying the resources available to support CI at all levels of the institution. I also hoped to learn how successfully university leaders were communicating their aims concerning CI to faculty and whether professors understood how they could access such support as was available for CI efforts.

MU interviewee responses to the question addressing investment varied. Some prominent words that arose concerning this query were resources, effort, faculty, research, abroad, people,

inclusion efforts. Regarding specific programs at the college level, one interviewee observed that “we as a college do not have a lot of international activities, and that's something that we need to do” (MU3, 4-FEB-2019). Comments such as these and other documents data suggest that MU is increasing its focus on CI. However, there appears to be a disconnect between top administration and faculty members, especially regarding the place of research in comprehensive internationalization. I will discuss this topic further in the Research Question 5 section of this chapter. I turn next to interviewee perceptions of infrastructure as those arose in response to research question #3.

Research Question 3: MU

The third research question (see Table 2) elicited faculty member perceptions of the relative adequacy of support to engage in CI by asking about the level and character of university organizational and programmatic resources available, opportunities for their teaching involvement, research and service, faculty seminars or workshops, and campuses or centers abroad. I reviewed the interviews for evidence of established campus infrastructure aimed at supporting faculty engagement in CI.

An interview question asked:

*Please share your thoughts regarding comprehensive internationalization **infrastructure** at your institution (as a follow-up can ask about the following categories:)*

- *Organizational & programmatic resources*
- *Opportunities for faculty exploration in CI in teaching, research, and service*
- *Faculty seminars/workshops*
- *Campuses or centers abroad*

Table 11 (below) highlights some basic information, positive and negative comments/language that addressed infrastructure during MU participant interviews (above Table 11 is a list of infrastructure codes as reference, see Appendix O/Codebook for more information). It is important to note that I offered the bulleted follow-up categories for this question after early faculty participants suggested they were uncertain what the term “infrastructure” was meant to address.

Meaning of Infrastructure Codes (Model refers to Childress, 2010)			
INFPRT	Pre-model share of association in terms of infrastructure	INFPRNL	Pre-model share of negative infrastructure language
INF POT	Post-model share of association in terms of infrastructure	INF PONL	Post-model share of negative infrastructure language
INFPRPL	Pre-model share of positive infrastructure language	INFPRBI	Pre-model share of basic ideas/phrases in terms of infrastructure
INFPOPL	Post-model share of positive infrastructure language	INFPOBI	Post-model share of basic ideas/phrases in terms of infrastructure

Table 11: MU Comments on Infrastructure

MU Comments on Infrastructure	
<i>(when asked of infrastructure to help faculty to have opportunities to explore CI), "I haven't really proactively pursued those opportunities. I cannot really say how well. Like if I wanted to bring in international scholar to my lab, those offices I mentioned earlier was very helpful."</i> (INFPRBI)	"That institute is very much directed at both state, but also national and international [levels]...There are many opportunities there to be involved in [word removed]-related issues." (INFPRT)
<i>(When asked about centers or campuses abroad), "Maybe, but I'm not aware of them."</i> (INFPRT)	"I'm becoming more familiar with it [immigration rules], since we've had a few troubles." (INF PONL)
<i>(When asked about where to go if faculty wanted to do a study abroad program), "that would be through the dean's office... We just hired a new dean...two deans before him both were strongly in support of international. ... Study abroad type of programs. I think the same will be true of our new dean, just because he</i>	"I know there's the Export Control Office, that seems to be proactive for faculties who does have international collaboration. They send in training materials where have those seminars. I haven't been participating because I don't have those research activities. But yes, I think that's another resource here." (INFPRT)

<p>has a very strong emphasis on education." (INFPRT)</p>	
<p>"It's [MU]center that was overseas somewhere ... I think it's not a center, I feel like it's just maybe two faculties there for two semesters. ... It was faculty to teach." (INFPRT)</p>	<p><i>(when asked of infrastructure like faculty workshops and seminars promoting CI),</i> "Available on campus for faculties to do those? I'm not aware of anything particularly for that." (INFPRT)</p>
<p>"Infrastructure-wise ... Certainly there's no ... They don't hold you back from doing it, from partaking in seminars, international degree programs. I don't know that we have any campuses overseas. We have joint agreements; I don't know if that is included." (INFPOT)</p>	<p><i>(when asked of infrastructure for visiting scholars),</i> "So that has been, I think running smoothly. And they have orientations every week so, whenever international scholars are coming in, they can quickly receive orientation, get familiarized with the campus and regulations. So, I thought that was a good office." (INFPRL)</p>
<p>"There also are some collaborative cooperation ... we also can send our students to [country named removed] to study there for a year. ... It's a research exchange, but it involves classes. It's more like a graduate research assistantship." (INFPRT)</p>	<p><i>(When asked about faculty seminars and workshops in CI),</i> "So, in terms of organizational stuff, I would say that the campus is ... the organization is very good." (INFPRT)</p>
<p><i>(when asked about infrastructure like organizational or programmatic resources in CI),</i> "I haven't really been involved in much of this kind of effort. I'm not quite sure what kind of resources are there or are not there. I know in the news, there's some leadership position was created or filled just to promote international collaboration." (INFPRT)</p>	<p>"The [name removed] Institute because I'm part of that, I know they have some agreement with the [country name removed] government, so they sometimes bring the international scholars here to go through the fellowship and internship programs. That seems to be also a well-run program, but it's a much smaller scale." (INFPRT)</p>
<p>"In research there's always opportunities because you can set up your own. ... Most of the opportunities I've had where I've dealt internationally have been more at a personal level. Seeking out grants and finding them. Not necessarily the university telling me what grants are available in that area or pushing me to. I think they're a little bit more lenient about that. They want faculty to make their own decisions about what directions they want to pursue." (INFPRT)</p>	<p><i>(when asked about organizational or programmatic resources),</i> "I can't really say that I've seen too much in that area. You're talking about information that would be shared with faculty about international opportunities. We certainly have international studies departments." (INFPRT)</p>
<p><i>(When asked about faculty opportunities to explore CI),</i> "They don't jump to mind. That's not saying that they don't exist, but I just ... they're not coming to my mind." (INFPRT)</p>	<p>"In terms of supporting, again, CI activities, it all goes through this Global Strategies office. They are wanting and willing to help facilitate anything related to internationalization." (INFPRT)</p>
<p>"Well, I think that there are some things, like sabbaticals and full-ride programs and things like that, that are kind of geared towards international cooperation." (INFPRT)</p>	<p>"Yeah, so teaching part is very common. Like any other university has those things that goes on through the Chancellor's office." (INFPRT)</p>

<i>(When asked about centers or campuses abroad),</i> "No, I don't think so." (INFPRT)	"There's a separate immigration office, it's called ISSO." (INFPRT)
"I think just basically the services that are there to help international students, I'm sure that there are such." (INFPRT)	"I think in general, at this campus, at [MU] there's tons of opportunities for faculty development in any area you can think of, and internationalization is one." (INFPRT)
"So there's kind of a range but what I see is it's hard for me to see everything in a coherent organization that they have and I realize why is leadership for research is kind of segmented to be different than for teaching than say extension and service. And there is kind of a segmentation in that way so it's harder to have everything be centralized in an organized core." (INFPRT)	"That [participating in international travel abroad to help other in another country with your expertise] should lead to exploration, that you'll be able to answer some questions that have been bothering you from a research perspective as well as being introduced to bright and young women and men who could end up coming here, getting their degrees, staying for PhD, going back and really making an impact." (INFPOBI)
"I'm not sure I know all that exists here ... we have an International Affairs Office that both works with our international students everything from visas and so on ... help faculty preparing Fulbright proposals...study abroad office ... Dean's Office ... in engineering, there have been different initiatives to work with other partnering universities abroad. ... Often the real challenges we have is trying to find the money to pay for them." (INFPRT)	"So, the offices are there and you say that these are primarily handled by administrators, nonacademic type people ... the ones who are leading their first, they don't have academic appointments typically like on the Global Engagement Head ... or the Associate Vice Chancellor in Chancellor's office. They are not typically faculty, they're administrators. Office staff and full-time staff that way. ... And our institute is bit different, we do a lot of ... It's a big investment." (INFPRT)

Like the investment interview question, the infrastructure question allowed MU participants to articulate a wide variety of thoughts. Some faculty focused on CI programs and logistics, including immigration offices associated with international students and visiting scholars, while others focused on their personal international connections. One interviewee expressed his thoughts about research and CI this way:

In research there's always opportunities because you can set up your own. ... Most of the opportunities I've had where I've dealt internationally have been more at a personal level. ... They want faculty to make their own decisions about what directions they want to pursue (MU2, 4-Feb-2019).

Thus, a barrier may exist to collaborative research initiatives if faculty members are too individually focused and do not engage other researchers abroad in partnerships that tend to be more sustainable with shared leadership. Also, the question about infrastructure elicited varying levels of awareness about university leader thinking concerning CI. However, all of the MU

interviewees seemed to believe that their institution's top administrators were or would be supportive of any comprehensive internationalization effort faculty were interested in seeking. Collectively, the MU faculty participants mentioned the following offices relevant to CI (see below) during their interviews:

- An office that handles collaboration agreements
- International Studies Department
- Dean of the College of Engineering's Office
- International Students and Scholars Office/ISSO
- Immigration Office
- Global Strategies Office
- Graduate School
- Export Control Office
- International Affairs Office
- Chancellor's Office
- Study Abroad Office
- Fulbright Office

This list is, in fact, a representation of the offices at MU pertinent to CI. It suggests that collectively, MU CEE faculty members have enough knowledge about infrastructure at their university to find needed support and resources to engage in internationalization.

Research Question 4: MU

The fourth research question (see Table 2) for this study sought to elicit interviewee perceptions of institutional networks provided for them to engage in CI by asking about the existence of communication channels that regularly highlight such efforts, learning opportunities linked to related models and partnerships, connections to peer work in global engagement, and timely communication regarding upcoming potential sources of funding to support collaborations. I was interested in interviewee perceptions of institutional networks created and maintained by MU's CI leaders that were aimed at encouraging interdisciplinary and collaborative international relationships for faculty.

I asked the following interview question:

Please share your thoughts regarding comprehensive internationalization institutional networks at your institution such as: communication channels, learning opportunities about partnerships and models, connections to peer groups, timely communications about upcoming events, policy change, etc.

Table 12 provides input about types of communication with some sample quotations from MU interviewees.

Table 12: MU Institutional Network Types

Type of Communication	Example Quotes from MU
Email	"The center, they have their own email list. ... They do send out mass emails to the email list."
Newsletters	"I would say it's the same way as everything else. Newsletters and... I don't think there's specific newsletters for comprehensive internationalization."
Memo	"I think that it's more likely you would find an article embedded within an existing newsletter or memo."
Peers	"I've done networking from the international standpoint [and it] is just knowing which of my peers have connections in what countries at what institutions and just asking them to help make introductions."

MU faculty members appeared to be more focused on the units/offices that provided materials than the forms of communication they shared. For example, interviewees mentioned individual offices sending communications, such as the International Affairs Office, the research office, the Global Engagement Office, Study Abroad Office, and the Global Strategies Office in answer to questions about institutional networks or sources of information. According to participants, these offices only use the university's main mass emails, newsletters, and memos; regardless, the faculty participants were aware of the offices that generated CI-related content.

Research Question 5: MU

The fifth research question (see Table 2) explored whether interviewees perceived sufficient support on campus to permit them to connect and engage their individual teaching and

research goals to CI. I also sought to discern whether those with whom I spoke agreed that it is important to create globally prepared university students.

The related interview question asked:

(a) Do you feel individually supported to engage in comprehensive internationalization on your campus? (b) Do you feel that the university helps you connect your teaching and research to this mission?

Table 13 displays answers to interview question #8 and shares some contextual comments.

Table 13: MU Individual Support Answers to Interview Question #8

MU Answers Concerning Individual Support, Interview Question #8	
8a	8b
"I think if individual faculty want to do research, as long as there are records in compliance with Export Control that type of things. I think they can do it. As for how much support they can get from the university, that I'm not sure."	"That's not ever part of my goal. It hasn't been on my radar to intentionally bring the two together in a context of comprehensive internalization. So, I don't feel like the university. ... But I feel like there are resources available."
"Certainly, at some levels, yeah. We're very much encouraged to go to conferences worldwide. If we want to apply for a sabbatical, we're encouraged to do so ... I would say that we're very much supported."	"That's a different question. I'd say they give you the tools that you'd need to do it, but they don't necessarily dictate anything that's in your courses or ask you to do anything. Most of the courses we teach, it's very much faculty governed. ... We do not really talk about the cultural or social global impacts."
"Yeah, I do. ... There's too few study-abroad opportunities that are directed towards engineers ... this entity is wanting like crazy for us to get engaged in whatever internationally. ... Obviously, they're interested in courses."	"I would say I don't think that's the case right now, honestly. ... No, I would say no. ... From a teaching perspective, I'll focus on the undergraduate level, one of the things that kind of unfortunately limits our ability in a lot of areas, but especially civil engineering, to innovate is accreditation. It doesn't limit it as much as people think, but there's some pretty. ... It's pretty codified in civil engineering, in terms of what you need to do to stay accredited."
"If somebody wants to do that, that is administrative level support. But it has to come from probably from individual basis. But from our administrator point of view, which I know because knowing the administrators, they will pick the people who have the credentials, are willing to spend the time to do it."	N/A

<p>"I think my administrators would be indifferent to it ... the globalization part, some of our people might go on to work with larger companies that do international work, but most of them probably will not. So, for that reason, I would say it would be a relatively lower priority objective."</p>	<p>"I don't think I really do. I mean, I'm not advocating for a wall, but I'm not ... at the same time, I'm not telling everybody that you should be aware of all these international things either."</p>
<p>"I don't see comprehensive internationalization as a primary metric by which I am evaluated. ... With that said, I do see cases where one is engaging internationally that one may give that bonus points ... [explains an opportunity]. ... I like the idea of it to have the relationships, build the partnerships, but it's taking some time to work through since that particular project isn't essential that it's done in that place. But I see larger benefits to doing it."</p>	<p>"Directly, no. I don't see any direct push in that way. I do see support as one would like to do that. I don't see opposition. I see some degree of support ... I've tried myself to, in the tentacle areas...how they're applied elsewhere in the United States but also somewhere else in the world. ... And I find from an educational standpoint that's useful to share with students and get them thinking about [global topics]."</p>

Table 13 shows that MU faculty members had different responses to part ‘a’ of this question. Four of the participants indicated that they perceived they were being encouraged to engage in internationalization. For example, MU3 stated that, “... this entity is wanting like crazy for us to get engaged in whatever internationally” (4-Feb-2019) and MU6 saw the benefit of CI work, but suggested that since it was not used in annual performance or tenure and promotion evaluations, it was more like “bonus points” (5-Feb-2019). However, the remaining participants had different thoughts on this topic. MU5 said the administration “would be indifferent to it” (5-Feb-2019) and MU4 expressed the importance of faculty members coming to CI initiatives on their own, but implied that there would be a vetting/approval process to determine the appropriate fit of those interested (5-Feb-2019).

In response to part ‘b’ of interview question #8, one interviewee openly rejected CI as part of his teaching and research mission by saying, ““that's not ever part of my goal” (MU1, 4-Feb-2019). However, he did indicate that resources for such efforts are available on campus and thereby indicated that the university valued CI. Additionally, three other MU interviewees revealed that they were not encouraged by university leaders to connect teaching and research to

CI. Another participant explained that university leaders provide internationalization tools for faculty, but do not dictate what to do with them. This same participant noted that in courses “we do not really talk about the cultural or social global impacts” (MU2, 4-Feb-2019), but it was not clear if “we” meant CEE faculty, engineering faculty, or the entire MU faculty population.

I asked the following questions as part of the interview, *what do you feel was the greatest motivator for your participation? What were your overall reasons for participation?* Stated motivational reasons for MU faculty members to engage globally (or not engage) included:

- Good for promotion, “I am able to ultimately increase my productivity in terms of the metrics the university is looking for me to have” (MU6, 5-Feb-2019)
- Expands understanding for research and teaching
- [Lack of engagement reason], “Maybe lack of interest or motivation or need” (MU5, 5-Feb-2019)]
- Exposure to other people who did it well, and asked to serve as a mentor to early career faculty
- To see the world
- Influence of spouse who has an international education background
- Desire to help students understand how to work in global teams
- It is exciting to travel to other countries, and build new relationships
- Experiencing a different culture
- Connection to research
- The importance of sustainability to the future of society

In all, five faculty members expressed motivation to participate in CI at MU. As you can see from the above list, their individual motivations for engagement were varied. Two interviewees valued CI for its connection to their research while others indicated personal reasons or interest in supporting students as strong motivators for their position. The interviews suggested that there may be enough interested faculty members to address the growing emphasis among MU leadership for the university to engage more fully in CI.

An interview question, referring to faculty interest in ensuring global preparedness for students, asked:

(a) Do you think it is important to create globally prepared university students? (b) And do you feel that you personally do or should use part of your teaching role to prepare students to be global citizens and engineers?

MU faculty member participants answered part 'a' of this question in a number of ways:

- “Maybe a few years ago, I would say probably yes, globalization is a big thing. Now they have a new term called ‘slobalization’ [backlash to globalization]. It's not going to be as much. Not everybody, maybe for a certain percentage of students who are interested in building a career, depending on partnership with country overseas, then that will be helpful. I'm not sure that's universally true for all the students” (MU1, 4-Feb-2019).
- “Well sure, yeah. I do” (MU2, 4-Feb-2019).
- “I think it's very important to create globally prepared students” (MU3, 4-Feb-2019)
- “Yes” (MU4, 5-Feb-2019).
- “Yes. I think I have a lot more fundamental concerns [than creating globally prepared university students]” (MU5, 5-Feb-2019).
- “I think definitely that's very important given that the world is getting smaller, that clearly as they go through with their career, they're both going to be interacting more globally, but kind of as a point I'd made earlier, even if they're not interacting as much globally, just being aware of different perspectives both more broadly is useful, but even a tentative understanding of different perspectives may enrich their ability to think a little more nimbly about evolution of their field” (MU6, 5-Feb-2019).

MU faculty interviewees echoed their responses from part 'a' when responding to part 'b' of this question. For example,

- “Yeah, I think to a certain level, I would increase their awareness. But I would not put that emphasis upon the entire student body” (MU1, 4-Feb-2019).
- “Yeah, I do try to do that to some extent. It's a little bit harder in engineering than it might be in some other areas, because of a lot of the stuff we teach” (MU2, 4-Feb-2019).
- “I do feel it's important to do that. Do I do a good job of it? No” (MU3, 4-Feb-2019)
- “Yeah,” and explained that he is not currently teaching at MU, but instead teaches students through international research experience programs (MU4, 5-Feb-2019).
- “I don't think I really do. ... I'm not telling everybody that you should be aware of all these international things either” (MU5, 5-Feb-2019).
- The sixth interviewee in the 'a' part of question #10 followed that observation with “I'm not sure I do as well as I should cause I find a lot of the things I teach” (MU6, 5-Feb-2019).

It is apparent that MU could do more to encourage CI activities among engineering faculty members who already have an interest in CI. If MU desire to create a fully comprehensive

internationalization program, much thought will need to go into persuading the many faculty members who have yet to see much value in it.

Conclusions for MU

University level administrators at MU appear to have pressed a clear and articulated interest in comprehensively internationalizing the campus for the past several years. The information online about the upcoming, new university level strategic plan hints that the new plan will have a still stronger global engagement focus (MUB*, 2020). However, MU leaders have not been able as yet fully to convey the need for such, or to build trust with a sufficient number of university faculty members to make internationalization a priority on the campus. However, some new leaders in the college of engineering are currently working to outline goals integrating internationalization activities at that scale within the college. Several MU faculty interviewees expressed strong interest in encouraging student mobility and global skills, but did not go further to articulate a strong connection between CI initiatives and their research.

Another interesting finding arising from the MU faculty member interviews was that all participants seemed to be aware of and positively view a large research institute on campus that is globally engaged by nature. That center appeared to be doing excellent work to address global challenges. However, it is separate from the university by budget and administration. Its budget is also very large. MU leaders might wish to consider identifying ways for smaller faculty research groups to learn how to build their research on the global stage. Such efforts might diminish faculty members' felt need to compare their efforts negatively to those of the institute.

I grouped MU participant responses into the following categories in preliminary coding:

- Autonomy (i.e., the freedom to decide engagement level)
- Awareness Levels (i.e., participant's awareness of university's interest in CI)
- Interest in CI Connectedness to Career (i.e., one tied engagement to promotion and others cited lack of interest to lack of connection to evaluation)

- Faculty Values (i.e., research endeavor to be faculty-driven)
- Diversity (i.e., interest in different perspectives in their field)
- Student Care (i.e., all expressed some level of interest in preparing students for global awareness).

I examined these categories more closely and recoded the group into three main concepts.

The first was the way *historical constructs* within higher education created barriers to or enhanced participation in the global engagement of faculty. For example, historically, research has been and still is the domain of individual faculty members. I am not suggesting that it should be otherwise. However, at MU it appears that except for the large, independent institute mentioned earlier, CI has been the subject of little faculty inquiry. Interviewees seemed to fear that connecting internationalization to their research might entail giving up control over what they chose to investigate. One individual with whom I spoke commented that top-down efforts would be connected to teaching, but, “if it's research then it need[s] to be both bottom-up and top-down at the same time” (MU1, 4-Feb-2019). However, interviewees also suggested that there is insufficient infrastructure at MU to support that possibility on a routine basis. Another historical construct is faculty autonomy. Autonomy is good for CI because professors can choose how to engage in such efforts in ways that best benefit and interest them. That fact, in turn, should, in principle at least, also benefit students and the university. However, that autonomy can also represent a barrier if faculty members lack interest in suggested changes in their institution—in this case, CI.

The second theme focused on *what faculty members value* most. One of the things that interviewees mentioned several times was ‘people.’ One indicated that he thought that “people are wanting and willing to help [with CI activities]” (MU3, 4-Feb-2019). Most of the MU faculty with whom I spoke indicated that help would be available to any faculty member who was interested in CI initiatives. Participants also underscored the value of people associated with

such initiatives multiple times, in talking about visiting scholars and international students, by saying that one office for scholars has “orientations every week so, whenever international scholars are coming in, they can quickly receive orientation, [and] get familiarized with the campus and regulations” (MU1, 4-Feb-2019). Another value these interviewees expressed was diversity and inclusion. The MU faculty members with whom I spoke generally saw CI as an asset to their personal activities, and to the university overall.

The third theme, which emerged from the data, concerned how interviewees *perceived the outcomes of internationalization*. Those with whom I spoke appeared divided on whether CI was delivering positive benefits to MU. Some interviewees asserted strongly that such was the case while others perceived CI as much less significant. This difference constitutes a real challenge as university leaders seek to encourage faculty to engage more fully in internationalization initiatives.

Another expressed perception, with significant impact for CI outcomes, concerned the cost of such efforts, relative to their perceived value. One faculty participant shared that,

It [study abroad] is not a bad thing to do, but at the same time, it is potentially a significant financial burden. Potentially, it can disrupt other things. I mean, it's hard to tell exactly. Are you going to keep educational and professional activities going at the same pace or is this going to be sort of a vacation where you're not really moving forward on those fronts? I think some people would still say, even if it's more of a vacation, still, the cultural enrichment might be worthwhile (MU5, 5-Feb-2019).

The idea that international mobility is a vacation has long been a barrier to adoption of CI for many stakeholders in higher education. Participants shared other's perceptions of internationalization as they understood those, too. For example, one interviewee observed that, “Folks are saying why are these resources spent helping people in [country named removed],

why not here” (MU6, 5-Feb-2019). This comment is tied to zero-sum thinking. A comment from another MU interviewee also addressed this thinking,

If the implementation of the organization was not from a zero-sum game, meaning it was additional resources not taking away from other activities or funding, it [CI] would clearly be helpful. The place that many people would have a concern is if it's a zero-sum game, the question is what's being lost? (MU6, 5-Feb-2019).

MU leaders will need to address these perceptions thoughtfully if they are to succeed in institutionalizing CI more fully.

Overall, the responses of the MU interviewees neatly echoed the international outlook ranking for their institution. While there is more work to be done, MU does appear to be moving toward, “a commitment, confirmed through action, to infuse international and comparative perspectives throughout the teaching, research, and service missions” (Hudzik, 2011, p. 6).

4.4 Case Study 3: LU University

Overview of LU University and Participants

This third case study represents a land-grant university from the *Times Higher Education (THE)* world university rankings (2017) with a low ‘international outlook.’ I created categories from THE (2017) with scores that identified the ‘low-ranked’ universities as those with international outlook scores from 19.4 to 33.9. I refer to this university as LU. The international outlook ranking contained seven land-grant institutions in the low-rated category. I interviewed four faculty members from the sampled LU in March 2019, including one full professor, two associate professors, and one assistant professor. The average number of years that interviewees had worked as a faculty member was 15.9 years and the average number of years they had served as a faculty member at LU was 11.9. Half of the interviewees had spent all of their careers at LU. All LU participants were members of the same ethnic group, and only one shared their age. All

interviews for this group took between 24-32 minutes except one, which lasted about 55 minutes. One interviewee also had experience in academic administration.

Only one faculty member self-identified, as requested, into a category of advocacy concerning comprehensive internationalization (CI) prior to the start of our interview. That individual self-identified as a CI moderate. The rest of the interviewees expressed unwillingness to categorize themselves and offered comments similar to LU2's, "I don't know what it means, so I don't think I can" (11-Mar-2019). Near the end of each interview (in interview question #13, see Appendix L), after I had shared and discussed the study's working definition of CI (see Appendix M) and the study's framework (see Appendix N & Figure 1), I asked participants to rate their global engagement on a scale of 1 to 10 (with 10 as best). As with all other interviewees, I then placed their responses along the following scale:

- 1-3.9 as "non-advocate,"
- 4-7.4 as "moderate", and
- 7.5-10 as "strong."

That ranking identified two strong advocates of CI (the initial moderate was raised to a strong, based on his final personal ranking), and two moderates. I discuss the relationship between self-identified CI advocacy levels and final global engagement rankings later in this chapter.

Research Question 1: LU

The first research question (see Table 2) for this study sought to explore how civil and environmental engineering faculty members from LU individually defined and described CI in higher education. I used this question to understand better the intentionality of campus leaders towards CI as an institutional priority and their companion ability to convey that message to faculty members. The following table includes excerpts from interviewee definitions of CI (prior

to their learning the working definition used in this study). Table 14 provides individual self-identified advocacy levels and final global engagement rankings:

Table 14: LU Definitions of CI (prior to learning an official definition of this term)

Self-Identified Level of Advocacy	Final Global Engagement Ranking Indicator	Response Excerpts from LU Definitions of CI
"I don't know if I'm an advocate or not because I don't know what it is."	9 (strong)	"I would guess that you're talking about some sort of collaborations across borders with other countries. Like my research, and you know collaborating with colleagues in Europe or Asia or wherever and working on the same sorts of problems that are affecting all of us."
"I don't know what it means, so I don't think I can."	5 (moderate)	"Maybe something to do with approaching the topics in a way that it can be applied to any country or to any nationality."
"Wasn't sure", did not provide category.	4 (moderate)	"So, considering education in terms of internationally being receptive towards international views, receptive towards internationals, coming to the university."
Moderate	7 or 8 = 7.5 (strong)	"I see that it's our job, especially in Civil Engineering, to have students, future engineers understand the global impact of their engineering solutions. How will it affect global cultures? How will you have to work with global cultures? We in the United States have all too often thought that we are the central thought syndrome of the world. That is no longer the case, and we need to understand that there are other societies and other cultures out there that have equal, if not better solutions than we have. And students need to hear it from someone who's not only just been a full-time Academic, but also out in the [removed] business."

Faculty responses to this question identified basic connections to internationalization, but also did not express much depth of awareness of CI. As you can see in Table 14, two participants hesitated to define the construct and qualified their statements with phrases like “I would guess” (LU1, 11-Mar-2019) and “maybe” (LU2, 11-Mar-2019). LU3 (11-Mar-2019) spoke of being receptive and revealed an inward facing mindset. However, LU4 (12-Feb-2019),

who self-identified as a moderate advocate, defined CI in a way that focused both on how the U.S. influenced cultures *and* how those societies should, and do, influence our own.

When I visited campus, the LU College of Engineering's International Engineering Program page encouraged students to participate in a special program involving their engineering degree and language training. That initiative operated within one foreign country and its existence suggests the university's interest in academic global engagement. Additionally, LU has an international center abroad used for faculty-led programs. Nevertheless, the university's metrics in its strategic plan mentioned international studies in only one goal that otherwise treated varied learning experiences for students (LU*, 2017). I also found information about an online learning initiative that included the word "global," and a top ranked undergraduate degree program that mentioned the 'inclusion of global content...' (LU*, n.d.). Overall, LU appeared to be making some effort to move toward internationalization. However, that effort appeared inadequate to date to realize CI, at least as evidenced by interviewee responses.

I situated the next interview question immediately after I shared Hudzik's (2011) definition of CI (see Appendix M) with the interviewees. That question asked, *would you describe your university's efforts to internationalize comprehensively as intentional? If so, why? If not, why not?* Table 15 (below) shares interviewee responses to this question.

Table 15: LU Answers to Interview Question #4 about LU Intentionality of CI

Answer to Interview Question #4 about LU Intentionality
"I guess no ..., I'm not sure that international and comparative perspectives are infused throughout teaching, research and service. I think there's things that we do here that bring in this international perspective, but I don't know that I would say you could describe it as comprehensive or intentional. I think it's...It's something that goes on, but it's not completely integral to everything that we do."
"I think we're[college of engineering] very intentional, and that runs from international recruitment, to international partnerships. We have memorandums of understanding with probably 32 universities across the world. ... It's much broader than that, institution-wise. Those memorandums of understanding are relative to exchange students or creating programs of instruction that our students can partake in... We've got MOUs with probably another 50 universities around the world, relative to research contracts, and research collaboration. And of course, about 70% of our graduate students, especially at the PhD level, about 70% of those are international students."
"I would say yes. ... I think we're very sensitive towards being more open minded internationally and drawing students internationally to this location."
"Yes, ... I know several people in our international students' office that work very hard to infuse the campus with viewpoints and other things from different cultures and communities globally. Like we have all sorts of, from a teaching perspective, we have all sorts of international student workshops and various programs on campus for understanding other cultures and addressing needs from other cultures and so forth."

Three participants reported that LU was intentional in its CI efforts and cited attitudes, memoranda of understanding, collaborations, and workshops. However, one participant said “no”, that LU was not intentional while acknowledging that some things were happening in the global space at LU. Research question #2 probed more deeply into the ways that interviewees perceived HU leaders were acting intentionally to secure internationalization.

Research Question 2: LU

The second research question (see Table 2) for this study solicited Civil & Environmental Engineering faculty members’ perceptions of university leader CI-related investment in the college of engineering, the CEE department, and themselves. I asked this question to gauge the level of resources interviewees perceived to be available for CI. Additionally, I expected to learn how successfully university leaders were communicating their aims concerning CI to faculty and whether professors understood how they could access support for such efforts.

Interviewee responses to this question varied. Some words that were prominent in their observations included: recruitment, different, and tuition. I created a word cloud to visualize the vocabulary present in LU faculty responses to this question (see Figure 5).

Figure 5: LU Word Cloud of Investment Responses

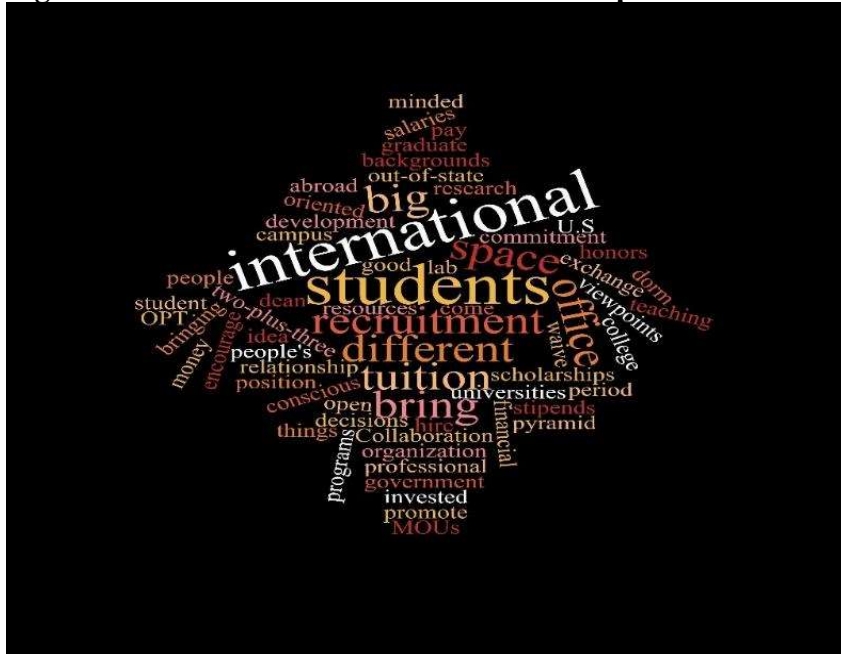


Figure 5 suggests that LU interviewees collectively mentioned many aspects of CI on their campus. However, overall, the word cloud indicated that investment on the campus was largely inward facing, meaning responses were mainly centered on how efforts affect those on the LU campus. Even collectively, the most prominent CI linked emphasis concerned international student recruitment--about bringing such individuals and the tuition associated with them, as well as their perspectives, to the LU campus.

Research Question 3: LU

The third research question (see Table 2) elicited faculty member perceptions of the adequacy of support to engage in CI by asking about the level and character of university aid as it related to organizational and programmatic resources, opportunities for their teaching involvement in CI, research and service, faculty seminars or workshops, and campuses or centers

abroad. I paid special attention to evidence of established campus infrastructure aimed at supporting faculty engagement in CI.

An interview question asked:

*Please share your thoughts regarding comprehensive internationalization **infrastructure** at your institution (as a follow-up can ask about the following categories:)*

- *Organizational and programmatic resources*
- *Opportunities for faculty exploration of CI in teaching, research, and service*
- *Faculty seminars/workshops*
- *Campuses or centers abroad*

Table 16 (below) highlights some basic information, positive and negative comments/language that LU interviewees articulated concerning CI infrastructure (above Table 16 is a list of infrastructure codes as reference, see Appendix O/Codebook for more information). It is important to note that I offered the bulleted follow-up categories for this question after early faculty participants suggested they were uncertain what the term “infrastructure” was meant to address.

Meaning of Infrastructure Codes (Model refers to Childress, 2010)			
INFPRT	Pre-model share of association in terms of infrastructure	INFPRNL	Pre-model share of negative infrastructure language
INF POT	Post-model share of association in terms of infrastructure	INF PONL	Post-model share of negative infrastructure language
INFPRPL	Pre-model share of positive infrastructure language	INFPRBI	Pre-model share of basic ideas/phrases in terms of infrastructure
INFPOPL	Post-model share of positive infrastructure language	INFPOBI	Post-model share of basic ideas/phrases in terms of infrastructure

Table 16: LU Comments on Infrastructure

LU Comments on Infrastructure	
"So, like I mentioned the department, at the college level, the Honors College as well as university level, they support us going out for recruitment trips, they support us going out for seminars." (INFPRT)	(when asked about campuses or centers abroad), "We have tried to develop relationships with other universities, so partnering with other universities. We have study abroad programs. So, there's partnerships." (INFPRT)
(when asking about opportunities for faculty to explore internationalizing teaching, research & service), "I'm not familiar." (INFPRT)	"So, I know that we do some study abroad stuff and I think at least one of the members of our faculty has gone to [country name removed] as part of that." (INFPRT)
"I don't know exactly what they [study abroad office] do, but I assume they cover a lot of these things. I don't know if they give financial support for some of these costs, but I know that they help people navigate these things." (INFPOBI)	(When asked about faculty workshops or seminars on campus), "That they've held here? No, they haven't. I mean, not that I've really attended, I know that I'm probably not the best person to talk to about that, but it would be surprising if they didn't have faculty workshops." (INFPRT)
"Student chapters of different nationalities or groups there. There are scholarships." (INFPRT)	(when asking about faculty seminars and workshops to encourage CI), "I am not aware." (INFPRT)
(When asked about centers or campuses abroad), "I think there is a [international city named removed] center, If I 'm not mistaken? (INFPRT)	"We do have at the university level, some teaching workshops and stuff. And I can't say for sure, but my guess is that there's been one about international students." (INFPRT)
"And you know, I should say, this just reminded me, I mean the university has a central study abroad officeAnd I think it's mostly targeted for students, but that kind of fits in with this stuff." (INFPOBI)	"So, we have a Fulbright scholar ... lots of faculty do that, when they take their sabbaticals, they get Fulbright grants to help support them." (INFPRPL)
"University has the [international city named removed] Center. ... We have students not only from the [LU-Univ], but other U.S. schools go there. We teach programs there" (INFPRT)	"I don't know what we're doing at the college level that would be outside of those things that I've described." (INFPRT)
"Faculty members lead study abroad." (INFPRT)	"We have several research programs on [topic removed]." (INFPRT)
"After every seven years of service, you're eligible to do an off-campus duty assignment, and we have many faculty members that do those abroad, and partner with international institutions." (INFPRT)	"We have service-learning projects ..., if there's an engineering component to any of those, then we'll have an Engineering faculty member leading and coordinating those efforts." (INFPRT)
"We have a two-plus-three program, where they study in their country for one year, come here for three years, and then go back for the final year and finish their degree." (INFPOBI)	"We have co-advisers from each [international] university." (INFPOBI)

Unlike the interview question, the infrastructure query prompted a balanced set of inward and outward facing topics. There were still comments on recruitment and international students on

campus, but all participants also included the university's study abroad programs, and three mentioned opportunities abroad for faculty sabbaticals (of which Fulbright can be an example). Three participants noted the international engineering program specifically, which indicates moderate awareness about that college program.

LU interviewee responses to the question about infrastructure reflected a focus on undergraduate teaching and service programs. Interviewees also discussed international programming and physical offices/space as forms of infrastructure. All LU faculty members seemed to be aware of university offices to support CI, and were united in stating that faculty support, by means of workshops and seminars, was quite limited. LU interviewees mentioned the following CI-related offices:

- Honors College
- International Students Office
- Fulbright Application Office
- Fellowship Office
- Immigration Office
- Education Abroad Office
- Central Study Abroad Office
- Recruitment Office
- College of Engineering Dean's Office
- Chancellor's Office

This list and interviewee responses concerning infrastructure indicate that LU leaders have been moderately successful in communicating such information to LU faculty members.

Research Question 4: LU

The fourth research question (see Table 2) solicited interviewee perceptions of the institutional networks provided for them to engage in CI by asking about communication channels that regularly highlight CI, learning opportunities associated with models and partnerships for CI, connections to peer work linked to global engagement, and timely

communication regarding upcoming funding or collaboration sources. I was interested in learning whether LU’s CI leaders had created and maintained institutional networks aimed at encouraging interdisciplinary and collaborative global faculty relationships.

I asked the following interview question:

Please share your thoughts regarding comprehensive internationalization institutional networks at your institution such as: communication channels, learning opportunities about partnerships and models, connections to peer groups, timely communications about upcoming events, policy change, etc.

Table 17 provides input examples of the types of communication interviewees highlighted.

Table 17: LU Institutional Network Types

Type of Communication	Example Quotes from LU
Email	<ol style="list-style-type: none"> 1. "We have with the daily e-mail newsletter that comes out from the university." 2. "Our Dean ... does a synthesis of the newswire for the college of engineering's faculty, saying like oh, be aware of this is in there and this happened." 3. "Usually about a week before classes start, there'll be e-mail blasts going to everybody."
Seek Individuals	<ol style="list-style-type: none"> 1. "I'm aware of those programs so I would just go and find out who to ask. It's a different, it's just like anything, if you know something exists and you want to know more about it, and you can just go ask someone." 2. "I don't know. I mean, I would say our guy, the associate dean that I was talking about or assistant Dean, his name's [name removed], and I know if I needed information about that kind of thing, I think that's who I would go to. And I'm fairly certain he would have a good idea."
Meetings	"It's usually communicated through email or <u>at our faculty meetings</u> . That would be another way."

The LU faculty participants appeared to be responsive to the forms of communication on campus. Email and newsletters did not appear to be specific to CI, nor did interviewees indicate that offices such as study abroad sent individualized emails. The main campus email and newsletters were broad and included CI initiatives amongst many other opportunities. One participant said that he learned about “Chancellor grant opportunities” from communication

channels and that “perhaps [Chancellor grants] can support teaching abroad” (LU1, 11-Mar-2019). How much effort LU put into CI communication also came into question when one participant stated that, “I don't know that there's an active effort to get us all involved in that stuff [CI activities] necessarily” (LU2,11-Mar-2019). The next research question explores individual internationalization related support for faculty.

Research Question 5: LU

The fifth research question (see Table 2) asked whether interviewees perceived there was sufficient individual support on campus to connect and engage their individual teaching and research goals related to CI. I also sought to discern whether those with whom I spoke agreed that it is important to create globally prepared university students.

The related interview question asked:

(a) Do you feel individually supported to engage in comprehensive internationalization on your campus? (b) Do you feel that the university helps you connect your teaching and research to this mission?

Table 18 displays interviewee responses to interview question #8 and shares some contextual comments.

Table 18: LU Individual Support Answers to Interview Question #8

LU Answers Concerning Individual Support, Interview Question #8	
8a	8b
"Yeah totally. I have been trying real hard for the last five years to recruit people from [country named removed]."	"Yeah, sure, totally."
"Sure. I guess I think that if I was interested in trying to learn more about these things, I think that I could find someone to help me do what I needed to do to get these perspectives, whatever that might be."	"I guess maybe not actively, but like I say, I feel like if there was one of these topics that I was really interested in like learning about teaching perspectives in other countries, I think that my superiors and peers would be open to me pursuing that kind of thing."
"Yes."	"Yes. I mean the university wouldn't oppose it. So, either way. I mean we don't get bonus points or anything like that."
"To the extent that I want to be engaged, I think I'm very well-supported. I would say unless you have resources of your own, it's difficult to get resources from the University, to pursue an international collaboration. ... I need to figure out on my own how I'm going to get that money to do that."	"Sure. I spent once ... I'll say a half a Summer in [int'l city named removed] ... teaching courses ... fully supported by the university. ... Of course, we have opportunities to go to international conferences and present our work. And that's when you can get some travel assistance if you need it."

Most LU faculty I interviewed expressed nominal university support for them as individuals to engage in CI initiatives. One interviewee commented that they can choose “the extent that I [they] want to be engaged” (LU4, 12-Mar-2019) Another participant focused on describing CI in terms of the international student talent that can be recruited to LU to support their research program. International student recruitment is a part of CI, but institutional leaders also need to encourage their faculty members to engage in other aspects of global activity to promote their individual career goals as well to realize the full intent of the construct.

I asked the following questions as part of the interview, *what do you feel was the greatest motivator for your participation? What were your overall reasons for participation?*

Motivational reasons for LU faculty members to engage globally (or not to engage) included:

- Different perspective(s) available, “I get a lot of different ideas for future research and other things from just talking with people that are experiencing different things in these other countries” (LU1, 11-Mar-2019).
- Collaborative environment.
- The world is very small, “we live in a very interconnected world” (LU2, 11-Mar-2019)

- “I’m also not a US citizen though, so I think I have a little bit of an international perspective from my personal life” (LU [number intentionally withheld], 11-Mar-2019).
- “I hope that the way that I teach my students gives them the tools to be able to work internationally” (LU2, 11-Mar-2019).
- “I guess there were other issues that had a higher priority” (LU3, 11-Mar-2019) — (a stated reason for not participating in CI).
- “An opportunity to collaborate with somebody who was doing work like I was doing, but had vastly different resources” (LU4, 12-Mar-2019).
- Opportunity to travel abroad, to see other cultures.
- To see how other people live.
- To compare their infrastructure to our infrastructure and see the differences.

Overall, the three faculty members who said that they were motivated to participate in CI at LU suggested that work and cultural interests alike were motivators. The one participant who was not engaged in CI activities suggested that he had other priorities.

I asked the following interview question related to ensuring students obtained necessary capacities to address global roles and responsibilities:

(a)Do you think it is important to create globally prepared university students? (b)And do you feel that you personally do or should use part of your teaching role to prepare students to be global citizens and engineers?

LU faculty members answered part ‘a’ of the question in these ways:

- “Yes” (LU3, 11-Mar-2019).
- “Yeah, sure. I mean I sort of view our role just because of the type of university we are in at least at the undergraduate level, preparing students to accept jobs in engineering, probably in the United States” (LU2, 11-Mar-2019).
- “Yeah, like right now the world is so small, I can literally get anywhere in the world within 24 hours. I mean, there's no point in like, us doing something that somebody else is already doing without just working together. That's why it's nice to have colleagues that cooperate with internationally on stuff. It's just the way the world is going” (LU1, 11-Mar-2019).
- “Well, I think that students need to be aware of other cultures. They need to know how to operate within those other cultures, because they may be required to do it. We are more of a global economy, and the way the United States is going to keep its competitive advantage is to be able to work with all of these different organizations and cultures internationally, and be able to provide a service to them. You can't provide a service unless you know something about them” (LU4, 12-Mar-2019).

LU interviewees offered mixed perceptions in their responses to part “b” of this question. For example, LU4 said, “I personally firmly believe in that” (12-Mar-2019) and shared past global experience and interest in cross-cultural communication. Two participants said ‘yes’ to this part of the question, but also communicated that it was difficult to achieve given the technical nature of their courses. However, both acknowledged the technical aspects of their classes (including math) and the common interest around the world for engineers to design safe structures. One interviewee mentioned the importance of having international students in his classes share their different perspectives with others, while another respondent suggested that he, “could probably do a better job of providing examples from other countries” (LU2, 11-Mar-2019). One participant observed that that he thought sharing information about “international needs” was best handled in an ethics class that he did not teach. When I asked him to confirm that he did not use his class time to prepare students for the global environment, he suggested that “most of it is information, training, engineering, training” (LU3, 11-Mar-2019). It seems clear that LU leaders could do more to promote faculty member interest in CI. It also appears that a share of faculty members, at least, are beginning to embrace the global landscape.

Conclusions for LU

On one hand, LU leaders have been moderately successful at creating investment, infrastructure, and institutional networks that have broadened internationalization on their campus. On the other hand, LU’s overall outward facing presence, online and from faculty, has low visibility and I think this is the reason that LU’s international outlook is ranked low. While all of the LU faculty members expressed their belief in the importance of global concepts and a level of personal knowledge within their field, not all of them had considered the breadth of what comprehensive internationalization could entail , nor had they heavily engaged in efforts to move

CI forward at their university. The largest portion of interviewee engagement in CI, at the time of my interviews, involved participation in international conferences and recruitment of graduate students from other nations. Only one participant mentioned teaching courses abroad. Again, this faculty group had much to share about teaching opportunities and international students on campus, but almost no one mentioned globally focused research connected to CI.

As part of the analysis for this study, I grouped LU participants responses into the following categories in preliminary coding:

- Autonomy (i.e., feeling support to engage *if they wanted to do so*)
- Awareness Levels (i.e., most participants were aware of offices and communication, but few knew of faculty support activities)
- Interest in CI Connectedness to career (i.e., interest in global concepts were largely related to the global span of their professional work)
- Faculty Values (i.e., very interested in recruiting international students)
- Diversity (i.e., interest in different viewpoints and inputs, especially in the classroom)
- Student Care (i.e., all expressed some level of need to prepare students for global awareness).

I examined these categories more closely and recoded them under three main concepts. The first was the way *historical constructs* within higher education have created barriers to, or enhanced participation in, global engagement among faculty members. For example, even though these interviewees described their field as one that crosses geographic boundaries, the historical reality of a technical curriculum nonetheless dominated in these conversations. Also, in a follow-up question during one interview, I asked whether faculty members felt encouraged to internationalize their curriculum, and the answer was “No, there’s no incentive, for sure” (LU4, 12-Mar-2019). Two participants argued that technical engineering courses are not the place to embed global concepts, but others acknowledged that there are ways to introduce international concerns more effectively into technical courses, given the span of civil and environmental engineering work.

Another history related concept concerned the autonomy of faculty members. Several LU interviewees indicated that *if* they were interested, they could engage globally. One participant put it this way, when asked about support to engage in CI, “I guess maybe not actively, but like I say, I feel like if there was one of these topics that I was really interested in learning about, [such as] teaching in other countries, I think that my superiors and peers would be open to me pursuing that kind of thing” (LU2, 11-Mar-2019). I am not recommending a change in faculty autonomy to make such choices, but it can obviously act as a barrier to CI engagement at times. In LU’s strategic plan, CI has very low visibility, but *if* CI were a larger part of LU’s metrics to success, individual support for faculty would be key to securing such success.

The second concept focused on *what faculty members value* most. All LU interviewees spoke multiple times about the importance of different viewpoints and connecting with international faculty members to exchange ideas. LU participants also associated CI largely with student mobility and opportunities that they knew existed for their university’s students. Furthermore, all four of the LU interviewees highly valued recruitment of international students and their care while on campus.

I asked interviewees to rate the university, college of engineering, CEE department, and themselves in relation to CI at the close of our conversation (see Appendix L, question #13). The average rating of each category among LU participants revealed that their self-evaluations were uniformly the lowest of these ratings. The second lowest rated average for this group was the department, which interviewees judged just slightly higher than themselves. This rating suggests that LU international educators should offer, incentivize, and communicate workshops for faculty members to learn more about ways to connect their work to CI initiatives more broadly.

The third theme, which emerged from the data, concerned how interviewees *perceived the outcomes of internationalization*. As mentioned above interviewees said very little about how their research connected to CI. I surmised that while there was overall support for internationalization activities on campus, LU interviewees saw such efforts as largely occurring outside their professional purview. As one interviewee observed, “it's [CI] something that goes on, but it's not completely integral to everything that we do ... something that's going on in parallel to everything else” (LU2, 11-Mar-2019). Additionally, all participants expressed perceptions that suggested it may be difficult for leaders to integrate CI fully at the university. For example, LU2 remarked, “we teach a lot of design codes and stuff and I would say mostly we're teaching it from a U.S. perspective” (11-Mar-2019). When asked interview question #9 about implementation of the model (see Appendix L) used for the framework of this study, LU1 noted that: “a lot of people are already engaging and I can only speak from my own experience here in the college of engineering. I have no idea campus wide what other people are feeling... there's a big push for getting different perspectives on things (11-Mar-2019).” For LU faculty members who participated in this study, the overall perception seems to be that CI is not pervasive and that belief appears to be affecting their willingness to become involved.

Overall, LU participants evidenced attitudes that matched the international outlook ranking of their institution. LU leaders have exhibited interest in, and some targeted work toward, internationalization, but it generally has low visibility on campus and lacks breadth.

4.5 Cross-Case Analysis

Overview of Crossed Cases

I designed this research as a multiple case study because I wanted to investigate cases “within [their] real-world context” (Yin, 2014, p. 16). The three cases provided individual

insight for universities evidencing different international outlook ranks. This approach provides the basis for theoretical replication which, according to Yin, “predicts contrasting results, but for anticipatable reasons” (2014, p. 57). As mentioned in Chapter Three, I selected the universities I featured from land-grant institutions and all interviewees shared the same disciplinary background. The principal difference among the three universities was their *Times Higher Education (THE)* world university ranking (2017).

I successfully recruited participants from different faculty ranks and with different self-identified levels of CI advocacy. When analyzed across cases, the participation distribution for faculty status was:

- Full Professors = 7
- Associate Professors = 5
- Assistant Professors = 4

Meanwhile, the collective original self-identified level of advocacy of CI of each those with whom I spoke (identified before, or at the beginning of their interviews) was:

- Strong advocate of CI = 3
- Moderate advocate (one identified as somewhat supportive) of CI = 5
- Non-advocate of CI = 1
- Unwilling to self-identify due to an initial lack of familiarity with the term [CI] = 7

I asked each interviewee to provide a final personal ranking of their level of engagement in CI from 1-10, with 10 as the highest number at the close of our conversations. I scaled responses as follows: 0-3.9 as non-advocate, 4-7.4 as moderate advocate, and 7.5-10 as strong advocate.

Participants have decimals in their ranking due to an average range provided by some participants. The updated distribution of levels of advocacy at the end of the interviews were:

- Strong advocate of CI = 6
- Moderate advocate (one identified as somewhat supportive) of CI = 7
- Non-advocate of CI = 3

I coded all participant responses using the same strategies (see Appendix O/Codebook). I coded in sections by case. As categories emerged, I chose those that applied generally to all three cases. I also, as I have indicated above, identified major themes that arose across all three cases as well. To complement these forms of analysis, I also examined interviewee responses for each institution individually for each of this study's five research questions. I was especially interested in faculty participants' articulated meaning-making, motivations, and perceptions throughout the analysis. I highlighted important information from the interviewee responses for each case. This section triangulates the self-identified advocacy levels of participants, connections between interviewee responses and previous studies, similarities and differences among the cases, and the limitations of this inquiry.

Triangulation

As stated in section 3.8, I set out to compare informant and participant responses as one way to validate the self-identified levels of CI advocacy of faculty member participants. Informants were invited to rank lists of faculty members from this study but were not made aware of the actual interviewees. I asked each external informant to rank each person (as comfortable) as a 'strong,' 'moderate,' or 'non-advocate' of CI. Five informants provided me with rankings. As might be expected, few informants ranked all faculty members on the lists for each institution. HU had four informant rankings, MU four informant rankings, and LU had two informant rankings. Some informants had multiple matches to participant universities. Table 19 shows the comparison of informant ranking to the original self-identification and final personal ranking.

Table 19: Informant Ratings

<i>Interview Label</i>	<i>Informant rating(s)</i>	<i>Original Self-Identified Advocacy</i>	<i>Final Personal Global Engagement Rating</i>
HU1	strong, moderate	Unwilling to rank	1 (non-advocate)
HU2	moderate, strong	Unwilling to rank	8.5 (strong)
HU3	non-advocate	Moderate	4 (moderate)
HU4	strong	Strong	9 (strong)
HU5	moderate, strong (X2)	Unwilling to rank	9.5 (strong)
HU6	moderate, strong (X2)	Strong	8 (strong)
LU1	N/A	Unwilling to rank	9 (strong)
LU2	N/A	Unwilling to rank	5 (moderate)
LU3	N/A	Unwilling to rank	4 (moderate)
LU4	moderate	Moderate	7.5 (strong)
MU1	strong	Moderate	7 (moderate)
MU2	moderate	Unwilling to rank	4.5 (moderate)
MU3	strong (X4)	Strong	4 (moderate)
MU4	strong	Unwilling to rank	7 (moderate)
MU5	moderate (X2)	moderate to non-advocate	1.5 (non-advocate)
MU6	strong (X3)	Moderate	3.5 (non-advocate)

Table 19 shows that informants matched at least one of the participants' self-ranking for 7 participants. Other informants were close to the self-ranked levels. For example, MU1 was evaluated by an informant as a strong CI proponent, but the interviewee initially ranked himself as moderate and then a '7,' which was close to the strong ranking. The informant rankings were helpful when gauging the strength of self-identification by participants regarding their level of internationalization advocacy. These responses establish a new form of faculty input that previous CI -related studies did not capture.

Connection to Literature Review

I relied heavily on previous research involving faculty perceptions and motivations about CI as I designed this study. Findings closely connected to the literature included those related to motivations, gender, tenure status, and the influence of prestige and competitiveness in faculty perceptions of where to place their energy.

Several previous studies addressing faculty engagement in CI by Klyberg (2012), Navarro (2004), Savishinsky (2012), Viers (2003), Schwietz (2006), and Sanderlin (2012), found that the most significant motivations for faculty members to engage in CI were intrinsic and related to personal experience. For example, Klyberg “found that, “...faculty...participants were more intrinsically than extrinsically motivated to engage in it [internationalization]. Specifically, participant engagement in internationalization generally predated institutional adoption of an internationalization initiative and came from personal experience” (2012, p. iv). Similarly, most of those I interviewed for this study shared personal reasons or experiences related to their involvement in CI. However, I was not able to conclude that the primary motivations for CI engagement among those I interviewed were personal ones. In fact, only one participant mentioned a truly personal reason by indicating that his spouse had influenced him greatly to become involved with internationalization. Instead, six interviewees specifically connected their involvement in CI to their professional or disciplinary (civil and environmental) work or interests. Others expressed multiple other reasons for engaging globally. Some participants expressed an interest in gaining differing viewpoints regarding their field (4 responses), a desire to help others/students/international partners (5 responses), the connection CI had to their research (5 responses), the opportunity to travel and compare U.S. infrastructure with other places (5 responses), connecting with other cultures and people (4 responses), and one interviewee spoke of competition as an impetus of interest in internationalization. Only two interviewees said that they were not motivated to engage in CI.

Schwietz has argued that, “data show[ed] that important differences [of factors influencing faculty engagement in CI] exist by gender, discipline, teaching responsibilities, tenure status, rank, and teaching/research preference” (2006, p. iv). As I have highlighted, no

women, despite being invited to participate, agreed to be interviewed from any of the three targeted universities.

Another connection to previous research is the tenure status of those I interviewed. For this study, the largest number of strong advocates of CI came from the full professor participants. In past studies, in general, males and those with the highest level of professional attainment appeared to have more opportunity to engage in CI. In this study, however, two assistant professors ranked themselves as strong advocates and another as a moderate advocate of CI. This finding suggests that there is more than tenure status involved in faculty decisions to engage in CI activities.

Stromquist has argued that competitiveness and power may be the primary motivators among faculty members and HEIs that otherwise assert that student preparation is their motivating goal to engage globally (2007, p. 84). I found that faculty members did articulate motivations connected to competitiveness and goals for furthering their research or careers when asked about their rationales. Few faculty members across the cases mentioned students as their principal aspiration for engaging with CI. However, interviewees did highlight the importance of preparing students for the global environment in their responses to interview question # 10 (see Appendix L). Additionally, some faculty members perceived that their university leaders were interested in promoting their global activities and standing.

Themes Across Cases

As mentioned in the case study sections, three major themes emerged from the interviews: historical constructs, personal and professional values, and how interviewees perceived the outcomes of internationalization. The individual universities each exhibited unique connections to these topics. Not surprisingly, *historical constructs* in higher education

emerged as a primary theme. Higher education is known for its often-slow pace of change. I am not advocating for any specific shift in current policy constructs, which are indeed historically derived, but I do contend that when such constructs emerge as strong barriers to articulated aims within universities, it will be necessary to amend or shift them, if those goals are to be achieved. All such shifts should be collegially negotiated or faculty members will not accept them.

Overall, I identified four relevant historical constructs in this study. The first was CI's connection to promotion and tenure (P&T). International engagement was valued in different ways at different institutions in promotion and tenure decisions, but, to date at least, leaders and faculty members have not viewed CI as sufficiently important to make specific changes in such guidelines in its name. Interviewees from all three institutions perceived a disconnect between CI and their university's P&T guidelines. Surprisingly, HU interviewees, whose institution enjoyed the highest international outlook ranking, had the most to say about this disconnect. Indeed, one HU interview saw many international exchanges as actually detracting from promotion. HU faculty had also requested that global engagement activities be explicitly recognized in their university's P&T process, but no such change has yet occurred. Moreover, HU faculty interviewees suggested it was highly unlikely the change to which they referred would occur. Nevertheless, the University of Illinois (Urbana-Champaign) did make such a change in its guidelines in 2009. The Provost at that university said then that the changes had been undertaken "in order to promote, foster, support and reward scholarly activities of all the types that are needed for our university to be successful in its mission" (Forrest, 2009, para. 13). Since most P&T policies across American universities require that faculty members be internationally recognized for their work to obtain full professorship rank, including international engagement as a criterion for P&T appears reasonable to me.

The second historical construct that emerged from interviewees was their concern about control of their personal research agendas. This study's interviews did indeed suggest that faculty research can be a catalyst for engagement in CI, but I also found that it may serve as a barrier as well. For faculty members who expressed interest in engaging globally for research, international partnerships acted as catalysts when interviewees had access to locations, equipment, and other resources that their own university could not produce to move their research agendas forward. Interviewees also suggested that global research endeavors were a spur to engage in CI when a network of faculty members were involved and could offer insights and new ideas. However, those I interviewed also uniformly noted that such involvement was mediated by individual willingness to expend the time and effort necessary to address frequent communication and logistical challenges. For example, several faculty members observed that they had been involved in collaboration efforts that collapsed or "fizzled out," and this was so in some cases, for no specific reasons they could discern.

The significance of faculty autonomy was the third historical construct that appeared in all three groups of interviewee responses for this study. Faculty autonomy is a fundamental construct within higher education. Independence allows professors to determine the direction and character of their research. This construct underpinned multiple interviewee comments of the sort, "if I am interested, I can." Of course, the converse is also true and that fact is critical for efforts to secure internationalization. University leaders desiring CI will need to devise strategies that persuade a broad group of faculty members that such efforts can and should be integral to their roles.

The fourth historical construct, and one that is not germane to all disciplines, is the significance for CI of a technical based curriculum. The STEM (Science, Technology,

Engineering and Math) fields rest on a technical curriculum that seeks to impart specific training and skills for the fields served. Historically, many faculty members in engineering have not valued communication capacities and other so-called soft skills, for example, as highly as technical competencies. Many of those I interviewed for this analysis placed global awareness and competence in the soft skills category and argued that they were difficult to incorporate into courses already chock a block full of technical material. Some interviewees specifically said that global content should only be added to courses later in the curriculum or be taught in ethics classes. Nonetheless, some of those with whom I spoke argued they try to incorporate global collaboration into all aspects of their teaching as a natural part of their work.

The next theme that emerged from the interviews was *personal and professional values*. This broad concern was intimately tied to other overarching concerns. Those I interviewed uniformly indicated, for example, that they valued their capacity to make choices for themselves concerning their research and the particulars of their courses. At least a share of those with whom I spoke also suggested that they valued diverse thought, international students, ranking of units at their institutions, and preparing students for the global work environment.

Interviewees repeatedly emphasized the significance of diverse thinking. Some faculty members noted that they valued diverse forms of thinking because those capabilities can permit partners to attack global challenges within civil and environmental engineering. That is, those interviewees valued the ideas and different viewpoints that can arise when working with others outside the United States. Faculty also expressed the value of inviting visiting scholars to their campuses.

Interviewees also indicated they valued international students. Interviewees from all three institutions articulated this value while highlighting the importance of international students

(especially graduate students) to research, but also the value of their viewpoints in the classroom. Additionally, some of those I interviewed mentioned the boost to the university's income that international students can bring. In fact, one participant noted that his institution had set higher tuition rates for international students (if they are not from partner universities) (LU4, 12-MAR-2019). One other interestingly related finding was that most faculty members interviewed, irrespective of their specific institutional home, seemed more invested in recruiting international students than in encouraging domestic students to explore and undertake international experiences. This one-way Americentrism could be a topic for future study.

A third topic of personal and professional value involved participants' rating of units on campus regarding global engagement. Near the end of the interviews, participants were asked to rate their university, college, department, and themselves regarding their relative level of global engagement. These final ratings revealed a lack of value at the departmental and individual levels across universities. I think this is a significant finding. Figure 6 depicts those responses.

Figure 6: Final Unit Ratings' Average

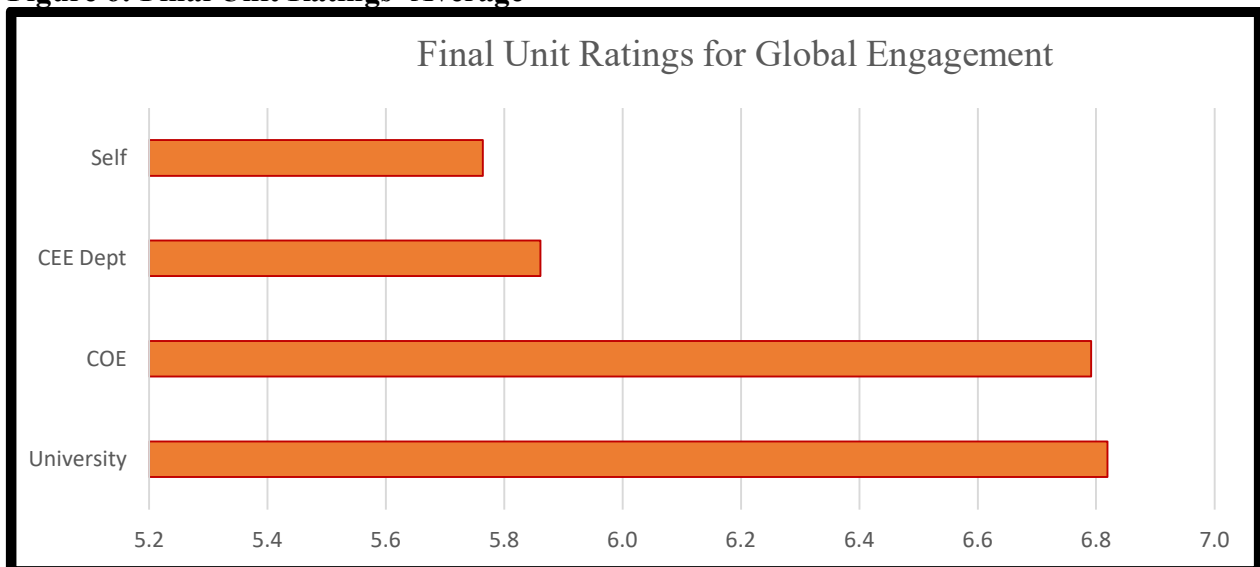


Figure 6 shows that the university and college ranked closely together concerning global engagement as viewed by interviewees, while the department and individual actual faculty

member proclivity to support such efforts ranked significantly lower. Individual faculty member ratings tracked those for their departments, a finding that makes sense given the structure of large, decentralized universities. In general, university faculty members are directly housed in departments. If the department is perceived as largely disengaged from the CI mission, faculty members within it are also likely not to value such efforts. After all, the first hurdle in the promotion and tenure process is departmental approval.

The last common topic for interviewees was the importance of preparing students to be global engineers and citizens. Faculty participants at all three institutions valued ensuring that students were well prepared for future work, which they collectively acknowledged was global in character. However, few faculty members mentioned this topic until prompted by the query concerning student preparedness. Furthermore, and disproportionately, prior to questioning, most interviewees addressed global student training as comprised of student programs organized at the college level (study abroad, etc.), university level, or global-focused institutes across campus. While faculty participants valued student global educational opportunities, some interviewees expressed need to do a better job themselves of preparing students in such terms. Other interviewees, however, saw the goal of student global-preparedness as the responsibility of someone else on campus.

The last theme that emerged from the interviews was how interviewees *perceived the outcomes of CI engagement*. This theme too, intersected with others in this study. For example, the CI elements that interviewees said they valued connected with their perceptions of internationalization initiatives more generally. For example, faculty perceptions of P&T, research, autonomy, and the importance of technical curricula drove the way they perceived CI. The specific themes linked to perceptions of CI potentials among interviewees included time and

expertise, zero-sum thinking, their personal backgrounds, and whether they believed global concepts should be integral across university curricula.

First, faculty member perceptions of time available as well as expertise appeared to shape their inclination to become involved in CI. For example, interviewees often suggested they had evaluated whether the outcomes of involvement were sufficient to warrant the effort expended in securing them. If faculty members do not perceive that university leaders are truly invested in CI and expect them to become engaged as well, they are unlikely to become involved themselves. This appeared to be the case for all of the institutions represented in this study. Although 14 participants observed that they perceive that their university administration was intentional (at varying levels) in its interest to promote CI, none perceived that top administrators were anxious for them to take part in related efforts. Furthermore, as faculty members progress in their careers and aim to become globally known as experts in their field, global recognition is shallow if not connected to global engagement and robust partnerships abroad. In essence, expert faculty members need knowledge *and relationships with* global researcher/professors in their discipline.

Second, zero-sum thinking is another outcome of faculty perception of administrative support. If faculty members perceive that CI leaders cannot allocate money for internationalization without taking funds from other initiatives on campus, they are much less likely to engage in such efforts. Some of my interviewees argued that the leaders of their institutions had asked them to engage globally but had failed to provide the funding necessary to support their doing so.

Third, the personal background of faculty members, especially international faculty, or faculty with significant international background prior to coming into the faculty ranks, is related to another perception; a misperception. The mistake is assuming that all international faculty

members approach CI positively or that those with significant experience internationally want to be part of the CI mission. The outcomes of making this assumption can be damaging. Multiple interviewees contended that international faculty members at their university naturally engaged in CI. Even some interviewees who were non-US citizens offered that stereotypic argument because of their global experience (including experience working in a country different from their citizenship). However, that perception, erroneous in principle, can also hamper engagement in CI because faculty without extensive background in international exchange and travel may be intimidated needlessly by what they perceive to be international faculty members' broad experience. This trepidation can relegate those with little global experience to the role of followers rather than leaders in CI. The outcome of this perception can also pressure international faculty members into CI leadership positions with which they may not be fully comfortable.

These conclusions reveal some of the ways perceptions limit or promote faculty engagement in CI. Interviewee comments often highlighted the ways that historical constructs, personal and professional values, and outcomes based on interviewees' perceptions benefited or obstructed comprehensive internationalization.

Cross-Case Highlights

Section 3.9 highlighted several limitations of this study:

- Faculty interviewees represented only one engineering discipline (although that focus was intentional in this study to address a lacuna in the scholarly literature).
- All participants were male.
- All of the universities involved were large land-grant, research focused institutions.

Nonetheless, I discovered that each university was at a different stage of engagement or institutionalization of CI. Even though I expected that this might be the case because of the

varied levels of international outlook according to the THE (2017) rankings, it was nevertheless enlightening to have it confirmed by documents analysis and faculty interviews. This discovery may be of use to international leaders who wish to employ Childress' model to engage faculty member in CI initiatives. Interested educators can review input from faculty members at the institution most closely aligned with their level of engagement and the model most desired and use this study and Childress' framework as a point of reference for encouraging more faculty engagement in internationalization.

Finally, I have every reason to believe that interviewees were open and honest in their answers to my questions given the level of confidentiality they could expect. However, their responses were surely subjective and there is a certain amount of inaccuracy that must be accepted in any study. Still, one can expect that, as professionals (and I mean to refer here both to the interviewees and the confidential informants) I am reasonably confident that the rankings each provided were honest and represented their best judgments.

CHAPTER 5 IMPLICATIONS AND CONCLUSIONS

5.1 Model and CI Practice Implications for Higher Education

Childress' (2010) model of the Five "I" s of Faculty Engagement in Internationalization served as the framework for this study. I designed this study in part to identify gaps in the model based on faculty meaning-making, motivations, and perceptions. The framework proved to be a strong one for gauging faculty engagement in internationalization efforts and was an appropriate guide for the research and interview questions for this study. Childress' model provided a structured way to explore faculty voices concerning CI at various campuses. Interviewees did highlight a number of barriers to their involvement in relation to elements of the Childress model. Importantly, those concerns were associated with university implementation efforts and not the reach or adequacy of the five "I" structure itself.

First, intentionality, as articulated by interviewees did not uniformly reveal "multiple types and levels of internationalization plans, which formalized internationalization as an institutional priority and provided focus, organization, and resources for faculty to engage in internationalization" (Childress, 2010, p. 140). Often, faculty participants were able to point to existing student programs and to some collaborations with international partners. They also indicated that some funding was available (usually for international conference travel), but they knew little about faculty engagement efforts and specific funding for research abroad initiatives. Some argued that funding would have to come from their own research projects to pursue CI related objectives. Some strategic plans for the universities and colleges of engineering I sampled for this study included strong language concerning global engagement and the world, but to say that any institutions in this study truly conveyed a message of CI as a major priority

would be an overstatement. Instead, a more accurate depiction would be to say that this sample of research universities conveyed interest in *being known* as global universities. HU was the strongest institution on intentionality and came the closest to realizing that aim as set forth in Childress' model.

Second, investment, as articulated by faculty participant's voices, was strong. This is particularly true of offices and positions designed to support faculty, international and domestic students, and travel logistics. However, my interviewees did not indicate that any of the three institutions profiled here were fully addressing the resource claim of Childress' model. Faculty perceived that most CI resources were being allocated to maintain relevant staff offices and to support their activities directly. For this reason, many participants had a difficult time differentiating between investment and infrastructure even when I provided them with examples of each from Childress' model. One faculty member suggested that investment and infrastructure should be combined in the framework, but if that were to occur, the insight just above would not be so clear.

Third, according to Childress, CI infrastructure should include "organizational and programmatic resources through which [faculty may] ... explore international perspectives within their teaching and research agendas," and may include "academic activities and organizational practices, such as faculty seminars, international degree programs, and a campus overseas" (Childress, 2010, p. 141). Faculty participants were vaguely aware of (or guessed about) some type of campuses or overseas centers' existence. Furthermore, interviewees were largely unaware of organizational and programmatic resources such as faculty training workshops (it remains unclear to me to what extent those were available at any of the campuses I

visited). Most of those with whom I spoke assumed/expected that they existed, rather than knowing with certainty that they did.

Fourth, institutional networks, as understood by faculty participants, did not evidence robust communication channels. One faculty participant noted that it would be difficult to have a database for “faculty to learn about ... their colleagues’ areas of expertise and regional interests” (Childress, 2010, p. 142) as Childress had recommended. The interviewees suggested that communication channels did exist, but most information concerning CI came through the same channels as all other university correspondence and was therefore easy to ignore.

Fifth, individual support for CI, as Childress defined to be necessary “for faculty to connect institution-wide goals for internationalization with their individual scholarly agendas,” (2010, p. 142) was also not evident in interviewee responses. Interviewees who engaged with global partnerships, due to the nature of their work, were more familiar with institutional CI-related infrastructure such as inter-university MOUs (memoranda of understanding) and other logistical support for teaching or research abroad or with colleagues from other nations, but a majority of the participants were hard pressed to be clear about just what was available to them in these terms. Interviewees most frequently addressed international student recruitment for their research groups and departments as an abiding CI-related goal. Based on the interviews conducted for this inquiry, the individual support piece of Childress’ model seems to be a strong area in which university leaders might wish to invest if they wish to encourage more faculty to embrace the CI mission.

I do think that Childress’ (2010) model is a good framework for universities to use to encourage more faculty engagement in comprehensive internationalization. As I noted above, the real challenge was fulsome university implementation of the CI mission including an apparent

lack of comprehensive understanding and commitment to CI. Universities connected to this study had only partially embraced comprehensive internationalization as Hudzik has defined it. While some institutions made attempts to make a “commitment, confirmed through action, to infuse international and comparative perspectives throughout the teaching, research, and service missions of higher education” (Hudzik, 2011, p. 6), they did not ensure that CI shaped the “institutional ethos and values and touch[ed] the entire higher education enterprise” (Hudzik, 2011, P. 6). Faculty participants in this study suggested that many of the pieces of Childress’ (2010) model were formally in place on their campuses, but they also argued that CI was not “an institutional imperative” (Hudzik, 2011, p. 6), but instead a desirable possibility at their universities (something that Hudzik stressed that it should *not* be).

As one interviewee from HU said:

I think when I, when I got your note about this project it seemed, it seemed interesting. And my first impression was, 'this is, this is really a great idea' but it was a great idea, you know, 50 years ago and it just seemed like the time has passed when institutions like HU-univ are going to make big investments in something like this. I just think the time has passed and you know the previous 50 years, you see, you know everything was growing, there was growth everywhere and that was kind of the vehicle that you could get resources that every year, every department, every sub area within a department, everything was growing. And so there was more resources for everything and so you, I think administrators, had the discretion to decide where is this growth going to take place and if at that time somebody decided that internationalization was a good initiative, there were resources available to do it and it would have been a good and a great idea. But it really didn't happen. I just think now we're in, this whole period of growth is really over and we're kind of moving into something which is more of a steady state (HU3, 2-Feb-2019).

So, by combining this participant’s voice with the other 15 voices from this study, I conclude that comprehensive internationalization still has a chance to succeed in higher education, but it will take a lot of sustained effort and ongoing resource allocation at universities to overcome the obstacles that today dissuade a critical mass of faculty members from strong

engagement. Based on the findings of this inquiry, I suggest that university leaders also consider the following suggestions when implementing the Childress model:

- Intentional and regular conversations with faculty members, as part of their college and departmental meetings. Provosts and Vice Presidents of Research should engage directly with faculty to create intentionality based on continuous faculty input.
- Investment and infrastructure should be clearly supported as three separate elements: faculty research support, faculty teaching support, and logistical support of programs and travel.
- Institutional networks should be decentralized with colleges and departments having responsibility for their membership and content. If regular channels of communication remain the main type of connection, the CI portion of that content needs regular and specific heading for recognition.
- Individual support begins by empowering and educating departmental leaders who understand the nature and culture of faculty work within individual disciplines. Resources to support internationally focused teaching and research should be allocated to departmental leaders.
- Individual support must encourage faculty members to pursue global collaborations that enhance and propel their research passions and ensure they have resources to realize them. I believe that faculty teaching will be enhanced as a by-product of faculty interest and passion in global research.

5.2 Final Thoughts

This study sought to understand a sample of faculty member's meaning-making, motivations, and perceptions regarding comprehensive international efforts on their campuses. I also sought to examine the robustness of a well-known model aimed at guiding university leaders as they work to institutionalize CI on their campuses. Overall, I sought to sample the perceptions of a group of faculty members (engineers in his case) concerning CI, not otherwise well represented in the extant literature.

Faculty participants in this study were aware, in general, of the offices that existed on their campuses to support international students and visitors. They were also generally aware of programs and offices charged with supporting student study abroad programs. However, the interviewees for this analysis were largely ignorant of many other elements of CI. As expected,

the high-ranked (HU) university had the most informed faculty members overall, due to the strong focus by that university on internationalization (at least compared to the other schools in my sample). It was also clear that at least some interviewees from all of the universities represented in this research had real enthusiasm for global engagement. Others, however, showed little interest, at least when I interviewed them.

Almost all faculty participants believed in the need to prepare college students for a global working environment, but only some faculty expressed interest in including content in their own courses to help realize that goal. Interviewees ranked their understanding and commitment to CI lower than the rankings they assigned their departments, colleges, and universities. Nonetheless, faculty participation ultimately is paramount to successful CI implementation. Put differently, comprehensive internationalization simply cannot be realized anywhere if the strongest advocates do not include the active professoriate. Administrators cannot internationalize the research mission and cannot realize the CI mission on their own. Universities need to find ways to implement and integrate CI more effectively. One key step in doing so is finding ways to invite more faculty members to engage. Faculty members must see CI as more than a “feather in the cap” (HU1, 2-Feb-2019) and they must be given incentives and resources to reimagine the possibilities it represents.

REFERENCES

- Altbach, P. G. (2005). *Globalization and the university: Myths and realities in an unequal world* (Rep.). Retrieved http://www.nea.org/assets/img/PubAlmanac/ALM_05_06.pdf
- Altbach, P. G., & Knight, J. (2007). The internationalization of higher education: Motivations and realities. *Journal of Studies in International Education*, 11(3-4), 290-305.
doi:10.1177/1028315307303542
- American Council on Education. (n.d.). CIGE model for comprehensive internationalization. Retrieved from <http://www.acenet.edu/news-room/Pages/CIGE-Model-for-Comprehensive-Internationalization.aspx>
- American Council on Education. (2011). *Strength through global leadership and engagement: U.S. higher education in the 21st century*. Report of the Blue Ribbon Panel on Global Engagement.
- American Council on Education. (2012). *Mapping internationalization on U.S. campuses* (2012 ed., Publication).
- American Council on Education, Center for Internationalization and Global Engagement. (2013). (publication). *Internationalization in Action: April 2013, Engaging Faculty in Internationalization, Part One*. Retrieved from <https://www.acenet.edu/Documents/Intlz-In-Action-Engaging-Faculty-in-Internationalization-Part-1.pdf>
- Ayoubi, R. M. (2019, April 6). *What makes a university a 'global university'?* University World News. <https://www.universityworldnews.com/post.php?story=20190403111630655>.
- Childress, L. K. (2008). *Faculty engagement in the operationalization of internationalization plans* (Doctoral dissertation). George Washington University.

- Childress, L. K. (2010). *The twenty-first century university: Developing faculty engagement in internationalization*. New York: Peter Lang.
- Cooper, J., & Mitsunaga, R. (2010). Faculty perspectives on international education: The nested realities of faculty collaborations. *New Directions for Higher Education*, 2010(150), 69-81. doi:10.1002/he.391
- Cranwell, L.B. (2017). Personal Notes in April
- Cranwell, L.B. (2019). Research Study Notes
- Creswell, J.W. (2013). *Qualitative inquiry & research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: SAGE Publications, Inc.
- Criswell, J. R., & Zhu, H. (2015). Faculty Internationalization Priorities. *FIRE: Forum for International Research in Education*, 2(2). <https://doi.org/10.18275/fire201502021037>
- Daly, H.E. (1991). Globalization versus internationalization (Global Policy Forum, Ed.). Retrieved from <https://www.globalpolicy.org/component/content/article/162/27995.html>
- Dewey, P., & Duff, S. (2009). Reason before passion: Faculty views on internationalization in higher education. *Higher Education*, 58(4), 491–504. <https://doi.org/10.1007/s10734-009-9207-z>
- Dimaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147–160.
- Engberg, D., & Green, M. F. (2002). *Promising practices: Spotlighting excellence in comprehensive internationalization*. Washington, D.C.: American Council on Education.
- Forrest, S. (2009, March 19). *Provost announces changes to promotion, tenure criteria*. University of Illinois. <https://news.illinois.edu/view/6367/210536>.

- Fouad, N., Fitzpatrick, M., Liu, J. (2011). Persistence of women in engineering careers: A qualitative study of current and former female engineers. *Journal of Women and Minorities in Science and Engineering. Abstract.* 17. 69-96.
10.1615/JWomenMinorScienEng.v17.i1.60.
- Hoffman, S. G. (2012). Academic capitalism. *Contexts*, 11(4), 12–13.
<https://doi.org/10.1177/1536504212466325>
- HU*. (2006). (rep.). *HU* President update on university strategic plan*. Retrieved from available with confidentiality agreement*
- HU*. (2009). (rep.). *HU* Engineering strategic plan*. Retrieved from available with confidentiality agreement*
- Hudzik, J. K. (2011). *Comprehensive internationalization: From concept to action* (Publication). Retrieved
https://www.nafsa.org/uploadedFiles/NAFSA_Home/Resource_Library_Assets/Publications_Library/2011_Comprehen_Internationalization.pdf
- Kezar, A. J. (2014). *How colleges change: Understanding, leading, and enacting change*. New York: Routledge.
- Klyberg, S. G. (2012). *The faculty experience of internationalization: Motivations for, practices of, and means for engagement* (Doctoral dissertation). Pennsylvania State University.
- Knight, J. (1994). Internationalization: Elements and checkpoints. CBIE Research No. 7, Canadian Bureau for International Education (CBIE) / Bureau canadien de l'éducation internationale (BCEI), 1994. Retrieved from <http://eric.ed.gov/?id=ED549823>
- Knight, J. (2008). *Higher education in turmoil: The changing world of internationalisation*. Rotterdam: Sense Publishers.

- Knight, J. (2012). Five Truths about Internationalization. *International Higher Education*, (69), 1–4. <https://doi.org/10.6017/ihe.2012.69.8644>
- LU*. (n.d.). (rep.). *MU* Business program*. Retrieved from available with confidentiality agreement*
- LU*. (2017). (rep.). *MU* University strategic plan*. Retrieved from available with confidentiality agreement*
- Massy, W. F. (2016). *Reengineering the university: How to be mission centered, market smart, and margin conscious*. John Hopkins University Press.
- Merkx, G. W., & Nolan, R. W. (2015). *Internationalizing the academy: Lessons of leadership in higher education*. Cambridge: Harvard Education Press.
- Miller, D. (2016, April 22). *Land-Grant University FAQ*. Association of Public & Land-grant Universities. <https://www.aplu.org/about-us/history-of-aplu/what-is-a-land-grant-university/>.
- MU*. (2013). (rep.). *MU* College of Engineering strategic plan*. Retrieved from available with confidentiality agreement*
- MU*. (2015). (rep.). *MU* University strategic plan*. Retrieved from available with confidentiality agreement*
- MUa*. (2020). (rep.). *MU* College of Engineering strategic planning*. Retrieved from available with confidentiality agreement*
- MUb*. (2020). (rep.). *MU* University strategic plan*. Retrieved from available with confidentiality agreement*

- National Science Board. (2018). (rep.). *Higher Education in Science and Engineering, Chapter 2*. Retrieved from <https://nsf.gov/statistics/2018/nsb20181/assets/561/higher-education-in-science-and-engineering.pdf>
- Navarro, M. (2004). *Analysis of factors affecting participation of faculty and choice of strategies for the internationalization of the undergraduate agricultural curriculum: The case in two land grant universities* (Order No. 3132113). Available from ProQuest Dissertations & Theses Global. (305075267). Retrieved from <http://login.ezproxy.lib.vt.edu/login?url=http://search.proquest.com.ezproxy.lib.vt.edu/docview/305075267?accountid=14826>
- Niehaus, E., & Williams, L. (2015). Faculty Transformation in Curriculum Transformation: The Role of Faculty Development in Campus Internationalization. *Innovative Higher Education, 41*(1), 59–74. <https://doi.org/10.1007/s10755-015-9334-7>
- Olson, C. L., Green, M. F., & Hill, B. A. (2008). *Building a strategic framework for comprehensive internationalization*. Washington, D.C.: American Council on Education
- Pelletier, S.G. (2012). Special focus on global engagement: ACE Blue Ribbon Panel report envisions global future of higher education. Retrieved from <http://www.acenet.edu/the-presidency/columns-and-features/Pages/Global-Engagement-ACE-Blue-Ribbon-Panel-Report-Envisions-Global-Future-of-Higher-Education.aspx>
- Ramaswamy, S., & Ramaswamy, P. (2016). Global Perspective on Experiential Learning. *Global Education Review, 3*(4),
1+. https://link.gale.com/apps/doc/A548231305/CWI?u=viva_vpi&sid=CWI&xid=fddfc342

- Rhoades, G., & Slaughter, S. (1997). Academic capitalism, managed professionals, and supply-side higher education. *Social Text*, (51), 9-38. doi:10.2307/466645
- Rubins, I. (2007). Risks and rewards of academic capitalism and the effects of presidential leadership in the entrepreneurial university. *Perspectives in Public Affairs*. Retrieved from <http://www.asu.edu/mpa/Entre%20University.pdf>
- Saldaña, J. (2016). *The coding manual for qualitative researchers*. Los Angeles, CA: SAGE.
- Sanderlin, N. P. (2012). *Motivations and enabling factors for faculty engagement in internationalization: Learning from champions and advocates* (Doctoral dissertation). Blacksburg, VA: Virginia Tech.
- Savishinsky, M. (2012). *Overcoming barriers to faculty engagement in study abroad* (Doctoral dissertation). University of Washington.
- Schwietz, M. S. (2006). *Internationalization of the academic profession: An exploratory of faculty attitudes, beliefs and involvement at public universities in Pennsylvania* (Doctoral dissertation). University of Pittsburgh.
- Stake, R. E. (1995). *The art of case study research*. Sage Publications, London.
- Stake, R. E. (2010). *Qualitative research: Studying how things work*. New York: The Guilford Press.
- Stohl, M. (2007). We have met the enemy and he is us: The role of the faculty in the internationalization of higher education in the coming decade. *Journal of Studies in International Education*, 11(3-4), 359-372. doi:10.1177/1028315307303923
- Stromquist, N. P. (2007). Internationalization as a response to globalization: Radical shifts in university environments. *Higher Education*, 53(1), 81-105. doi:10.1007/s10734-005-1975-5

- Times Higher Education. (2017). University World Rankings 2016-2017. Retrieved from <https://www.timeshighereducation.com/sites/default/files/the-world-university-rankings-2016-2017-methodology-large.jpg>
- United States Department of Labor: Bureau of Labor Statistics. (n.d.). Job Outlook: Civil Engineers. Retrieved from <https://www.bls.gov/ooh/architecture-and-engineering/civil-engineers.htm#tab-6>
- Vaz, R., & Demetry, C. (2010). Recruitment, Mentoring, and Development of STEM Faculty to Lead International Programs. Paper presented at the 40th ASEE/IEEE Frontiers in Education Conference.
- Viers, C. J. (2003). *Faculty engaged in international scholarship: A study of when, how, and why* (Order No. 3116059). Available from ProQuest Dissertations & Theses Global. (305328718). Retrieved from <http://login.ezproxy.lib.vt.edu/login?url=http://search.proquest.com.ezproxy.lib.vt.edu/docview/305328718?accountid=14826>
- Yin, R. K. (2014). *Case study research: Design and methods*. London: Sage Publication.
- Yoder, B. L. (2017). *Engineering by the numbers* (Rep.). Retrieved <https://www.asee.org/papers-and-publications/publications/college-profiles/15EngineeringbytheNumbersPart1.pdf>

*Individuals wanting these exact references must first sign a confidentiality agreement form. Please contact, Lindy Cranwell at lindycra@vt.edu

APPENDICES

Appendix A

Email to Faculty Members for Interview

Dear Dr. XXXX

My name is Lindy B. Cranwell. I am a Ph.D. student at Virginia Tech in Planning, Governance, & Globalization. Dr. Max Stephenson, a Professor in our School of Public and international Affairs, is serving as the chair of my research committee.

I write to request an interview with you to support my dissertation research. I expect these interviews to require between 30-60 minutes of your time.

The title of my research project is **University Comprehensive Internationalization (CI): Faculty Perspectives on Meaning-Making, Attitudes and Motivations for Engaging Globally.**

I am looking for faculty members from each of the following categories regarding comprehensive internationalization (CI) on your campus. **If you agree to an interview, I ask that you self-identify using the categories below in your email response:**

- Strong advocate of CI
- Moderate advocate of CI
- Non-advocate of CI

If you agree to an interview, I will make my best effort to schedule an in-person interview with you at your campus location. If we are unable to arrange a time to meet in person based on our respective schedules and travel restrictions, I will request an online meeting platform (Zoom or Skype) for the interview. I plan to audio record all interviews. *Given the nature of the research, I ask that you not investigate comprehensive internationalization in higher education between this time and the time of a scheduled interview, so your interview will reflect your thoughts at the time of this email.*

I have invited your department head and another knowledgeable individual, who is not part of your department, to categorize faculty members of your department by their perceived level of advocacy regarding CI, according to the classification types listed above. All participants in this study have signed confidentiality agreements. Neither your department head nor the knowledgeable observer will have access to any data for this study. Classifications by your department head and the key informant will not be shared with anyone other than myself, the principal investigator, and the co-principal investigator.

Attached is a copy of the consent form that I will ask you to sign before our interview begins.

I look forward to hearing from you.

Best regards,

Lindy B. Cranwell

- Lindy Cranwell, lindycra@vt.edu, 540-998-3336, Student investigator
- Dr. Max Stephenson, mstephen@vt.edu, Principal investigator, 540-231-6775
- Dr. Denise Simmons, densimm@vt.edu, Co-Principal investigator
- VT IRB #18-590

Appendix B

Informed Consent Form

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Informed Consent for Participants in Research Projects Involving Human Subjects

Title of Project: University Comprehensive Internationalization (CI): Faculty Perspectives on Meaning-Making, Attitudes and Motivations for Engaging Globally

Investigator(s):

- Lindy B. Cranwell, Student researcher, lindycra@vt.edu, 540-998-3336
- Dr. Max. O. Stephenson, Principal investigator, mstephen@vt.edu, 540-231-6775
- Dr. Denise Simmons, Co-Principal investigator, densimm@vt.edu

I. Purpose of this Research Project

The purpose of this study is to investigate university-based engineering faculty members' perceptions, meaning-making, attitudes, and motivations regarding comprehensive internationalization (CI) on their campuses and in American higher education.

This study is Lindy Cranwell's dissertation research project for her Ph.D. degree in Planning, Governance, & Globalization at Virginia Tech. Ms. Cranwell's dissertation will be made available globally through the Virginia Tech library.

Cranwell will conduct a maximum of twenty-two interview, but she expects to complete about six interviews for each case/institution. Every effort will be made to include participants representing the various categories of advocacy regarding comprehensive internationalization in higher education (see below). All respondents will be faculty members from the same academic discipline (civil and environmental engineering-CEE) from American higher education institutions. All selected institutions for this study are land-grant universities. All selected cases are large, comprehensive, research producing institutions in their states, but each of the institutions is located in a different region of the U.S.

Should you agree to an interview, you will be asked to self-identify yourself vis-a-vis one of the following categories prior to scheduling your interview:

- Strong advocate of Comprehensive Internationalization
- Moderate advocate of Comprehensive Internationalization
- Non-advocate of Comprehensive Internationalization

Your department head and a knowledgeable observer, who is not part of your department, have been invited to categorize faculty members of your department according to their perceived levels of advocacy regarding CI, according to the categories listed above. All informants have signed confidentiality agreements for this research study. Neither your department head nor the observer will have access to any data for this study. Classifications obtained from your department head and the informant will not be shared with anyone other than this study's investigators.

II. Procedures

Should you agree to be interviewed, the interviewer (Lindy Cranwell) will ask you a series of questions and may ask you follow-up questions. Interviews are intended to take 30-60 minutes and will be audio

recorded (for all in-person and online interviews). You may decline to answer any or all questions and may request the interview to end at any time.

Once you agree to an interview, every effort will be made to schedule an in-person interview with you on or near your university campus. However, if it is impossible to schedule an in-person interview in a timely manner, an online interview (Zoom or Skype) may be scheduled instead (if you are willing).

You will have the opportunity to review the transcript of your interview and review the case study section of Ms. Cranwell's dissertation for your institution. The transcript and the case study will be sent to you by email, when they are available, and you will have a two-week review period for each.

III. Risks

The risk of participating in this study is minimal, certainly no greater than that you bear in your everyday activities.

IV. Benefits

We cannot promise or guarantee any benefits will arise from your participation.

Interview participants may contact Lindy Cranwell regarding the outcome of her research at any time.

The possible benefit of study participation is to bring more faculty member voices to the conversation of comprehensive internationalization on American university campuses.

V. Extent of Anonymity and Confidentiality

This interview is designed to be voluntary.

All data will be treated with respect. All interviews will be confidential. The researcher will make every reasonable effort to guarantee the confidentiality of interviewee responses.

Interviews will be coded for this study by institutional world ranking and interview order, as follows: HU=High world ranking university, MU=Medium world ranking university, LU= low world ranking university. Additionally, interviews by university will be sequentially numbered in order of chronological interview (ex. HU1= High world ranking university, participant #1).

Consent forms, emails, notes, audio recordings and other documents will be password protected and stored in separate file(s) on Lindy Cranwell's personal computer and on the Virginia Tech Google drive, which is also password protected through Cranwell's personal student account.

Only the student investigator and committee chair and co-chair, respectively, for this Ph.D. research will have access to interview recordings, and transcribed and coded data.

Virginia Tech Institutional Review Board Project No. 18-590 Approved October 12, 2018 to October 11, 2019
Page 2 of 3

Paid transcribers will sign a statement of confidentiality regarding the audio interviews they transcribe.

Knowledgeable informants will also sign confidentiality agreements and will not have access to the list of selected interviewees or any data associated with this study. Informants

The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

VI. Compensation

There is no compensation for participation in this study.

VII. Freedom to Withdraw

It is important for you to know that you are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose or respond to what is being asked of you without penalty.

Please note that there may be circumstances under which the investigator may determine that a subject should not continue as a subject.

VIII. Questions or Concerns

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document.

Should you have any questions or concerns about the study's conduct or your rights as a research subject or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

IX. Subject's Consent

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

_____ Date _____
Subject signature

Subject printed name

Note: You should receive a copy of this form.

Appendix C

Email to Department Head/Chair for Interview

Dear Dr. XXXX

My name is Lindy B. Cranwell. I am a Ph.D. student at Virginia Tech in Planning, Governance, & Globalization. Dr. Max Stephenson, a Professor in our School of Public and International Affairs, is serving as the chair of my research committee.

The title of my research project is **University Comprehensive Internationalization (CI): Faculty Perspectives on Meaning-Making, Attitudes and Motivations for Engaging Globally**

I am writing because I have selected your Civil Engineering (and/or Environmental Engineering) department for faculty member interviews as a part of my dissertation research. I have simultaneously sent emails to faculty members in your department requesting their participation. Please see the attached email that was sent to your department's faculty members.

I will make my best effort to schedule in-person interviews with faculty members in your department. If a meeting cannot be scheduled in-person an alternative may be an online meeting platform (Zoom or Skype) if the individual participant approves. I expect these interviews to take between 30-60 minutes and I plan to audio record each. **I welcome an interview with you.** *Given the nature of the research, I ask that you not investigate comprehensive internationalization in higher education between this time and the time of a scheduled interview, so your interview will reflect your thoughts at the time of this initial email.*

I am looking for faculty members from each of the following categories regarding comprehensive internationalization (CI) on your campus. **If you agree to an interview, I ask that you self-identify using the categories below in your email response:**

- Strong advocate of CI
- Moderate advocate of CI
- Non-advocate of CI

Additionally, as Department Head, I would appreciate your perspective on the levels of advocacy for each of your department's faculty members using the same categories listed above. Your categorization will not be shared with anyone other than myself, the principal investigator, and the co-principal investigator. Attached is a list of faculty members from your department to whom I have sent an email inviting participation in this study. Please complete the categorizations in the attached file and send to me at your convenience.

I have also invited another knowledgeable individual at your university, who is not part of your department, to categorize faculty members of your department according to the types listed above. All participants in this study have signed confidentiality agreements.

I look forward to hearing from you.

Best regards,

Lindy B. Cranwell

Contact information:

- Lindy Cranwell, lindycra@vt.edu, 540-998-3336, Student investigator
- Dr. Max Stephenson, mstephen@vt.edu, Principal investigator, 540-231-6775
- Dr. Denise Simmons, densimm@vt.edu, Co-Principal investigator

VT IRB # 18-590

Appendix D

Telephone Recruitment Script for Department Head for Interview & Help

Hello Dr. XXXX

My name is Lindy B. Cranwell. I am a Ph.D. student at Virginia Tech in Planning, Governance, & Globalization. Dr. Max Stephenson is the chairman of my research committee and is the principal investigator for this research study. Dr. Denise Simmons is the co-principal investigator.

I am calling to request an interview with you to support my dissertation research. Interviews are expected to take between 30-60 minutes.

The title of my research project is **University Comprehensive Internationalization: Faculty Perspectives on Meaning-Making, Attitudes and Motivations for Engaging Globally**

I am looking for faculty members from each of the following categories regarding comprehensive internationalization (CI) on your campus. **If you agree to an interview, I ask that you self-identify using the one of the following categories:**

- Strong advocate of Comprehensive Internationalization
- Moderate advocate of Comprehensive Internationalization
- Non-advocates of Comprehensive Internationalization

If you agree to an interview, we can look at scheduling an in-person interview at your campus location. If a reasonable time cannot be arranged based on schedule and travel restrictions, we can schedule an online meeting platform (Zoom or Skype) for the interview. All interviews will be audio recorded. *Given the nature of the research, I ask that you do not investigate comprehensive internationalization in higher education between this time and the time of a scheduled interview, so your interview will reflect your thoughts at the original time of this call.*

Additionally, as Department Head, I would appreciate your perspective on the levels of advocacy for each of your department's faculty members using the same categories listed above. Your categorization will not be shared with anyone other than myself, the principal investigator, and the co-principal investigator. I would appreciate your willingness to complete the confidential CI categorization of your faculty members for my research.

I attached a copy of the consent form that you will sign before the interview begins in the emails sent to you on _____ and _____ dates. I also sent you a list of all faculty members invited to participate. I can send you another copy if you would like.

Is it possible that you will be willing to schedule an interview with me for this research study?
My VT IRB # is 18-590

If you would like to think about this request, please respond to my earlier emails or call me at 540-998-3336.

Thank you,
Lindy Cranwell

Appendix E

Telephone Recruitment Script for Faculty Members for Interview

Hello Dr. XXXX

My name is Lindy B. Cranwell. I am a Ph.D. student at Virginia Tech in Planning, Governance, & Globalization. Dr. Max Stephenson, a Professor in our School of Public and international Affairs, is serving as the chair of my research committee and is the principal investigator for this study. Dr. Denise Simmons is serving as the co-principal investigator for this effort.

I am calling to request an interview with you to support my dissertation research. I expect interviews will last between 30-60 minutes.

The title of my research project is **University Comprehensive Internationalization: Faculty Perspectives on Meaning-Making, Attitudes and Motivations for Engaging Globally**

I am looking for faculty members from each of the following classifications regarding comprehensive internationalization (CI) on your campus. **If you agree to an interview, I ask that you self-identify using the one of the following categories:**

- Strong advocate of Comprehensive Internationalization
- Moderate advocate of Comprehensive Internationalization
- Non-advocate of Comprehensive Internationalization

If you agree to an interview, we mutually work to arrange an in-person interview at your campus location. If we are not able to arrange a time to meet in person as a result of our respective schedules and travel restrictions, we can schedule an online meeting platform (Zoom or Skype) for our interview. I plan to audio record all interviews. *Given the nature of the research, I ask that you not investigate comprehensive internationalization in higher education between this time and the time of a scheduled interview, so your interview will reflect your thoughts at the original time of this call.*

I attached a copy of the consent form that I will ask you to sign before our interview begins. I shared a copy of the consent form in emails I sent to you on _____ and _____. I will be happy to send you another copy if you would like.

Is it possible that you will be willing to schedule an interview with me for this research study?
My VT IRB # is 18-590

If you would like to talk with me concerning this request, please respond to one of my earlier emails or call me at 540-998-3336.

Thank you for your assistance and consideration,
Lindy Cranwell

Appendix F
Key Informant Confidentiality Agreement

Lindy Cranwell’s dissertation research project for her
Ph.D. degree in Planning, Governance, & Globalization @ Virginia Tech
2018-2020

Title of Project: **University Comprehensive Internationalization (CI): Faculty Perspectives on Meaning-Making, Attitudes and Motivations for Engaging Globally**

Student Researcher: **Lindy B. Cranwell (Dr. Max Stephenson - Principal investigator, Dr. Denise Simmons – Co-Principal investigator)**

I, _____, agree to act as a key informant for Lindy Cranwell’s Ph.D. research concerning (*university name added when match is identified*) university. Additionally, I agree that I will respect the confidentiality of faculty and staff participation from the Civil (and Environmental) Engineering department in this study. If I accidentally become aware of a specific individual’s participation, I will keep that fact confidential. I will not reveal or discuss my part in this research nor reveal any information regarding what I learn through this interaction. I understand that my primary role, as an informant, is to classify faculty members from the above listed institution, regarding their advocacy level in comprehensive internationalization in universities. The investigators of this study will provide a list of faculty members for my consideration.

Printed Name of Key Informant

Signature

Date

Appendix G

List of Land Grant Universities for Informants to Indicate Familiarity

Below is a list of Land Grant Universities in the USA for the purpose of identifying informants for dissertation research:

Title of Project: University Comprehensive Internationalization (CI): Faculty Perspectives on Meaning-Making, Attitudes and Motivations for Engaging Globally

Investigator(s):

§ Lindy B. Cranwell, Student researcher, lindycra@vt.edu, 540-998-3336

§ Dr. Max. O. Stephenson, Principal investigator, mstephen@vt.edu, 540-231-6775

§ Dr. Denise Simmons, Co-Principal investigator, denise.r.simmons@essie.ufl.edu (also densimm@vt.edu)

Informants will be asked to (subjectively) rank the faculty members (list provided) for an individual institution as to the level of advocacy in Comprehensive Internationalization for each member. Informants will need to sign a confidentiality agreement before they are able to rank an institution.

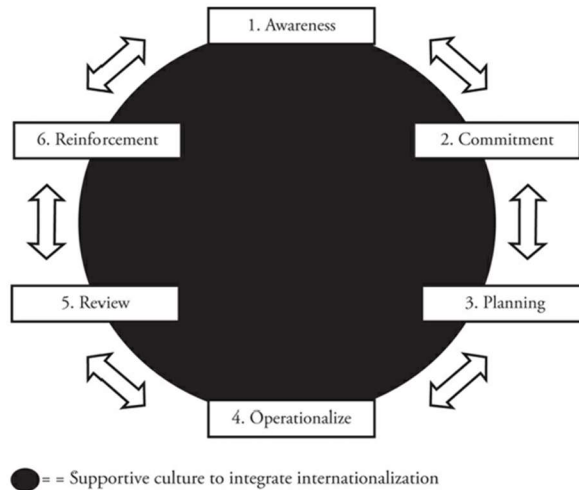
Please complete and return to Lindy Cranwell, lindycra@vt.edu

YOUR NAME:

Name of University	Familiar with the CEE department?	Willing to serve as an informant this institution?
Alabama A&M University		
Clemson University		
Colorado State University		
Cornell University		
Iowa State University		
Kansas State University		
Louisiana State University		
Michigan State University		
Mississippi State University		
Montana State University		
New Mexico State University		
North Carolina State University		
North Dakota State University		
Oklahoma State University		
Oregon State University		
Pennsylvania State University		
Purdue University		
Rutgers University		
South Dakota State University		
Texas A&M University		
University of Alaska - Fairbanks		
University of Arizona		
University of Arkansas		
University of California - Berkeley		
University of Connecticut		
University of Delaware		
University of Florida		

University of Georgia		
University of Hawaii		
University of Idaho		
University of Illinois - Urbana- Champaign		
University of Kentucky		
University of Maine		
University of Maryland- College Park		
University of Massachusetts- Amherst		
University of Minnesota		
University of Missouri		
University of Nebraska - Lincoln		
University of Nevada- Reno		
University of Rhode Island		
University of Tennessee		
University of Vermont		
University of Wisconsin - Madison		
University of Wyoming		
Utah State University		
Virginia Tech		
Washington State University		
West Virginia University		

Appendix H Knight Model



[Figure 1.1](#). Internationalization cycle. From “Internationalization: Elements and Checkpoints,” by J. Knight, 1994, Canadian Bureau for International Education Research, 7, p. 12. Copyright 1994 by Jane Knight and Canadian Bureau for International Education. Reprinted by permission of the publisher. All rights reserved.

(Childress, 2010, p. 7)

Appendix I

Land Grant University History

Land-grant institutions only exist in the United States and were created by the Morrill Act of 1862 (Miller, 2016, para. 1). That statute granted individual states large tracts of land to establish higher education institutions to create knowledge aimed at serving the public good. At their start, land grant higher education institutions focused on agricultural and applied science knowledge (from which engineering disciplines later flourished). Many of these universities remain tightly connected to their originating purposes and are research intensive. Moreover, these institutions are public, large, and decentralized and those characteristics make them some of the most complex of public tertiary educational organizations. Technical disciplines, such as engineering, are very salient in land-grant institutions although these universities are comprehensive in character. Land-grant institutions educate large numbers of university student populations in each state, drive new knowledge for the U.S. and the world through research, and promote the importance of student preparedness to serve their communities, states, and beyond.

Appendix J
Paid Transcriber's Confidentiality Agreement

Lindy Cranwell's dissertation research project for her
Ph.D. degree in Planning, Governance, & Globalization @ Virginia Tech
2018/2019

Title of Project: **University Comprehensive Internationalization: Faculty Perspectives on Meaning-Making, Attitudes and Motivations for Engaging Globally**

Student Researcher: **Lindy B. Cranwell (Dr. Max Stephenson - Principal investigator, Dr. Denise Simmons – Co-Principal investigator)**

I, _____, agree to act as a paid transcriber for Lindy Cranwell's Ph.D. research in connection to _____ university. Additionally, I agree that I will respect confidentiality of the department and individuals who may participate in interviews with said researcher. I will not reveal or discuss my part of the data for this research nor reveal any information regarding what I learn through this interaction.

Printed Name of Paid Transcriber

Signature

Date

Appendix K Email Text to Invite Informants

SUBJECT LINE: Request for help with Ph.D. dissertation research work

Dear Professional Colleague,

I am writing to you as a professional colleague and a Ph.D. student at Virginia Tech in Planning, Governance & Globalization to ask for help. My Ph.D. research dissertation title is *University Comprehensive Internationalization (CI): Faculty Perspectives on Meaning-Making, Attitudes and Motivations for Engaging Globally*.

I am looking for Civil & Environmental Engineering professors/researchers/administrators to serve as informants for my research study. If you are willing to act as an informant, your help will be confidential. In my study, I only interviewed CEE faculty members at land grant institutions (in the United States). I am asking for informant help to triangulate my data. The total expected input of time as an informant should be between 30-60 minutes.

Informants will be asked to (subjectively) rank the faculty members (a list will be provided) for an individual institution as to the level of advocacy in Comprehensive Internationalization for each member. Informants will need to sign a confidentiality agreement before they are able to rank an institution. Informants are asked to refrain from investigating Comprehensive Internationalization definitions/terms because interviewees self-identified without investigating information.

For now, I ask that you:

- A) Complete the attached form to indicate your familiarity with CEE departments at land grant institutions.
- B) Sign the confidentiality form that is attached.
- C) Send both forms back to me by email at lindycra@vt.edu.

Further: IF you have a match(es) with an institution used in my study, I will email a list of faculty members at that institution for you to rank as outlined above. (I will also send a copy of your confidentiality agreement with the name of the institution added).

I look forward to hearing from you. I appreciate your time and hope that you will be willing to act as an informant for my Ph.D. research (VT-IRB # 18-590).

Warm regards,
Lindy Cranwell

Appendix L Interview Questions

- 1) Interviewee or interviewer will confirm the name of the person being interviewed.
- 2) In our correspondence to set up this interview, you described yourself as a _____ advocate of Comprehensive Internationalization (CI). Please confirm or revise your choice of advocate-ship (strong advocate, moderate advocate, non-advocate) in relation to CI today?
- 3) Please define and/or describe comprehensive internationalization in the context of higher education. (Note: *Afterwards the researcher will provide the faculty member with Hudzik's definition of CI and the definitions of internationalization, globalization, and global engagement*).
- 4) Would you describe your university's efforts to internationalize comprehensively as intentional? If so, why? If not, why not?
- 5) Please share your thoughts regarding comprehensive internationalization **investment** at your institution at the following levels:
 - a. University leaders
 - b. College leaders
 - c. Departmental leaders
 - d. Peer leaders and/or your individual leadership
- 6) Please share your thoughts regarding comprehensive internationalization **infrastructure** at your institution (as a follow-up can ask about the following categories):
 - Organizational & programmatic resources
 - Opportunities for faculty exploration in CI in teaching, research and service
 - Faculty seminars/workshops
 - Campuses or centers abroad
- 7) Please share your thoughts regarding comprehensive internationalization **institutional networks** at your institution such as: communication channels, learning opportunities

about partnerships and models, connections to peer groups, timely communications about upcoming events, policy change, etc.

- 8) Do you feel **individually supported** to engage in comprehensive internationalization on your campus? Do you feel that the university helps you connect your teaching and research to this mission?

(Note: At the end of the response to question #8, the interviewee will receive a list of Childress' definitions of the Five I's: Please look over the definitions given to you from the framework for this research. Is there anything else you would like to add/change to your responses to questions #4-8 now that intentionality, investment, infrastructure, institutional networks, and individual support have been defined for you?

- 9) If all these factors, the Five I's, were implemented fully at your institution, do you think that organizational infrastructure, created to support internationalization, would prove helpful or hurtful to its realization at your university? Why or why not?

- 10) Do you think it is important to create globally prepared university students? And do you feel that you personally do or should use part of your teaching role to prepare students to be global citizens and engineers?

- 11) Have you ever participated in internationalization initiative in your faculty roles? If yes, what do you feel was the greatest motivator for your participation? What were your overall reasons for participation? **If no, what do you feel was the major reason for lack of participation? Were there other reasons for non-participation?**

- 12) In our conversation, you mentioned several parts of CI, but I did not hear you mention _____ or _____. Could you please share any thoughts you may have concerning these elements of CI?

- 13) Please rate your university on a scale of 1 to 10 (ten is best) regarding global engagement. College? Department? You personally?

14) Any other thoughts?

15) Please provide the following information, if willing: identity for gender and race, faculty rank, time of service at institution, and other demographic information that you are interested in sharing.

16) **SAY/ASK:** *As part of this study, you will have an opportunity to review a transcript of your interview and provide feedback. Do you want to receive a copy of your transcript and provide feedback?(record answer). Additionally, you will have an opportunity to read over the case study for your university and provide feedback. Do you want to receive a copy of the case study for your university and provide feedback?(record answer).*

Appendix M

Hudzik Definition Sheet for Interview

Hudzik offered a well-known definition of comprehensive internationalization (CI) in higher education in a report in 2011:

...a commitment, confirmed through action, to infuse international and comparative perspectives throughout the teaching, research, and service missions of higher education. It shapes institutional ethos and values and touches the entire higher education enterprise. It is essential that it be embraced by institutional leadership, governance, faculty, students, and all academic service and support units. It is an institutional imperative, not just a desirable possibility. Comprehensive internationalization not only impacts (sic) all of campus life but the institution's external frames of reference, partnerships, and relations. The global reconfiguration of economies, systems of trade, research, and communication, and the impact of global forces on local life, dramatically expand the need for comprehensive internationalization and the motivations and purposes driving it (Hudzik, 2011, p. 6).

Appendix N

Childress Excerpt About Model

For Childress, *intentionality*, “was achieved through the creation of multiple types and levels of internationalization plans, which formalized internationalization as an institutional priority and provided focus, organization, and resources for faculty to engage in internationalization” (2010, p. 140). *Investment* involved institutional targeting of resources from “diverse sources,” including investment from the university itself. Financial resources helped to maintain support of central international offices and to defray faculty’s financial costs of participation (i.e. passport and insurance fees). Both institutions in Childress’ research communicated to faculty members the importance of their engagement in internationalization efforts by providing sufficient resources and clearly communicating how to access them (Childress, 2010, p. 141). For Childress, *infrastructure* connotes “organizational and programmatic resources through which [faculty may] ...explore international perspectives within their teaching and research agendas” (2010, p. 141). Additionally, Childress argued that this factor may include: “academic activities and organizational practices, such as faculty seminars, international degree programs, and a campus overseas” (2010, p. 141). *Institutional networks* “are essential to create communication channels for faculty to learn about international opportunities, resources, and their colleagues’ areas of expertise and regional interests” (2010, p. 142). Finally, for Childress’ *individual support* was necessary “for faculty to connect institution-wide goals for internationalization with their individual scholarly agendas” (2010, p. 142).

Appendix O Codebook

In vivo coding: “as a code refers to a word or short phrase from the actual language found in the qualitative data record. All interviews in this study were coded using the in vivo method to identify themes in the data.

Magnitude coding: “could serve as one way of transforming or ‘quantitizing’ qualitative data” and is appropriate “for qualitative studies in education...that also support quantitative measures as evidence of outcomes” (Saldaña, 2016, pp. 86, 90).

Memo Writing: “serves as a code-and category-generating method” and an “analytic memo is an uncensored and permissibly messy opportunity to let thoughts flow and ideas emerge” (Saldaña, 2016, p. 245).

Structural Coding: “applies to content based or conceptual phrase representing a topic of inquiry” and “is appropriate for virtually all qualitative studies.” It “both codes and initially categorizes the data corpus to examine comparable segments’ commonality, differences, and relationships” and is “perhaps more suitable for interview transcripts” (Saldaña, 2016, pp. 97-98). This study used two structural codes:

1. I derived the following codes from responses to the Research and Interview Questions:

a. Research question #1 (see Table 2) relating to *intentionality* (see Appendix N)

included these codes:

- i. **(INTR)** Initial reaction to the term "CI" (also code the emails/phone notes for participants and non-participants)
- ii. **(INTD)** Terms in individual definitions
- iii. **(INTHR)** Reaction to Hudzik's definition
- iv. **(INTIU)** Terms in initial answer to intentionality of university
- v. **(INTIR)** Terms used in relation to "intentionality"

b. Research question #2 (see Table 2) relating to *investment* (see Appendix N)

included these codes:

- i. **(INVPRT)** Pre model share of association in terms of investment
- ii. **(INVPOT)** Post model share of association in terms of investment
- iii. **(INVPRPL)** Pre model share of positive investment language
- iv. **(INVPOPL)** Post model share of positive investment language
- v. **(INVPRNL)** Pre model share of negative investment language
- vi. **(INVPONL)** Post model share of negative investment language
- vii. **(INVPRBI)** Pre model share of basic ideas/phrases in terms of investment
- viii. **(INVPOBI)** Post model share of basic ideas/phrases in terms of investment

c. Research question #3 (see Table 2) relating to *infrastructure* (see Appendix N)

included these codes:

- i. **(INFPRRT)** Pre model share of association in terms of infrastructure
- ii. **(INFPPOT)** Post model share of association in terms of infrastructure
- iii. **(INFPRPL)** Pre model share of positive infrastructure language
- iv. **(INFPOPL)** Post model share of positive infrastructure language
- v. **(INFPRNL)** Pre model share of negative infrastructure language
- vi. **(INFPONL)** Post model share of negative infrastructure language
- vii. **(INFPRBI)** Pre model share of basic ideas/phrases in terms of infrastructure
- viii. **(INFPOBI)** Post model share of basic ideas/phrases in terms of infrastructure

d. Research question #4 (see Table 2) relating to *institutional networks* (see Appendix N) included these codes:

- i. **(INPRT)** Pre model share of association in terms of institutional networks
 - ii. **(INPOT)** Post model share of association in in terms of institutional networks
 - iii. **(INPRPL)** Pre model share of positive institutional networks language
 - iv. **(INPOPL)** Post model share of positive institutional networks language
 - v. **(INPRNL)** Pre model share of negative institutional networks language
 - vi. **(INPONL)** Post model share of negative institutional networks language
 - vii. **(INPRBI)** Pre model share of basic ideas/phrases in terms of institutional networks
 - viii. **(INPOBI)** Post model share of basic ideas/phrases in terms of institutional networks
- e. Research question #5 (see Table 2) relating to *individual support* (see Appendix N) included these codes:
- i. **(ISPRT)** Pre model share of association in terms of individual support
 - ii. **(ISPOT)** Post model share of association in in terms of individual support
 - iii. **(ISPRPL)** Pre model share of positive individual support language
 - iv. **(ISPOPL)** Post model share of positive individual support language
 - v. **(ISPRNL)** Pre model share of negative individual support language
 - vi. **(ISPONL)** Post model share of negative individual support language
 - vii. **(ISPRBI)** Pre model share of basic ideas/phrases in terms of individual support
 - viii. **(ISPOBI)** Post model share of basic ideas/phrases in terms of individual support
- f. Interview question #10 about the importance of globally preparing students (see Appendix L):

- i. **(GPSI)** Importance of globally preparing students - initial answer
 - ii. **(GPSPL)** Positive language about globally prepared students
 - iii. **(GPSNL)** Negative language about globally prepared students
 - g. Interview question #9 about Childress model (see Appendix L):
 - i. **(MHPL)** model would be helpful
 - ii. **(MHUR)** model would be hurtful
 - iii. **(MPRBS)** model problems
 - iv. **(MCOMMS)** model comments
 - h. Possible statements affecting Childress model:
 - i. **(MB/C)** Barriers/challenges stated
 - ii. Motivators:
 - 1. **(MMPr)** primary
 - 2. **(MMS)** secondary
 - iii. **(MS)** Suggestions
 - i. Interview question #12 (see Appendix L) to review topics in CI. A check sheet of topics was used during this question. This question was aimed at understanding awareness levels and participation in CI activities:
 - i. **(CICAWME)** CI aware and topic mentioned earlier
 - ii. **(CICAWNME)** CI aware and topic not mentioned earlier
 - iii. **(CICNA)** CI not aware of topic
2. The **MMP** structural code coded all applicable phrases to one of the following codes and was used in secondary coding to more closely connect to the title of this study:
- a. **MM: (faculty) meaning-making** is derived from how faculty members personally describe CI, relate CI with their identity, connect/construe events based on

personal experience with CI, interpret personal situations of CI engagement, and connect CI to their long-term goals.

- b. **MO:** (*faculty*) *motivations* are derived from cited personal reasons for engaging globally or not in CI activities.
- c. **PR:** (*faculty*) *perceptions* are derived from how faculty members rank/view CI efforts on campus, judge the value of CI, discern impact, and provide broad insights to CI activities across the university.