SEPTEMBER, 2016 VOLUME 1, ISSUE 3

Policy Research Brief

Langston University
Rehabilitation Research and Training Center (RRTC) on Research and Capacity Building for Minority Entities
www.langston.edu/capacitybuilding-RRTC

Corey L. Moore, Rh.D.*, Edward O. Manyibe, Ph.D., Perry Sanders, Ph.D., Andre L. Washington, Ph.D., Fariborz Aref, Ph.D., Cherjuan Robertson, B.A.
Langston University Rehabilitation Research and Training Center (LU-RRTC) on Research and Capacity Building for Minority Entities, Oklahoma City, OK 73111, USA

An Evaluation of a Disability and Health Institutional Research Capacity Building and Infrastructure Model (IRCBIM) at a Tribal College/University: A Case Study Approach

Participant Characteristics

Race/Ethnicity	***%***
African American	20.00
American Indian	80.00
Gender	
Male	80.00
Female	20.00
Institutional Role/Title	
Faculty Member	40.00
Administrator	40.00
Student	20.00
Teaching Load Per Semester (Fall/Spring)	***n***
Faculty Member	4
Administrator	2
On-Campus Committee Service Average	
Faculty Member	4
Administrator	2

■ Purpose of Study

Tribal colleges and universities (TCUs) in the United States (U.S.) are critical vehicles for the development of tribal communities across Indian Country and the nation at large [1-3]. There is growing consensus among researchers, tribal disability and health experts and leaders, disability advocates, and policy makers that strengthening and sustaining sufficient TCU disability and health research capacity is vital to enhancing employment, community living and participation, and health and function outcomes among American Indians and Alaska Natives (AI/ANs) with disabilities and to realizing the overarching policy objective of advancing a diversified scientific workforce [4]. Consequently, such stakeholders are increasingly calling for new research capacity building (RCB) strategies that lead to increased disability and health research participation and productivity. The purpose of this study was to evaluate the Institutional Research Capacity Building and Infrastructure Model's (IRCBIM) implementation and outcomes in the case of a TCU located in the central region of the U.S. IRCBIM represents an emerging innovative and integrated approach designed to build, strengthen, and sustain adequate research capacity (i.e., research infrastructure and investigators' research skills) at TCUs and other minority-serving institutions.

■ Summary of Findings

The results track the study's objective, which was to evaluate the IRCBIM based on the triangulation of perspectives of participants representing three different key stakeholder cohorts (i.e., faculty members, staff/administrators, and students). Data were organized and coded according to major categories based on IRCBIM's customized intervention components. A mixture of key IRCBIM benefits and challenges experienced emerged as important factors for increasing TCU disability and health research capacity.

IRCBIM - Benefits and Challenges

Code	Description	
Peer-to-Peer Mentoring	• Knowledge and skills • Promotion of learning and retention • Creating a pipeline for American Indian researchers	• Success in graduate school • Self-efficacy in research participation • Building the college's research environment/prestige
Community of Practice	• Collective learning • Networking and support system	
Grant writing and manuscript development training	• Knowledge and skills • Publication opportunities	
Research Infrastructure Improvement Strategic Planning	• Providing research direction to college • Understanding context for research capacity building • Building research infrastructure	
Research Support Resources	• Incentives	
RCB Challenges	• Time constraints and scheduling conflicts • Negative perceptions and low expectations	• High turnover among college leadership and faculty • Limited number of faculty with terminal degrees

Acknowledgment: The contents of this policy brief were developed under a grant from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR grant number 90RT5024-01-00). NIDILRR is a Center within the Administration for Community Living (ACL), Department of Health and Human Services (HHS). The contents of this brief do not necessarily represent the policy of NIDILRR, ACL, HHS, and one should not assume endorsement by the federal government.

*Corresponding author: Dr. Corey L. Moore, Principal Investigator and Research Director AND Delta Sigma Theta Sorority, Inc. Distinguished Professor Endowed Chair
6700 N. Martin Luther King Avenue, Oklahoma City, OK 73111 / E-mail: clmoore@langston.edu

■ Background

There are 36 accredited TCUs that serve more than 30,000 American Indian students [1]. There exist several reasons for building and sustaining research capacity at TCUs. First, several existing disability and health public policies such as Section 21 of the 1998 Rehabilitation Act Amendments (PL. 93-112), Minority Health and Health Disparities Research and Education Act of 2000 (PL. 106-525), and Patient Protection and Affordable Care Act of 2010 (PL. 111-148) emphasize greater TCU participation in related research and development (hereafter referred to as R&D) agendas, and the need to continue to diversify the scientific workforce as a strategy to advance scientific knowledge and innovation for problem solving. These legislative mandates serve as the bedrock for building, strengthening, and sustaining TCU research capacity[5-8].

Second, because knowledge generated from disability and health research may define disability and health policy, influence service delivery systems, and shape standards of practice for AI/ANs [9,10], it is important to ensure that TCUs are empowered through research capacity building (RCB) to harness Indigenous knowledge to inform state and national policy objectives. Moreover, involving TCUs in all stages of disability and health R&D will ensure that knowledge and its methods of investigation are not disconnected from the tribal community members' history, cultural context, and worldview[9,10].

Third, the lack of diversity within the scientific workforce persists. Although scholarly works have clearly documented that diversity matters[11-13], the federal disability, health, and rehabilitation research enterprise lacks the critical mass of researchers of color needed to create innovative evidence-based solutions to complex questions, especially in the reservations. Fourth, ongoing disparities among AI/AN populations will continue unmitigated. In the recent past, researchers, disability and health care experts, and tribal leaders have begun to see a direct connection between the lack of locally produced research and employment and health disparities facing the AI/AN population [10,14]. Consequently, building TCU research capacity and their faculty members' methodological and grant writing skills is increasingly becoming a vital intervention to sustaining robust empowered tribal communities [15-17]. Moreover, AI/AN community members are more likely to trust, accept, and utilize research findings generated at TCUs than those produced at traditionally White Institutions due to their history and cultural connections to their communities. Consequently, these institutions are well positioned to develop culturally appropriate methods and tools to address unmet disability and health needs of the Indian Country.

■ Population

The convenience sample contained 5 participants, and of those individuals 4 (80%) were American Indian and 1 (20%) was African American; 4 (80%) were female, and 1(20%) was male. Of the participants, 2 (40%) were faculty members, 2 (40%) administrators, and 1 (20%) was a student. Faculty members and administrators had been employed at the institution for an average of 23 months. The student had just completed one year at the institution at the time of the interview. On average, faculty members taught four courses per semester and participated in four on-campus committees while the administrators taught an average of two courses per semester. Specific participant details have not been provided because we did not want to compromise confidentiality, especially given that the sample is a small cohort.

■ IRCBIM Intervention

The IRCBIM, officially launched in October 2014, was developed by the Langston University Rehabilitation Research and Training Center (LU-RRTC) on Research and Capacity Building for Minority Entities in collaboration with the Institute for Community Inclusion at the University of Massachusetts Boston for the express purpose of empowering minority serving institutions to overcome poor research and development participation and related challenges. The model embraces a new paradigm to RCB by holistically addressing individual and institutional intrinsic, extrinsic, and systemic factors that facilitate or impede R&D participation and productivity. The goals of the model are three-fold. First, through research infrastructure improvement, the approach aims to systematically build the research capacity of minority serving institutions such as TCUs to undertake scientific studies that produce new knowledge, develop new ideas, and experiment with innovations that lead to improved outcomes among tribal members with disabilities and individuals with disabilities from other traditionally underserved racial and ethnic groups. Second, the model provides faculty members with in-depth knowledge of the research process and equips them with practical skills for the design and conduct of quality research studies, including data collection, analysis, and dissemination. Third, IRCBIM promotes awareness at these institutions about federal research agencies that fund disability and health research. RCB activities are expected to generate critical knowledge to solve contemporary disability, health, independent living, and rehabilitation problems that face the AI/AN population and other minorities.

Common characteristics reported to guide successful RCB programs[4,18,19], key weaknesses identified by experts participating in NIDILRR's 2011 RCB Summit [20], recent relevant research study findings [18,21-24], and the project principals' personal experiences and "inside" knowledge of MSIs research environment nuances helped to inform the development of the model. For example, Cooke[19] identified building skills and confidence, developing linkages and partnerships, ensuring research is close to practice, developing suitable dissemination, investing in infrastructure, and building elements of sustainability and continuity as critical principles that should guide capacity building at individual, team, organization and supra-organization levels. Bopp et

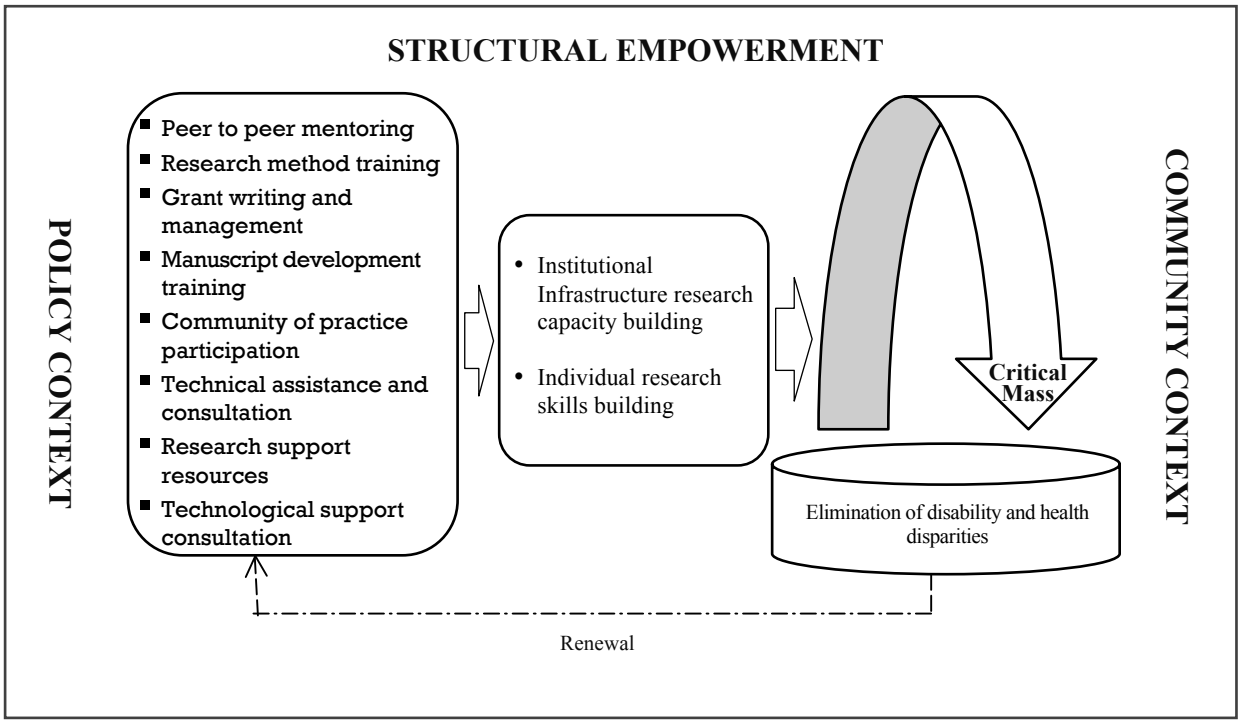

Figure 1. An Emerging Conceptual Framework: Institutional Research Capacity Building and Infrastructure Model (IRCBIM) for Improving Disability and Health Research Capacity at Minority Serving Institutions.

al.[25] also identified seven dimensions of RCB: shared vision, sense of community, participation, leadership, resources, skill and knowledge, communication and ongoing learning. The structural empowerment and the critical mass theories were considered important theoretical frameworks for conceptualizing and developing core RCB intervention components and activities. Figure 1 provides the IRCBIM's conceptual framework inclusive of various intervention components.

■ Method

Study Setting and Design

This case study, which is part of a larger investigation exploring the effectiveness of IRCBIM across several other minority-serving institutions (i.e., historically Black colleges/universities, Hispanic serving institutions), was conducted at a TCU located within the central region of the U.S. The institution was chartered by one of the American Indian tribes, and prepares students to succeed in a globalized world. Similar to other TCUs, the institution serves as a community resource for crucial social services that foster American Indian culture, languages, and traditions. Moreover, the institution represents a beacon of light for tribal members that experience high rates of poverty, unemployment, and disability, health, and rehabilitation inequities.

In an effort to gain a better understanding about the institution's unique RCB and research infrastructure development needs, we analyzed data (qualitative and quantitative) garnered from two research capacity building needs assessments; one completed by faculty scholars/fellows and the other targeting administrators, staff, students, and faculty; and document review of the institution's IRCBIM application. The analysis of these data were accomplished across three broad RCB and research infrastructure areas (i.e., individual, institutional, and systems) and the following ten specific domains; (a) leadership, (b) structures, (c) collaboration, (d) external support, (e) access to resources, (f) research networks, (g) skills and knowledge, (h) ongoing learning, (i) participation, and (j) psychological wellbeing. The results showed that several interventions were needed to enhance RCB and research infrastructure at the institution. Based on those findings, the LU-RRTC research team developed a "Plan of Action" to guide the delivery of customized intervention components to the institution. Consistent with IRCBIM, the plan of action activities were designed to address individual, institutional, and system issues. Accordingly, the following intervention components were introduced to the institution's environment: Peer-to-Peer Mentor Research Team Academy research training and mentoring (herein referred to as formal mentoring); research infrastructure improvement strategic planning, building relationships and networks with community agencies, research grant writing training, manuscript development for peer review journal publication training, community of practice, and technological support consultation/training.

■ Procedure

The study used a multi-method case study research design (i.e., in-depth interviews, document review, and participant observation) to collect data regarding participants perspectives on IRCBIM, benefits as well as experienced challenges. Multiple methods of data collection allowed the research team to triangulate findings using three different data sources, cross-check results for consistency, enhance confidence in overall conclusions, and offset the biases or limitations of single method designs. Participants gave their verbal and written consent. The appropriate Institutional Review Board approved the study procedures.

In-depth individual interviews. Interviews were conducted with study participants. The interview protocol, developed by research team members, contained open-ended questions that were related to the IRCBIM and were designed to elicit the participants' evaluation of the model's intervention activities. Two research team members conducted the interviews and documented their observations during a two-day site visit to the college using an observation protocol developed by the research team. One of the team members was an American Indian who is blind and the other was African American. Each interview took an average of 20 minutes. During interviews, participants were encouraged to speak freely about their experiences.

Document review. We reviewed several documents, listed in Table 1, that were used to provide background context about the institution and its history and connection with the community [26,27]. Data gleaned from the documents were also used to corroborate observational and interview data. According to some researchers, a review of documents is an unobtrusive method, rich in representing the values and beliefs of participants [26,27].

Participant observation. Participant observation, an ethnographic method of data collection, was used to gain insight regarding the college's research environment and culture. In addition, it was used to help the research team develop probing questions to be addressed with participants. Field notes were used to organize the data gathered from observations.

Data Analysis

Consistent with qualitative studies, data collection and analysis took place simultaneously and lasted about three months. Our method of data analysis involved using descriptive and evaluative coding of interview transcripts and documents selected for review. All interviews were audiotaped and transcribed by a professional transcription service. Member-checking of the transcripts was used to increase trustworthiness and credibility. Two research team members utilized thematic analyses to code narrative interview data for themes that emerged from the participants' accounts. The principal investigator (PI) and the coders met and compared the analyses. All disagreements were discussed and resolved. The thematic analysis process included open coding, memo writing, and constant comparison of data, which are elements closely aligned with a grounded theory approach Open coding was stopped when data saturation was reached. Results from the thematic analysis of the in-depth interview transcripts, document review, and observations yielded several themes under each category [28,29]. NVivo, a qualitative data analysis software, was used as a supplementary tool for analyzing and organizing data.

Table 1: Documents reviewed and availability

Titles of Documents Reviewed	Availability
• College brochure	• Publicly available
• Institutional Research Capacity Building Needs Assessment	• Not publicly available
• Grant writing and Manuscript Development Training Report	• Not publicly available
• Monthly Minutes between Researchers and Mentors	• Not publicly available
• Grant writing and Manuscript Development Consultant's Report	• Not publicly available
• Institutional Research Capacity Building Infrastructure Model (IRCBIM) Application Packet	• Not publicly available
• Institutional Research Capacity Building Infrastructure Model (IRCBIM) Action Plan	• Not publicly available
• Expenditure Reports – Grantees	• Not publicly available
• Technical Assistance Satisfaction Survey	• Not publicly available
• Research Capacity Building Strategic Plan	• Publicly available
• College Website/ Faculty Catalog (2016)	• Publicly available
• Academic Catalog 2014-2016	• Publicly available
• Community Needs Assessment	• Publicly available
• College Application for Admission Packet	• Publicly available
• Tribal College, Journal of American Indian Higher Education, Spring 2015	• Publicly available
• Tribal College, Journal of American Indian Higher Education, Summer 2015	• Publicly available
• Tribal College, Journal of American Indian Higher Education, Fall 2015	• Publicly available
• American Indian Higher Education Consortium (AIHEC) Flyer	• Publicly available

This approach enriched our understanding of the institution's existing capacity to participate in research, its community linkages, RCB challenges, and what it might mean to enhance its disability, health, and rehabilitation research capacity. Data were organized and coded according to major categories that were based on IRCBIM customized intervention components (i.e., peer-to-peer mentoring, community of practice, grant writing and manuscript development training, etc.). The challenges category addresses overall issues deemed to impede the institution's RCB. A summary of major categories and subthemes are presented in Table 2.

■ Results

Category 1: Peer-to-Peer Mentoring

Knowledge and skills. Participants involved in the mentoring program described mentorship as vital for building their individual and team research skills, values, and attitudes. They indicated that mentoring increased their networking and negotiating skills and their awareness on the importance of self-care and wellness. Commenting on the experience with the mentorship program and other trainings, one participant stated, "I feel that I'm ready to begin my own research." Some participants felt that the mentoring program should be made available to more faculty members, especially new members, to help them learn the culture and procedures of the college. One participant observed that a mentoring program can be very beneficial "in helping learn the little technical things that would make working here easier." Mentoring was also described as a critical component to understand how to work with AI/AN students. One participant observed:

> *I think a mentor program, especially at a tribal college, would be really good in terms of helping understand any of the things that you would want to know about working with and teaching mostly [AI/AN] students.*

Promotion of learning and retention. Frequent administration and faculty turnover rates were discussed as important challenges that the college was struggling to address. Some participants reported that mentoring may lead to increased faculty job satisfaction and retention. They perceived mentoring as a very important strategy in retaining faculty members and thus addressing high turnover rates the college experiences, as one of the participants explained: "I think having a mentor program, especially in this institution, would be very beneficial because we do have a turnover rate."

Another observer noted that "mentoring can play a significant role in developing overall climate that supports teaching and research" hence reducing faculty turnover rates. Review of the college's documents revealed that the IRCBIM will enhance students' learning experiences and, as one document revealed, "help the college offer students more opportunities to enhance their skills in research, critical thinking, problem solving, communication, planning media literacy, and goal setting."

Creating a pipeline for American Indian researchers. Researcher observations and review of pertinent documents revealed that there are limited disability, rehabilitation, or health academic program offerings. One observer noted, "This paucity in related programs represents a training pipeline barrier for producing AI/AN scholars who can go on to receive doctoral degrees and advance research training. In addition, all participants were concerned about the lack of AI/AN researchers and inadequate data on Native Americans and tribal schools. One participant simply stated "there's not a lot of data on them [Native Americans]." Noting that the nation's future scientific research workforce is dependent on a diverse pool of highly-qualified researchers (e.g., AI/AN researchers), participants expressed that a sustained peer-peer mentor research team model at TCUs will have a direct influence on that outcome. One participant stated:

> *If we understand more about how to do it [research], we'll be able to do it better and in a way that helps the students, which is our big goal--helping the students--more so, because they'll understand as they go on in the world, the possibilities and understanding doing research helps you understand other things out there.*

Consistent with interview and observation findings, the review of the documents revealed that the IRCBIM has the potential "to create an environment of competent student researchers" within the TCU that was the focus of this study. The document further indicated that the model will help "students learn how to incorporate their own tribal values and perspectives into their research and findings" and thus work to progress Indigenous ways of being, knowing, and doing in a modern and constantly evolving context.

Success in graduate school. Participants also identified mentoring as critical for one to succeed in graduate school. It was reported that several faculty members at the college are also enrolled in masters or doctoral programs, thus making research mentoring for those individuals even more imperative. One observer noted:

> *There were two or three [faculty members] who had started considering working on their doctoral degrees since the IRCBIM had created a learning atmosphere of renewed academic goals.*

One of the participants was very happy to report that mentoring was helping her to be successful in graduate school, hence making the mentorship more relevant and practical, as illustrated in the following quotation: "I scored a hundred percent on my research plan because a lot of it I learned from him [mentor] …everything we've learned so far is being carried over into a course work."

Confidence to Conduct Research. Mentoring was also described as vital for building TCU faculty's confidence in

research skills. In particular, participants who were involved in mentoring reported that their confidence to conduct research increased as a result of participating in various RCB activities such as mentoring, strategic planning; and research methods, grant writing, and manuscript development trainings. One fellow stated:

> *But through this [mentoring], it's actually built the confidence that I may not like always to write, but I can do this. I can do research with the support of our mentors and the support from Langston University. Because we do have the support from the Langston University through the grant, we can do this, and that has been a confidence builder.*

Another participant stated:

> *So getting that training it's firing us up and hopefully getting us to fire everybody else up to have these manuscripts and these things come out of [the college], that we're not just this little, tiny college; we have some qualified researchers that are capable.*

Participants described their involvement in practical research activities as critical to building their self-efficacy to write research grants and get published, as one participant observed:

> *Nothing builds confidence like doing. And so practicing doing would build more so, but that's a later thing. First of all, you've got to learn a little bit how. And yeah, different directional things like that, especially when somebody's never done something like that, they can see it fall together piece by piece.*

Observers, in their interactions with mentoring participants, recognized increased level of confidence in their ability to conduct research. One observer for example, noted that, "compared to my previous visit, this time round faculty members appeared more confident doing research."

Building the college's research environment/culture and prestige. Participants discussed the role of formal mentoring and other research activities in building the college's research environment and establishing research culture. Some of the participants indicated that implementing a research mentoring program at their campus not only signaled the college's commitment to research, but it also motivated them to conduct research. One participant observed:

> *Just that knowing that the college is interested in pushing research is definitely getting me to the point where I realize that I don't want to leave my ABD hanging out there. And now, this is a great place to do the research.*

Participants also reported that building the research capacity of faculty members would improve the college's prestige. In the words of another participant:

> *Well, I think our organization is only as good as the people that are devoted to it … So right now we do not have a research environment. So with all of us getting this experience and this knowledge, then we're moving the college as a whole in the right direction.*

Another participant added:

> *But, by having all these kinds of strategic planning activities, the mentoring activities, what you do is you*

Table 2. Major categories and subthemes

Category	Sub-themes
Peer-to-Peer Mentoring	• Knowledge and skills • Promotion of learning and retention • Creating a pipeline for American Indian researchers • Success in graduate school • Self-efficacy • Building the college's research environment and prestige
Community of Practice	• Collective learning • Networking and support system
Grant Writing and Manuscript Development Training	• Knowledge and skills • Publication opportunities
Research infrastructure Improvement Strategic Planning	• Providing research direction to the college • Understanding context for research capacity building • Building research infrastructure
Research Support Resources	• Incentives
RCB Challenges	• Time constraints and scheduling conflicts • Negative perception and low expectations • High turnover among college leadership and faculty scholars • Limited number of faculty with terminal degrees

show your faculty that you are invested in making your institution a true institution of higher learning.

One observer noted, "He [administrator] was even more excited about how they could continue to work with Langston University and the grant [RRTC]." Another observer noted that the college "is in a positive place regarding cultivating a strong research and academic environment for the faculty, staff and students" partly due to the implementation of the IRCBIM on campus. A document review also revealed that the model will assist the college "continue our accreditation and remain true to our mission, philosophy and institutional outcomes."

Category 2 – Community of Practice

Collective learning. The community of practice was described as an excellent forum to share information, ideas, and experiences; expand knowledge and skills; and network with highly learned people who were dedicated to minority issues. Faculty members in the mentorship program perceived community of practice as a critical opportunity for cross fertilization of knowledge where the experience of each member increased the capacity of others. Participants identified discussions on research barriers unique to TCUs, historically Black colleges and universities (HBCUs), and Hispanic serving institutions (HSIs) and strategies to overcome identified obstacles as some of the topics they found most relevant. Participants also described the community of practice as a great opportunity for innovation and developing new ideas, as reflected in the following statements:

When we talk it over and figure out things of what we're doing and what works and what doesn't and just share.

It's always an advantage for the people in a situation that are doing the same thing to work together and share because we learn from each other. We get ideas from each other. We gain. We hear others say this or that, and we go, "Hey, okay, I might try that instead of what I'm doing.

In addition, participating in the community of practice was perceived as a good approach to build faculty scholars' research self-confidence. One participant stated: "I think the biggest advantage would be helping to lower the fear of research."

Networking and support system. Community of practice was also described as a networking and social support system. Participants reported that connecting with other people who are also learning helped them feel supported, "I think it provides a support system and ideas." As a result of linking with other researchers in academia, participants develop linking and networking skills. One participant noted; "Just having these networking opportunities with other people that you're surrounded by doctors that are only pushing and motivating you."

Category 3 – Grant Writing and Manuscript Development Training

Knowledge and skills. Most participants discussed the importance of having grant writing and manuscript development training at the college as an innovative strategy to increase the number of faculty scholars who are not only knowledgeable about federal research funding entities (e.g., NIDILRR and NIH) but also have the skills needed to write competitive research grants. One participant shared:

He (consultant) covered things I hadn't heard before. I'd been to other grant-writing stuff through the years, but he covered some things in a really fun and interesting way that kept our attention and things I hadn't heard before …He was a very good presenter and teacher.

A review of documents also indicated that participants gained knowledge on the "federal grant landscape, with a particular emphasis on NIDRR and NIH funding mechanisms … the elements of a typical application kit, usual NIDRR and NIH grant selection criteria, a recipe for successful grant writing, and building infrastructure to write successful grants and manuscripts."

In terms of manuscript development training, a review of documents indicated that eleven faculty members, students, and staff learned research skills such as community-based participatory research principles and processes, how to choose the data to be reported, identifying research aims, conducting data analysis, reporting results, and writing the discussion section. Unsurprisingly, all participants reported that they had never participated in any training on how to write a research grant proposal or develop a manuscript for a refereed journal submission. This view was strengthened through document review which recommended:

This workshop was attended with great enthusiasm and those present would like to do both, write grants and manuscripts for publication. However, for the Tribal College to be able to develop and secure research grants, I recommend more training and technical assistant to those individuals who show interest and forward action toward grant and manuscript development.

Publication opportunities. Participants reported that getting published was a remote idea prior to the implementation of the IRCBIM at their college. However, with mentoring and other research activities, they indicated that getting published is becoming a reality, as one of the participants observed, "Him [mentor] being here and talking about the manuscript training and then being able to meet as a group on the conference calls, that now it doesn't feel so much farfetched to be published." A review of documents revealed that two faculty members participating in the IRCBIM mentorship component were in the process of developing a manuscript, which they planned to submit to a peer reviewed journal for publication consideration.

Category 4 – Research Infrastructure Improvement Strategic Planning

Participants discussed the benefits of having a strategic plan not only in relation to the development of their own research capacity, but also in relation to benefits to the college and the local community. Research infrastructure strategic planning (hereafter referred to as strategic planning) was provided as part of technical assistance and consulting on infrastructure issues. When asked to describe the advantages of having a strategic plan, three subthemes emerged, namely providing research direction to the college, understanding RCB context, and building research infrastructure.

Providing research direction to the college. Participants described the strategic plan as "a directional document" that gave guidelines and laid out a framework for the college's RCB efforts. They further noted that strategic planning is a very important part of understanding where the college is going. In addition, participants reported that the strategic plan helped the college identify strategies and resources to improve the institution's research capacity and infrastructure. The following two quotes illustrate how participants described the role of the strategic plan:

> *Okay, here's where we are. Here's where we need to go. How do we get there?"*

> *I think it [strategic plan] would give us guidelines and rules, first off. And a strategic plan, I mean, to me it's a directional document.*

Participants also explained that developing a strategic plan was important because it allowed them to own the process and determine the research direction of the college. They indicated that their hope is that the strategic plan that was developed would result in a more focused research agenda for the college and faculty members.

Understanding context for research capacity building. Participants indicated that developing a strategic plan is an important aspect of capacity building because it allows for understanding of the context under which it will be implemented. According to the participants, strategic planning was an effective way to respond to the diverse and unique needs of the community. One participant staff member observed: "You need to know the needs of the community so that you can better serve the community and build your strategic plan around the community needs."

Participants indicated that using experts and involving a cross section of participants from the community facilitated buy-in and adoption of the IRCBIM. One participant observed: "It [involving experts and community members] just helped, like I said, the buy-in and helped the credibility of it."

Participants reported that the tribal community has unique needs that require unique strategies. A review of documents showed that the reservation where the TCU is located experiences a variety of disability, health, and socioeconomic disparities. One observer noted, "She [participant] did express their challenges regarding health issues among some of the tribal members with diabetes and some addictions."

Building research infrastructure. Improving the college's infrastructure to support and enhance research was perceived as a critical component of research capacity building. Participants also described the strategic plan that was developed as a critical tool that can facilitate strategic resource allocation decision-making. One informant stated "it's [strategic planning] a huge thing with the budget, and it's a huge thing with where resources are going to be allocated." In addition, participants indicated that the strategic plan would help college administrators focus on building the college's physical infrastructure. One of the informants explained:

> *I think a strategic plan is very important because we're looking at trying to build the college, not just in terms of the number of students that we meet, but we're also trying to build the college in terms of some of the physical plan.*

Another participant observed: "Everything about the activities that we have done so far can be easily implemented to strengthen colleges."

Category 5 - Research Support Resources

Incentives. Most participants discussed the positive effects incentives and rewards had on faculty's motivation to participate in mentoring and engage in research. Mentoring was perceived as a positive experience partly because participants had incentives to apply what they were learning and practicing. One of the participants stated:

> *Sometimes you go to trainings, and then once you leave, you never see it again. These things [IRCBIM research activities] aren't like that. And with the mentorship, you're held accountable and you're held to a standard of maintaining all of the knowledge you gained, and then what are you doing with it.*

Some participants also reported that monetary incentives they were receiving for participating in mentoring had helped them purchase research infrastructure resources such as library materials and data management software essential to accomplish their research projects. A review of documents (i.e., expenditure reports) submitted to research implementers indicated that faculty members participating in the mentoring program used monetary incentives to purchase "computers and office supplies" and to support research activities. One fellow observed:

> *Just the use of the funds have been--we've benefited greatly from it, putting the dollars towards things that we wouldn't have been able to do if we didn't have this grant.*

Category 6 - RCB Challenges

Time constraints and scheduling conflicts: All participants reported that finding time to participate in research capacity building activities was perhaps the number one challenge they faced on a daily basis. Participants observed that faculty members and staff in a small college like theirs often "wear many hats" which makes it hard to juggle the responsibilities of a full time job, family, and community demands. For example, in addition to teaching, advising students, and conducting administration duties; faculty members and staff have to attend to family and community responsibilities. One participant explained:

> *Because it's [college] a small college and all of us have to wear many hats. We have to work with other things like grants and things like this. And so time becomes probably our most treasured thing … it's hard to have enough time to do all the different things. And new things come in, and then you have to find time and so forth.*

Scheduling conflicts was also identified as a major challenge to participating in activities (e.g., webinars, workshops, and conference calls) designed to improve research skills (i.e., research methods and grant writing) and research infrastructure. One participant observed:

> *He (CoP facilitator) has been putting on some webinars, and the one thing that is hard for me is those webinars are always when I have my master's class.*

Negative Perception and Low expectations: Most participants felt that "outsiders" not only devalue and underrate higher education contributions of TCUs but also have low expectations of the faculty's ability to conduct quality research. Participants indicated that such low expectations undermine TCU faculty scholars' confidence to succeed in the research enterprise. One participant shared:

> *Well, I think, first of all, the general consensus is, out in the external circles, that tribal colleges' education is less than. And I don't think that perception has changed much … It's kind of like with historically Black colleges when they first started or any other minority institution.*

Contrary to outsiders' expectation, TCUs have the ability to do research that benefit society, as one participant observed, "But we can do research. We can do valid research. This institution has done a lot of research in its short history." In support of this assertion, one observer concluded:

> *My personal reflection is that [the college] is in a positive place regarding cultivating a strong academic and research environment for the faculty, staff and students, and great camaraderie.*

High turnover among college leadership and faculty scholars. Some participants were concerned about the effects of the high turnover rate among university administrators and faculty scholars on the sustainability of the research momentum at the college. For example, participants perceived the turnover rate as "a major challenge" and "hardest thing" that had the potential to negatively impact research capacity building and infrastructure development, especially when key personnel leave.

Limited number of faculty with terminal degrees. A review of the institution's documents also revealed that most of faculty members at the institution did not have earned terminal doctoral degrees (i.e., Ph.D. or Ed.D.) in their areas of discipline. More specifically, the institution's 2016 website faculty catalogue reflects that only 2 of the 42 faculty or staff listed possessed a doctoral degree. This observation may be typical of many Carnegie Classified Tribal Colleges as they generally only offer associate's or baccalaureate degree programs.

■ Discussion and Recommendations

The purpose of this case study was to evaluate the IRCBIM implementation and outcomes in the case of a TCU located in the central region of the U.S. All intervention components (i.e., peer-to-peer mentoring, research methods training, communities of practices, grant-writing and management training, technical assistance and consulting on infrastructure issues, providing research support resources, and technological support consultation) of the model introduced to the institution's environment encompassed empowerment elements. This evaluation of the model's components perceived impacts on RCB at this TCU is nonetheless without limitations. First, this case study dealt with only one TCU. Individual cases, by their nature, are often problematic for generalizing results to other settings[29,30]. Second, the study relied on a small convenience sample of five participants. Given the inherent bias found in convenience samples, it might mean that the sample was unlikely to be representative of faculty members, staff, and students at the institution[29,30].

Despite these limitations, however, the study represents an important step toward exploring and understanding the promising benefits and challenges of implementing IRCBIM at a minority serving institution, especially TCUs. Single case studies represent an acceptable in-depth method for conducting research that involves an empirical investigation of a specific contemporary phenomenon within its real-life context inclusive of a single person, group, event or community[29,30]. For example, the comprehensive qualitative accounts produced in this case study not only help to describe the outcomes of implementing IRCBIM at a particular TCU, but also explain the intricacies of a real-life setting that may not be captured through experimental or survey research[31]. The emerging IRCBIM benefits, implementation challenges, and recommendations that follow can help to inform the development of future RCB policy initiatives and best-practices.

Consistent with extant scholarly literature[4,21,32,33], our findings show that formal mentoring at TCUs has several benefits. These benefits include improved learning and retention outcomes, creating a pipeline for AI/AN researchers, contributing toward the success of faculty in graduate school, building research self-efficacy among faculty members, and building the college's research environment and prestige. In addition, mentoring helped participants gain greater control over their research projects. As fellows learn new research skills they gain greater control over their research projects, increase their self-efficacy, and in the long run reduce their marginalization within disability and health research community. In our previous work[4], we discussed in detail the design of the Peer-to-Peer Mentor Research Team Model, which emphasizes ongoing research, team work and collective learning, incentive scheme, peer support, and mentorship as vital capacity building elements. Without mentoring, RCB at these institutions will continue to fall short and efforts to eliminate disability and health disparities among tribal populations will remain a mirage[4].

Additionally, our personal observations and document review indicated that TCU faculty members' characteristics (i.e., research credentials, qualifications, and skills) often differ from historically Black college/university and Hispanic serving institution faculty members. While many TCU faculty members may be well grounded in the Indigenous culture and milieu, they often lack basic doctoral level research training. This finding is consistent with previous reports which indicate that recruiting and retaining faculty with doctoral degrees to teach at TCUs is a long standing problem[34,35]. For example, the results of a survey of TCU faculty conducted in the spring and summer of 2003 indicated that only 11.3% had doctoral/professional degrees compared to 72.6% at public comprehensive universities[34]. Although doctoral training inadequately prepares early career investigators to engage in high quality research once they enter the academy, the basic fundamentals acquired through this experience helps to establish a research skill foundation from which to build upon through advanced research training. Because they have not completed a doctoral studies program related to rehabilitation or health, many of these individuals do not possess this needed foundation. Consequently research mentorship and other capacity building efforts at TCUs will need to focus, to a greater extent than at HBCUs and HSIs, on enhancing participant's community-based research skills fundamentals and building networks with seasoned investigators available to provide such mentorship and collaboration opportunities. These efforts are likely to require longer durations of mentorship in a specific area (i.e., research project development) to affect transformational change at these institutions.

Our research also shows that the community of practice was an important strategy for increasing participants' research skills and knowledge and providing them opportunities for networking and social support. Basically, a community of practice is a learning partnership among people who find it useful to learn from and with each other about a particular domain[4,36]. Communities of practice can also be used as an avenue for promoting team science, spurring innovation, helping early career investigators establish professional networks with research leaders and peers in the field, and socialize faculty scholars in other disciplines into the disability and health R&D culture and ethos.

Grant-writing and manuscript development skills training is an innovative strategy of building research capacity. This is especially true at TCUs where, as these results suggest, many faculty scholars may not have the experience, skills, and resilience needed to develop research grants and peer reviewed manuscripts. Webinars and workshops may be an important aspect of RCB in these areas. However, meaningful capacity building would require a mix of long-term (e.g., formal and informal mentoring) and short-term (e.g. webinars) approaches designed to adequately address multidimensional nature of grantsmanship and meet the unique needs of TCU faculty and students.

Adequate and appropriate infrastructure at TCUs is needed to facilitate research productivity and sustain an environment that supports research. For example, institutions of higher learning seeking to become research productive must have well-functioning research governance structures such as office of sponsored programs, competent institutional review boards (IRB), adequate physical facilities, research assistants, libraries, and access to up-to-date databases. Our findings indicate that the technical assistance and consulting that was provided resulted in the development of a strategic plan that provides a framework to guide research capacity building at the institution. More specifically, the plan contains a mission statement, research goal, objectives, resources, and plan management. The plan further provides TCU leaders (i.e., presidents) and administrators, and investigators the opportunity to align research activities and objectives with the needs of the local community. The model envisions technical assistance and consulting as an ongoing capacity building activity to ensure that the institution keeps abreast with policy shifts, technological advancements, and socioeconomic transformations, among others.

Effective strategies aimed at increasing research productivity should also include incentives such as release time for research, internal grant funding, campus grant writing support, research equipment, and research assistants[4]. Consistent with the theories of structural empowerment[37] and critical mass[38], incentives are a central component of IRCBIM. In this study, monetary incentives provided through IRCBIM, for example, were used to purchase research infrastructure resources (e.g., computers and computer software, library research materials, data management software), pay for tuition for fellows in the mentoring program, and travel to attend professional development conferences. The structural empowerment theorists posit that access to resources is a key empowerment ingredient[37,39].

The research team approach [4,40] was found to be beneficial for early career investigators juggling numerous responsibilities such as family, teaching, administration, community service, and attending graduate school. This approach enabled participants to share the responsibilities of the research project and hold each member accountable [4,40]. It also enabled participants to learn important research skills (e.g., negotiation, interpersonal communication), values, and attitudes from each other. As a result, the team conceptualized their research and started developing a research project that addressed tribal community needs. Scholars have indicated that teamwork in research also enables thorough methodological design, increases rigor, and encourages richer conceptual analysis and interpretation [4,40]. Teams can also increase morale, a greater sense of achievement, and emotional support in disappointments and successes.

A very vital but often overlooked aspect of eliminating disparities in AI/AN populations is assisting TCUs to use Indigenous knowledge to generate empirical evidence-based solutions to problems experienced on the reservations and surrounding communities. Indigenous knowledge, which is defined as the established knowledge of Indigenous nations, their worldviews, and the customs and traditions that direct them, has increasingly been acknowledged as providing a holistic approach to research that involves AI/ANs and other Indigenous populations [41-44]. Scholars have noted that Indigenous knowledge relies on people's experiences with their local ecosystems and does not isolate realities into disciplines such as rehabilitation, disability, health sciences, and social sciences. Instead, these systems are often looked at and addressed collectively [10,41,42]. Therefore, RCB approaches targeting TCUs should espouse a transdisciplinary approach and ensure that culture and belief systems determine the ways in which information is collected, analyzed, interpreted, and utilized to make a difference in the lives of researched populations [41,42,44].

The finding pointing to the limited disability, rehabilitation, or health academic program offerings at TCUs exemplifies a training pathway barrier for producing a critical mass of AI/AN scholars who can go on to receive doctoral degrees and advance research training. Considering the fact that the nation's future scientific research workforce is dependent on a diverse pool of highly-qualified researchers (e.g., AI/AN researchers), federal agencies such as NIDILRR, the Rehabilitation Services Administration (RSA), and NIH should develop a joint priority aimed at building new career pathway associate's, baccalaureate, masters, and doctoral degree disability and health training programs on AITCU campuses. Section 21 and supplemental funding resources could be devoted toward establishing this academic training pipeline to produce Native-American investigators and scholar practitioners. Such pathway infrastructure is practically non-existent on the campus of many AITCUs, and so there is little opportunity to groom and grow early career researchers.

Barriers stemming from the external environment such as negative perceptions and low expectations coupled with institutional barriers (e.g., heavy teaching load) and individual issues (e.g., scheduling conflicts) were identified as major R&D challenges at TCUs. These challenges limit both the capacity of TCUs to participate in high quality R&D and their ability to utilize research knowledge to bring about meaningful change in tribal communities. Holistic and innovative approaches that involve federal funding agencies, TCU leaders (i.e., presidents and provost), and Tribal communities would be more effective in addressing these challenges.

■ Conclusion

As reflected in Executive Order 13592, TCUs maintain, preserve, and restore Native languages and cultural traditions; offer a high quality college education; provide career and technical education, job training, and other career building programs; and often serve as anchors in some of the country's poorest and most remote areas [1,45,46]. According to Cunningham and Parker [47] TCUs are unique because they are truly community institutions, and they contribute to virtually every aspect of community life. Unfortunately, the important role TCUs play is undermined by inadequate research capacity. For this reason, building sustainable research capacity within TCUs is imperative to enable them to contribute to improved disability, health, and rehabilitation outcomes among tribal communities.

Federal research agencies (e.g., National Institute on Disability, Independent Living and Rehabilitation Research, National Institutes of Health, Agency for Healthcare Quality and Research, Office of Disability, Aging, and Long-Term Care Policy), whose role is to promote disability and health research and create a diversified scientific workforce that reflects the face of the U.S. are especially called upon to redouble their strategic policy efforts to ensure sustained comprehensive RCB efforts at TCUs[48]. Nonprofit organizations and commercial businesses can also play a complimentary role in assisting TCUs to strengthen research infrastructure and enhance their faculty scholars' methodological and grant writing skills. These agencies must partner with TCUs and their leaders (e.g., presidents) to ensure that RCB efforts not only address expressed needs but are also culturally appropriate. A close examination of research universities indicates that they did not grow over night. Similarly, building the capacity of TCUs and a critical mass of researchers at these institutions will require a mix of short-term and long-term strategies and commitments directed at building capacity at the individual, institutional and systems levels. Currently, IRCBIM appears to be a promising approach for building TCUs' research capacity. This model can be most successful when informed by structural empowerment and critical mass theories.

References

1. Brayboy BMJ, Fann AJ, Castagno AE, Solyom JA. *Postsecondary Education for American Indian and Alaska Natives: Higher Education for Nation Building and Self-Determination: ASHE Higher Education Report 37: 5*. John Wiley & Sons; 2012.

2. Schmidt JJ, Akande Y. Faculty perceptions of the first-generation student experience and programs at tribal colleges. *New Directions for Teaching and Learning*. 2011;2011(127):41-54.

3. Thunder DHHI. Fostering the Intellectual and Tribal Spirit: The Role of the Chief Academic Officer. *Tribal College*. 2015;26(4):34.

4. Manyibe EO, Moore CL, Aref F, Washington LA, Hunter T. An Emerging Conceptual Framework for Conducting Disability, Health, Independent Living, and Rehabilitation Research Mentorship and Training at Minority Serving Institutions. *Journal of Rehabilitation*. 2015;81(4):25-37.

5. Denzin NK. The new paradigm dialogs and qualitative inquiry. *International Journal of Qualitative Studies in Education*. 2008;21(4):315-325.

6. Lewis AN, Shamburger A, Head C, Armstrong AJ, West SL. Section 21 of the 1992 Rehabilitation Act Amendments and diversity articles. *Journal of Vocational Rehabilitation*. 2007;26(2):89-96.

7. Lewis A. Disability disparities: A beginning model. *Disability and rehabilitation*. 2009;31(14):1136-1143.

8. Koh HK, Graham G, Glied SA. Reducing racial and ethnic disparities: The action plan from the department of health and human services. *Health Affairs*. 2011;30(10):1822-1829.

9. Owusu-Ansah FE, Mji G. African indigenous knowledge and research. *African Journal of Disability*. 2013;2(1):5 pages.

10. Battiste MA, Henderson JY. *Protecting Indigenous knowledge and heritage: A global challenge*. Saskatoon: Purich; 2000.

11. Lewis A, Bethea J, Hurley J. Integrating cultural competency in rehabilitation curricula in the new millennium: keeping it simple. *Disability and rehabilitation*. 2009;31(14):1161-1169.

12. Couch S, Whalen T, Wall A, Mentzel T. Strategies for Increasing the Diversity of the Healthcare Workforce: Incorporating key stakeholders perspectives. *Journal of the Academy of Nutrition and Dietetics*. 2015;9(115):A55.

13. Crazy Bull C, Lindquist C, Gipp DM. An Act of Sovereignty: Governing Tribal Higher Education. *Tribal College Journal of American Indian Higher Education*. 2015;26(4):n4.

14. Moore CL, Wang N, Davis E, et al. Disability, health, independent living , and rehabilitation research leaders from traditionally underrepresented racial and ethnic populations: Career development and success factors. *The Journal of Rehabilitation*. 2015;81(1):19-32.

15. Braun KL, LaCounte C. The Historic and Ongoing Issue of Health Disparities Among Native Elders. *Generations*. 2014;38(4):60-69.

16. Weaver HN. Disability through a Native American lens: Examining influences of culture and colonization. *Journal of social work in disability & rehabilitation*. 2015;14(3-4):148-162.

17. Sarche M, Spicer P. Poverty and health disparities for American Indian and Alaska Native children. *Annals of the New York Academy of Sciences*. 2008;1136(1):126-136.

18. Frontera WR, Fuhrer MJ, Jette AM, et al. Rehabilitation medicine summit: Building research capacity. *The Journal of Spinal Cord Medicine*. 2006;29(1):70-81.

19. Cooke J. A framework to evaluate research capacity building in health care. *BMC Family Practice*. 2005;6(44).

20. National Institute on Disability and Rehabilitation Research [NIDRR]. Research capacity building summit: Critical conversations on repositioning NIDRR's investment for the future. 2011; Alexandria, VA, July 21-22.

21. Moore CL, Johnson JE, Manyibe EO, Washington A, Uchegbu NE, Eugene-Cross K. *Barriers to the participation of historically black colleges and universities in the federal disability and rehabilitation research and development enterprise: The researchers' perspective*. Oklahoma City, OK: Department of Rehabilitation Counseling and Disability Studies/ Langston University2012a.

22. Moore CL, Johnson JE, Manyibe EO, et al. Policy and systems issues limiting the participation of historically black colleges and universities in the federal disability research agenda. *Rehabilitation Research,* Policy, and Education. 2012b;26(1):67-82.

23. Simba D, Mukose A, Bazeyo W. Institutional capacity for health systems research in East and Central African Schools of Public Health: Strengthening human and financial resources. *Health Research Policy and Systems*. 2014;12(1):23.

24. Aref F. Dimensions of Community Capacity Building: A review of its implications in tourism development. *Journal of American Science*. 2009;5(8).

25. Bopp M, GermAnn K, Bopp J, Baugh Litt1ejohns L, Smith N. *Assessing community capacity for change*. 2000.

26. Maxwell G, Granlund M. How are conditions for participation expressed in education policy documents? A review of documents in Scotland and Sweden. *European Journal of Special Needs Education*. 2011;26(2):251-272.

27. Owen GT. Qualitative methods in higher education policy analysis: Using interviews and document analysis. *The Qualitative Report*. 2014;19(26):1.

28. Clark VLP, Creswell JW. Designing and conducting mixed methods research. Thousand Oaks, CA: Sage; 2011.

29. Creswell JW. *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications; 2013.

30. Vissak T. Recommendations for using the case study method in international business research. *The Qualitative Report*. 2010;15(2):370.

31. Zainal Z. Case study as a research method. *Jurnal Kemanusiaan*. 2007(9):1-6.

32. Beech BM, Calles-Escandon J, Hairston KG, Langdon SE, Latham-Sadler BA, Bell RA. Mentoring programs for underrepresented minority faculty in academic medical centers: A systematic review of the literature. *Academic medicine: Journal of the Association of American Medical Colleges*. Apr 2013;88(4):541-549.

33. Borders LD, Young JS, Wester KL, et al. Mentoring promotion/tenure-seeking faculty: Principles of good practice within a counselor education program. *Counselor Education and Supervision*. 2011;50(3):171-188.

34. Voorhees RA. Characteristics of tribal college and university faculty. *Denver, CO: AICF*. 2003.

35. Consortium AIHE. Tribal colleges: An introduction. 1999.

36. Wenger E, Trayner B, de Laat M. Promoting and assessing value creation in communities and networks: A conceptual framework. *The Netherlands: Ruud de Moor Centrum*. 2011.

37. Kanter RM. *Men and women of the corporation*. New York, NY: Basic Books, Inc; 1993.

38. Centola DM. Homophily, networks, and critical mass: Solving the start-up problem in large grop collective action. *Rationality and Society*. 2013;25(1):3-40.

39. Stewart JG, McNulty R, Griffin MTQ, Fitzpatrick JJ. Psychological empowerment and structural empowerment among nurse practitioners. *Journal of the American Academy of Nurse Practitioners*. 2010;22(1):27-34.

40. Holden L, Pager S, Golenko X, Ware RS, Weare R. Evaluating a team-based approach to research capacity building using a matched-pairs study design. *BMC Family Practice*. 2012;13(16):1-10.

41. Wulff D. Unquestioned answers: A review of research is ceremony: Indigenous research methods. *The Qualitative Report*. 2010;15(5):1290-1295.

42. Wilson S. Research is ceremony: Indigenous research methods. 2008.

43. Shreve B. On a Dream and a Prayer: The promise of world indigenous higher education. *Tribal College*. 2015;26(3):18.

44. Bull CC. Healing ourselves: culture and behavioral health at tribal colleges and universities. *Tribal College*. 2013;25(2):14.

45. Obama B. Executive Order 13592--Improving American Indian and Alaska Native Educational Opportunities and Strengthening Tribal Colleges and Universities. *Washington, DC: The White House, Office of the Press Secretary. Retrieved February*. 2011;10:2012.

46. Cunningham A, Park E, Engle J. Minority-Serving Institutions: Doing more with less. 2014. Retrieved from http://www.ihep.org/assets/files/publications/M-R/msis_doing_more_w-less_final_february_2014.pdf.

47. Cunningham AF, Parker C. Tribal colleges as community institutions and resources. *New Directions for Higher Education*. 1998;1998(102):45-56.

48. Moore CL, Aref F, Manyibe EO, Davis E. Minority entity disability, health, independent living, and rehabilitation research productivity facilitators a review and synthesis of the literature and policy. *Rehabilitation Counseling Bulletin*. 2016;59(2):94-107.

About The Authors

Corey L. Moore, RhD., serves as Principal Investigator and Research Director at the Langston University Rehabilitation Research and Training Center (LU-RRTC) on Research and Capacity Building for Minority Entities and Delta Sigma Theta Sorority, Inc. Distinguished Professor Endowed Chair at Langston University.

Edward O. Manyibe, PhD., is a Research Associate Professor and Capacity Building Director at the LU-RRTC on Research and Capacity Building for Minority Entities.

Perry Sanders, PhD., is a Research Analyst at the LU-RRTC on Research and Capacity Building for Minority Entities and member of the Choctaw Indian Nation.

Andre L. Washington, PhD., is a Research Analyst at the LU-RRTC on Research and Capacity Building for Minority Entities.

Fariborz Aref, PhD., is a Research Assistant Professor at the LU-RRTC on Research and Capacity Building for Minority Entities.

Cherjuan Robertson, B.A., is a LU-RRTC Predoctoral Research Fellow under the Center's Disability, Rehabilitation, and Health Research Career Pathway Program, and student in the Langston University Master's Degree in Rehabilitation Counseling Program.

Related RRTC Publications

The following other resources published by RRTC investigators may be of interest to readers of this Policy Research Brief.

Title: Federal Research Agency Policy and Systems and Disability and Health Scientific Workforce Diversity Development: A Key Informant Study

Abstract: The purpose of this research brief was to examine key informants' perspectives on ways in which federal agencies (i.e. National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), National Institutes of Health (NIH), Agency for Healthcare Quality and Research (AHQR), and Office of Disability, Aging, and Long-term Care) can assist the field in increasing the pool of seasoned minority investigators available to answer important questions, diversify and behavioral, social science, clinical, and biomedical scientific workforce, and mentor early career minority researchers.

Source: Moore, C. L., Wang, N., Davis, D. M., Aref, F., Manyibe, E. O., Washington, A. L., Johnson, J. E., Eugene-Cross, K., Muhammad, A., Jennings-Jones, D. (2016). Federal Research Agency Policy and Systems and Disability and Health Scientific Workforce Diversity Development: A Key Informant Study. *Langston University Rehabilitation Research and Training Center (RRTC) on Research and Capacity Building for Minority Entities Policy Research Brief*, 1(2), 1-16.

Title: Immigration Trends' Impacts on State Vocational Rehabilitation Agency Minority Application Rates: A National Time Series Forecast Model Demonstration Study

Abstract: The purpose of this policy research brief was to demonstrate and assess the efficacy of the Vector Autoregressive [VAR] model's and Multivariable Grey Model's [MGM]) ability to accurately predict immigration trends' impact on SVRA new application rates among minorities. The Multivariable Grey Model (MGM) was demonstrated to be superior to the Vector Autoregressive (VAR) model in predictive accuracy. The MGM generated three-year forecast projected an upward curve trend trajectory in the percentage of new Black or African American, American Indian or Alaskan Native, Asian, and Latino SVRA applicants for Fiscal Years (FYs) 2015 thru 2017. The model can be considered for use by SVRAs as a promising tool to help them develop new policy initiatives that respond rapidly to the needs of minority group members.

Source: Moore, C. L., Wang, N., Eugene-Cross, K., & Washington, A. L. (2016). Immigration trends' impacts on state vocational rehabilitation agency minority application rates: A national time series forecast model demonstration study. *Langston University Rehabilitation Research and Training Center (RRTC) on Research and Capacity Building for Minority Entities Policy Research Brief*. 1(1), 1-12.

Title: An Emerging Conceptual Framework for Conducting Disability, Health, Independent Living, and Rehabilitation Research Mentorship and Training at Minority Serving Institutions

Abstract: Research mentorship has long been considered a preeminent research capacity building (RCB) approach. However, existing mentorship models designed to improve the research skills (i.e., research methods and grant writing) of faculty scholars at United States minority serving institutions (i.e., historically Black colleges and universities, Hispanic serving institutions, and American Indian tribal colleges and universities) may be insufficient for building such capacities. This paper proposes an emerging conceptual framework for a new Peer-to-Peer Mentor Research Team Model (PPMRTM) designed to enhance the research skills of faculty scholars (herein referred to as fellows) and help to build the needed critical mass of researchers of color in the field of disability, health, independent living, and rehabilitation. A combination of Lippett's planned change theory and critical mass theory provided a useful framework to contextualize and support the design of this model. A set of recommended approaches that can be considered by federal research organizations (i.e., National Institute on Disability, Independent Living, and Rehabilitation Research, and National Institutes of Health), minority serving institutions, and researchers for assessment of the model and advancing the current state of science on minority serving institution RCB are presented.

Source: Manyibe, E. O., Moore, C. L., Aref, F., Washington, A. L., & Hunter, T. (2015). An emerging conceptual framework for conducting disability, health, independent living, and rehabilitation research mentorship and training at minority serving institutions. *Journal of Rehabilitation*, 81(4), 25-37.

Title: Disability, Health, Independent Living, and Rehabilitation Research Leaders from Traditionally Underrepresented Racial and Ethnic Populations: Career Development and Success Factors

Abstract: This article provides a comprehensive overview of select research skill and leadership building opportunities and research infrastructure systems that contribute to research leaders' from traditionally underrepresented racial and ethnic populations and communities (i.e., African Americans, Native Americans, Latinos, and Asians) in the field of disability, health, independent living, and rehabilitation career development and success. After a short presentation of the Social Change Model of Leadership (SCML) and issues relative to the current insufficient supply of such research leaders, the article shifts focus to a detailed synthesis of the available peer review and grey literature and policy on research career development and success factors. Critical contemporary issues affecting these target groups are discussed. Recommendations for advancing the current state-of-the-science for improving the research and leadership skills and career development outcomes for investigators from these populations, especially those with disabilities, are presented.

Source: Moore C. L., Wang N., Davis D., Aref, F., Manyibe E.O., Washington A.L., Johnson J., Cross K. E., Muhammad, A., & Quinn, J. (2015). Disability, health, independent living, and rehabilitation research leaders from traditionally underrepresented racial and ethnic populations: Career development and success factors, *Journal of Rehabilitation*, 81(1), 19-33.

Title: Minority Entity Disability, Health, Independent Living, and Rehabilitation Productivity Facilitators: A Review and Synthesis of the Literature and Policy

Abstract: The United States (U.S.) federal research agency (i.e., National Institute on Disability and Rehabilitation Research [NIDRR], National Institutes of Health [NIH]) sponsored research capacity building (RCB) efforts in the field of disability, health and rehabilitation have historically focused on individual research skill building activities (e.g., postdoctoral fellowships, advanced research methods and statistics courses, grant-writing workshops) as a main intervention to facilitate increased research productivity among investigators. However, investigators' personal intrinsic attributes as well as federal research agency policy and systems context are rarely considered as research productivity facilitators. On trend, minority entity (ME) RCB efforts tend to focus on addressing a single challenge, research skill building, while oftentimes neglecting the importance of intrinsic factors and federal agency policy and systems context. The purpose of this review was to synthesize the available peer review and grey literature, and policy on factors that facilitate investigators' research productivity. Recommendations for advancing the current state-of-the-science on research productivity facilitators are presented.

Source: Moore C. L., Aref F., Manyibe E. O., & Davis, E. (2016). Minority entity disability, health, independent living, and rehabilitation research productivity facilitators: A review and synthesis of the literature and policy. *Rehabilitation Counseling Bulletin*, 1-14. doi: 10.1177/0034355214568527.

Title: New Immigrating Racial and Ethnic Populations and "Trends Impacts" on State Vocational Rehabilitation Agencies

Abstract: Current migration trends and projections indicate that the United States (U.S.) population continues to increase and diversify. Consequently, the numbers of new citizens and legalized permanent residents with disabilities from traditionally underserved racial and ethnic populations are expected to grow at an accelerated rate-roughly 1 million new citizens and legal permanent residents annually. These unceasing migration patterns raise concerns about the capacity of state vocational rehabilitation agencies (SVRAs) across the U.S. to effectively respond to this growing crisis. There exists a serious need to forecast these trends' impacts on SVRA systems capacity to serve persons with disabilities from these new and emerging racial and ethnic populations and communities. The purpose of this review was to synthesize available peer reviewed literature and policy on multicultural migration trends and select SVRA systems forecast implications. A set of recommended approaches are presented that can be used to inform, guide, and forge future research directions.

Source: Cross K. E., Moore C. L., Manyibe E. O., Aref, F., Washington A. L., Umadjela, A., Sanders P. R., Payma H. S., Pandey, J., & Cyprian, D. (2015). New immigrating racial and ethnic populations and" trends impacts" on state vocational rehabilitation agencies, *Journal of Applied Rehabilitation Counseling*, 46(2), 20-33.

Title: Diffusion of Innovations Theory and Veterans of Color: A framework for Promoting the Adoption of Effective State Vocational Rehabilitation Agencies, American Indian Vocational Rehabilitation Programs, and Veterans Affairs-Vocational Rehabilitation & Employment Co-Service Practices in Vocational Rehabilitation

Abstract: This article discusses the proposition of the adoption of co-service practices between state vocational rehabilitation agencies (SVRAs), American Indian vocational rehabilitation programs (AIVRPs), and Veterans Affairs-Vocational Rehabilitation and Employment (VA-VR&E) programs as a means to increase employment outcomes for veterans of color (i.e., African Americans, Latinos, Native Americans, and Asians) with disabilities. Collaborative agency practices have been shown to contribute to successful outcomes. However, there is less discussion on how to implement and promote the adoption of co-service practices between SVRA, AIVRP and VA-VR&E agencies. The purpose of this article is to discuss the need for interagency collaborations and Diffusion of Innovations Theory as an approach for promoting the adoption of co-service practices across these agency contexts to increase successful employment services and outcomes for these veterans. A set of recommended approaches that can be considered for advancing the current state-of-the-science on improving SVRAs and VA-VR&E, and AIVRPs and VA-VR&E program co-service strategies for placing these veterans into competitive integrated employment are presented.

Source: Johnson, J. E., Moore, C. L., Wang, N., Sanders, P., & Sassin, J. (2016). Diffusion of innovations theory and veterans of color: A framework for promoting the adoption of effective state vocational rehabilitation agencies, American Indian vocational rehabilitation programs, and veterans affairs-vocational rehabilitation & employment co-service practices in vocational rehabilitation. *Journal of Applied Rehabilitation Counseling,* 47(1), 7-16.

Title: A National Benchmark Investigation of Return-to-Work Outcome Rates Between African American, Native American or Alaskan Native, Latino, Asian American or Pacific Islander, and Non-Latino White Veterans Served by State Vocational Rehabilitation Agencies: Application of Bootstrap Data Expansion

Abstract: Research examining the provision of effective state vocational rehabilitation agency (SVRA) sponsored services is pertinent to improving successful return-to-work outcomes among veterans of color (i.e., African Americans, Native Americans or Alaska Natives, Latinos, and Asian Americans or Pacific Islanders versus non-Latino Whites). To date, however, scant attention has been paid to examining such target group's outcome patterns. This study employed a stratified bootstrap data expansion approach to assess the relationship between race/ethnicity, gender, level of educational attainment at closure and return-to-work among veterans with a signed individualized plan for employment (IPE). National fiscal year (FY) 2013 Rehabilitation Services Administration (RSA)-911 case records (N =11,603) were extracted and re-sampled across multiple trials using bootstrap procedures to increase logistic regression model accuracy. The findings indicated that African American and female veterans were statistically significantly less likely to return-to-work compared to non-Latino White and female veterans, respectively. Return-to-work probabilities were 'poorest' for African American veterans followed by Native Americans or Alaska Natives, Asian Americans or Pacific Islanders, Latinos, and then non-Latino Whites. These findings warrant new service (e.g., greater SVRA and U.S. Department of Veterans Affairs' (VA) co-service provision) and policy initiatives.

Source: Moore, C. L., & Wang, N. (2016). A national benchmark investigation of return-to-work outcome rates between African American, Native American or Alaskan Native, Latino, Asian American or Pacific Islander, and Non-Latino White veterans served by state vocational rehabilitation agencies: Application of bootstrap data expansion. *Journal of Vocational Rehabilitation*, (47), 133-147.

Langston University Rehabilitation Research and
Training Center (RRTC) on Research and Capacity
Building for Minority Entities
6700 N. Martin Luther King Avenue
Oklahoma City, Oklahoma 73111

Citation

The recommended citation for this report is: Moore, C. L., Manyibe, E. O., Sanders, P., Washington, A. L., Aref, F. & Robertson, C. (2016). An evaluation of a disability and health institutional research capacity building and infrastructure model (IRCBIM) at a tribal college/university: A case study approach. *Langston University Rehabilitation Research and Training Center (RRTC) on Research and Capacity Building for Minority Entities Policy Research Brief*, 1 (3), 1-16.

Policy Research Brief is available online at www.langston.edu/capacitybuilding-rrtc. Additional copies and alternative formats of this Policy Research Brief can be obtained by writing to: Dr. Corey L. Moore, Principal Investigator and Research Director AND Delta Sigma Theta Sorority, Inc. Distinguished Professor Endowed Chair.

Langston University
Rehabilitation Research and Training Center (RRTC) on Research and Capacity Building for Minority Entities
6700 N. Martin Luther King Avenue / Oklahoma City, OK 73111
Email: clmoore@langston.edu / capacitybuildingrrtc@langston.edu

LU-RRTC is situated within the School of Education and Behavioral Science.