

Review of Research

What We Know and Where to Go: A Systematic Review of the Rural Student College and Career Readiness Literature and Future Directions for the Field

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College and career readiness has become a national education policy priority. With more than 9.3 million rural students in the United States, the college and career readiness of rural students is a warranted priority for rural education researchers. Using a combination of Conley's (2012) college and career readiness model, Perna's (2006) nested model of college choice, and Social Cognitive Career Theory (Lent et al., 2014), we systematically reviewed and analyzed the extant literature on rural students' college and career readiness. In addition to providing a comprehensive discussion of the prominent themes in the literature, we provide recommendations for future research on rural students' college and career readiness as well as changes to college and career readiness standards and practices that would better align with the strengths and needs of rural students, schools, and communities.

With an increasingly global economy and shifting workforce demands, ensuring that all students leave high school with the skills necessary to successfully enter college or the workforce has become a national education policy priority (Bragg & Taylor, 2014; Mishkind, 2014). Furthermore, prioritizing college and career readiness for all students is increasingly viewed as an issue of educational equity as students of color, students of lower socioeconomic status, and students with disabilities are far less likely to leave high school with the requisite skills for success in college or the workforce (Bragg & Taylor, 2014; Lombardi et al., 2013; Monahan et al., 2020). Reflecting this attention to college and career readiness, the National Rural Education Association (NREA) identified “college and career readiness/preparation for postsecondary experiences” as one of its ten rural education research priorities in its *Research Agenda 2016-2021* (Hill & Turney, 2016)

With more than 9.3 million rural school students in the United States (Showalter et al., 2019), the college and career readiness of rural students is a warranted priority for rural education researchers, as rural youth have assets and experience barriers to college and career readiness that differ significantly from their nonrural peers (Agger et al., 2018; Hutchins et al., 2012; Johnson, 2008; Slocum et al. 2020). As we approach the final year of NREA's 2016-2021 research agenda, it is imperative that we take stock of what we know about rural students' college and career readiness. Additionally, this

accounting must be comprehensive and critical, attending to the multitude of factors at play and noting the tension that is often inherent between strengthening rural communities and answering “the rallying cry of contemporary educational reform” that college and career readiness has become (Biddle & Hall, 2017, para. 8). This systematic literature review addresses these needs by providing a detailed and critical analysis of the prominent themes in the literature. This review also engages in a comprehensive discussion of what the extant literature can tell us about rural students' college and career readiness as well as where it falls short of this goal, thus yielding recommendations for the future of the field. We conclude with a discussion of how a place-based approach to college and career readiness could better serve rural students, schools, and communities.

Defining and Determining College and Career Readiness

Defining college and career readiness (CCR) is not a straightforward task due to both the wide variability in state-level definitions and conceptions of what it means for students to be “ready” for their chosen postsecondary paths and the evolution of terminology and aspects of readiness that are considered in the extant literature (Hooker & Brand, 2010; Monahan et al., 2020). Despite this variation, however, most conceptions of CCR recognize its multifaceted nature, encompassing academic

knowledge, awareness of the steps needed to enact postsecondary goals, communication and self-advocacy skills, and individual aspirations and perseverance (Hooker & Brand, 2010; Lombardi et al., 2013; Martinez et al., 2017; Mishkind, 2014; Monahan et al., 2020).

For this reason, we draw our definition of CCR from Conley (2012), who argues that “a student who is ready for college and career can qualify for and succeed in entry-level, credit-bearing college courses leading to a baccalaureate or certificate, or career pathway-oriented training programs without the need for remedial or developmental coursework” (p. 1). Recognizing students’ interests and aspirations will determine what skills they need to be ready for their next steps after high school, Conley’s CCR model determines each student’s readiness by the degree to which they have developed skills in four areas: key cognitive strategies, key content knowledge, key learning skills and techniques, and key transition knowledge and skills. Key cognitive strategies are the ways of thinking required by college-level work and key content knowledge is adequate knowledge in core subjects and technical knowledge and skills connected to career aspirations (Conley, 2012). Key learning skills and techniques consist of both the specific learning techniques, such as time management and study skills, as well as the ability of students to take ownership of their learning, requiring students to set goals, be persistent, and have self-efficacy. Finally, key transition knowledge and skills is information on how to successfully pursue a chosen postsecondary option, ranging from students’ aspirations and career awareness to their understanding of eligibility requirements for and cost associated with their postsecondary choice. We chose Conley’s model over other models and standards of readiness such as Tinto’s (2007), or Wiley, Wyatt, and Camara’s (2010) because Conley’s considers readiness for both college and career, and is comprehensive and multidimensional, addressing both cognitive and noncognitive skills (Lombardi et al., 2013).

Although definitions of CCR are typically multifaceted, determinations of students’ CCR in the literature are often based on their standardized test performance, high school curricular intensity (Bragg & Taylor, 2014), or rates of college enrollment and completion (Camara, 2013). However, using these outcomes measures to assess students’ CCR is problematic because there are a wide variety of factors that impact students’ completion of their

postsecondary goals (Camara, 2013) including their ability to afford advanced education or vocational training, personal obligations (such as caring for a sick family member) that may impede their progress, or choosing to pursue a different career path that may require less formal education or training. However, students’ preparation for their next steps after high school is integral to their ability to complete their postsecondary goals, and postsecondary enrollment and completion are prominently featured in the extant literature (e.g., Ali & Menke, 2014; Howley et al., 2014; Koricich et al., 2018; Mykerezi et al., 2014; Wilkinson & Pearson, 2015). For these reasons, we chose to include this body of research in our review of the literature, recognizing that while there are additional factors at play, these measures do help us construct the story of rural students’ CCR.

Theoretical Framework

To identify relevant literature, as well as to frame and bound our critical analysis of rural students’ CCR, we employed a theoretical framework that utilized Conley’s (2012) aforementioned CCR model alongside Perna’s (2006) nested model of college choice and Social Cognitive Career Theory (SCCT; Lent et al., 1994). While Conley’s CCR model is comprehensive and multifaceted, it focuses primarily on factors related to students’ and schools’ roles. As it is a model used by schools to help ensure their students are prepared for their postsecondary paths, this focus makes sense, but Conley explicitly acknowledges that the model does not attend to factors integral to students’ CCR, including parent support, peer influence, and the ability to afford college (Conley, 2012).

For this reason, we chose to also include Perna’s (2006) nested model of college choice, which contains a core grounded in human capital investment theory that is nested within four broader layers of context: students’ habitus, school and community context, higher education context, and the broader social, economic, and policy context. Using both an economic model of human capital as well as sociological concepts such as cultural and social capital, Perna’s model encourages an exploration of why students choose to enroll in college that considers both individual and structural considerations. Additionally, the model’s emphasis on the interplay between various levels of influence encourages the interpretation of students’ college decisions through an ecological lens, often used in

the literature on rural students' postsecondary choices and outcomes (see, for example, Agger et al., 2018; Crockett, Shanahan, & Jackson-Newsom, 2000; Demi et al., 2010; Wilkenson & Pearson, 2015). Due to the interconnected and overlapping nature of college readiness and the decision to attend college – thereby making Perna's model a better fit for our work than a less specific ecological lens (e.g., Bronfenbrenner, 1992) – we draw upon this model for our work, extending its use to consider factors related to college readiness more broadly, rather than solely in the context of a student's ultimate choice to attend college.

Despite these strengths, Perna's model inadequately attends to factors related to work/career so we also drew upon social cognitive career theory (SCCT; Lent et al., 1994) to frame our study. As "perhaps the most prominent framework delineating the key factors and processes by which individuals develop and pursue post-secondary goals" (Irvin et al., 2012, p. 72), SCCT is based on Bandura's social cognitive theory in which three components (personal attributes, external/environmental factors, and overt behavior) interact bi-directionally to influence a student's career choice (Lent et al., 1994). In this way, SCCT "addresses the intersection of culture, gender, genetic endowment, social context, life events, and career-related choices, as well as the connection of self-efficacy, personal goals, and outcome expectations that may influence career choice" (Griffin et al., 2011, p. 173). SCCT is integral to the framing of our study both because it focuses on career choice and because it attends explicitly to factors – such as self-efficacy – found in the rural student CCR literature. Although we include SCCT in our framework as an intentional effort to not prioritize college enrollment over vocational training or immediate entry into the workforce after high school, literature on rural students' CCR (and the policies and/or practices this literature examines) often do prioritize college over career readiness (Budge et al., 2019; Zuckerman et al., 2018). As such, while we include articles that explicitly discuss career readiness in our review when possible, our discussion of the findings is representational of the body as a whole, thus more attention is given to college-oriented findings than career-oriented ones.

Taken together, this theoretical frame encouraged a comprehensive literature review, attending to literature on rural student readiness for both college and work across multiple levels of factors including student characteristics (e.g.,

aspiration and self-efficacy), family characteristics (e.g., parental support for postsecondary goals and family socioeconomic status), school factors (e.g., curriculum and teacher expectations), and community factors (e.g., employment opportunities and community-school relationships).

Aims and Importance for the Field

Throughout this review of the extant literature and our discussion of our findings, we pay careful attention to avoid a deficit perspective in this work, highlighting the assets of rural students while also attending to the very real obstacles that many rural students face. Additionally, we examine research conducted in a wide range of rural communities with diverse student populations, geographies, and employment opportunities, explicitly noting these differences throughout the piece. By attending to these issues, we hope to encourage a complex and rich view of rurality that pushes back on the perceived homogeneity of rural people and places, as well as the "rural school problem" narrative that has been over a century in the making and is still prevalent in education research (Biddle & Azano, 2016).

Our work advances the field of rural education research in three ways. First, we provide a comprehensive review of the rural student CCR literature which, to our knowledge, is the first review of its kind on this topic. Second, we discuss the themes and key findings in the extant literature, drawing on this body of work as a whole in order to provide the reader with an inclusive understanding of what we know about the factors related to rural students' CCR as well as the gaps that remain in our understanding of this topic (Kelley, 2011). Finally, we provide recommendations for future research and for changes to CCR standards and practices that would better serve rural students, schools, and communities. It is our hope that these recommendations shape policy and practice, support future researchers' efforts to provide necessary and novel contributions to the field, and assist rural-serving organizations such as NREA in establishing future research priorities.

Methods

To conduct our search for literature on rural student CCR, we searched the following databases through EBSCOhost: Academic Search Complete; Academic Search Premier; Education Full Text;

Education Research Complete; ERIC; APA PsycInfo; SocINDEX with Full Text; Sociological Collection; Vocational and Career Collection; and Vocational Studies Premier. Our searches used the search term “rural” in conjunction with search terms relevant to college and career readiness such as: college and career readiness; college preparation; career readiness; postsecondary; and aspiration. In order to foreground rurality in our search processes, we included the term “rural” in each of our searches and limited our findings to results that included “rural” in, at a minimum, the abstract.

Using a field-emergent perspective (Miller, 2011), search terms related to CCR were chosen due to their presence in the theoretical framework guiding the study as well as through reviews of the research generated through our search processes. Therefore, search term selection was an iterative process, with an initial list of search terms generated by our foundational framework and additional search terms added as we reviewed the literature generated by our searches in order to address areas of relevant literature not captured by our initial list. Through this process, we ensured that our searches were comprehensive in nature and generated literature that reflected our theoretical framework as well as prominent topics in the area of rural student CCR. In each search, we limited the results to sources published no earlier than 2000 and focused on the United States context. We chose these parameters in order to balance our desire to provide a review of the literature that was as comprehensive as possible while ensuring the research used in the review was relevant to the current context of American students’ CCR, particularly the increased attention to postsecondary success for all students in federal legislation since the early 2000s (Monahan et al., 2020).

To supplement findings from these databases, we also conducted searches using Google Scholar, conducted journal-specific searches of journals with a rural education focus including *The Rural Educator* and *Journal of Research in Rural Education*, and engaged in snowball referencing (Miller, 2011) in which we used the reference lists of existing sources to generate additional sources for review. We engaged in these practices until reaching saturation, the point at which we did not reasonably believe that additional searches would contribute to our understanding of the extant literature (Schutz, 2006).

We carefully documented each search, noting the databases and search terms used as well as the total

number of results generated by the search and the total number of results that were selected for inclusion in the literature review after removal of sources already found through a prior search as well as sources that were generated by the search, but did not actually address rural student CCR. Not only did this documentation serve as an audit trail, thereby ensuring an organized search process (Goldman & Schmalz, 2004) and increasing the reliability of our methods (Holley & Harris, 2019), it also provided support for our conclusion that we had reached saturation as searches returned few or no articles not captured by prior searches. In all, we included 111 sources in our review.

To aid in organization and analysis of the literature, we created a spreadsheet that served as a review matrix (Garrard, 2017), documenting pertinent information of each source generated by our search process including each source’s citation, method and sample, and key findings. We then used this matrix as we engaged in open coding (Saldaña, 2016) of each source, documenting these open codes in a separate column of the spreadsheet. After this process, we discussed these codes and separately performed a round of focused coding (Saldaña, 2016), drawing on our theoretical framework for organization and noting the major themes that emerged from the open coding process. We then compared these focused codes and calculated an intercoder agreement of 83%, which, after thorough discussion of discrepancies (Saldaña, 2016), was further improved to 100%. These focused codes became the foundation for the organization of our findings section. Namely, we categorize the prominent themes found in the rural student CCR literature into four main areas: student factors, family factors, school factors, and community factors. (See Table 1.) This organization is further supported by Perna’s nested model of college choice (2006), which was used to guide our literature review and an ecological approach to development (Bronfenbrenner, 1992), used prominently in the literature we reviewed.

Findings

Student Factors

We begin our analysis with a discussion of student factors that are related to rural youths’ CCR. Findings in this section connect to the core and first layer of Perna’s (2006) nested model of college

Table 1
Additional Information on Data Analysis Process

Sample Open Codes	Focused Codes and Resulting Themes	Number of Articles Primarily Associated with Focused Code
postsecondary aspirations; self-efficacy; gender	student factors	54
parental education; parental expectations; family support	family factors	4
advanced courses; teacher-student relationship; CCR programming	school factors	43
employment opportunities; community demographics	community factors	10

choice, as they represent the human capital calculus rural students must undergo when deciding whether to go to college and how students' habitus affects their CCR. They also connect to students' personal attributes and overt behaviors components of SCCT related to students' career-related choices (Lent et al., 1994).

Aspirations. Much of the literature concerning CCR focuses on the aspirations of rural youth to attend a postsecondary institution. One of the first studies that tracked rural student aspirations to higher education came from Hu's (2003) analysis of the National Education Longitudinal Study of 1988. Hu found that rural students were less likely than nonrural peers to aspire to any form of postsecondary education (28% rural, 31% urban, and 33% suburban), less likely to enroll in any four-year form of postsecondary education (56% rural, 64% urban, and 64% suburban), and slightly more likely to enroll in a two-year postsecondary institution (33% rural, 27% urban, and 28% suburban). Since then, however, several national and regional studies have shown that rural students in the United States aspire to postsecondary institutions at rates similar to or higher than their nonrural peers (Agger et al., 2018; Howley, 2006; Petrin et al., 2011). For example, Howley's (2006) analysis from the Panel Study of Income Dynamics found that 47% of youth from rural areas aspired to complete a bachelor's degree, while nonrural youth aspired at a rate of 37%.

Some differences in aspirations exist by gender among national studies of rural education (Agger et al., 2018; Petrin et al., 2011). For example, male aspirations for postsecondary education were negatively correlated with their perception of the job market within the local community; if male students believed that the local job market could provide employment, they tended to not desire postsecondary

education. On the other hand, female rural youth who were rated by their teachers as being academically competent tended to have a positive perception of their rural environment and were more likely to indicate their desire to remain in their hometown after high school graduation, or to return after completing college (Petrin et al., 2011).

Academic readiness. Another factor in understanding rural student CCR is academic readiness. Several studies have attempted to understand how rural students perform on academic assessments when compared to their nonrural peers. Williams (2005) found that a gap existed between rural youth math achievement on the Programme in International Student Assessment (PISA), which is an international standardized test, when compared to their nonrural peers. However, these differences disappeared when controlling for socioeconomic status (SES). Conversely, Provasnik and colleagues (2007) found that twelfth-grade rural student performance on the National Assessment of Educational Progress (NAEP) in math was below that of suburban students, but the analysis was not controlled for socioeconomic status. Another study by Mykerezzi and colleagues (2014) found academic achievement differs between rural and nonrural youth in elementary school. This gap continues through high school and postsecondary education. Unlike the Williams (2005) piece, the authors make no mention of controlling for SES. When adjusted for SES, it appears that rural students perform at similar levels as their nonrural peers (Williams, 2005). However, there is also considerable heterogeneity by students' race/ethnicity with slower academic growth for rural Black, Hispanic, and Native American students compared to their nonrural peers (Johnson et al., 2020). Additionally, while standardized test scores are often used to assess students' academic readiness,

high school grade point average may be a better indicator for rural students' CCR as performance on standardized tests does not predict postsecondary success as effectively as high school grade point average among rural students (Hodara & Lewis, 2017).

Self-efficacy. Self-efficacy is a measure of one's confidence in their ability to accomplish a goal or complete a task (Ali & Menke, 2014). As self-efficacy has been linked to students' postsecondary choices (Griffin et al., 2011), self-efficacy could be an area that is crucial to understanding why suburban and urban students are 1.5 times more likely to enroll in college than rural students (Wells et al., 2019). After all, Prins and Kassab (2017) found that rural students tend to perceive that postsecondary education would be unattainable for them. Furthermore, Ali & McWhirter (2006) found that rural students' self-efficacy towards educational goals predicted their career pathway through postsecondary education; if rural students believed that they could complete a postsecondary education, they were likely to opt for it over directly entering the workforce.

Demographics such as age, race, and socioeconomic status impact rural students' self-efficacy. Some research has found that rural students tend to view fewer barriers to higher education as they got older (Ali & Menke, 2014; Irvin et al., 2012), but not if a student identifies as Hispanic, does not speak English as a first language, has parents with lower postsecondary education attainment, or if their family is economically disadvantaged (Irvin et al., 2012). Contrary to Irvin and colleagues' findings, Ali & Menke (2014) found that rural Latino youth may have higher self-efficacy beliefs than their white peers, though White students were underrepresented in the sample of the study. Finally, students' beliefs about the affordability of college impacts their college-going self-efficacy (Gibbons & Borders, 2010). There is evidence that rural students are underrepresented in FAFSA (Free Application for Federal Student Aid) applications compared to their nonrural counterparts (Prins & Kassab, 2017), which is problematic because all U.S. residents must fill out the FAFSA in order to access any federal aid for postsecondary education and many states and universities use the FAFSA to determine eligibility for other need based aid (U.S. Department of Education, n.d.). The relationship between FAFSA completion and students' self-efficacy is bi-

directional. On one hand, some students may not believe they are able to afford college, therefore they do not fill out the FAFSA. On the other hand, failure to complete FAFSA may impact their assessment of the affordability of college and impact their self-efficacy to attend college and, as a result, their postsecondary decisions. Rurality itself is also a factor that can affect self-efficacy. Individuals who live in rural areas are typically geographically further from an institution of higher education than those who are nonrural (Brown and Schafft, 2018), complicating students' ability to visit college campuses and/or be exposed to a college culture. Therefore, geographic distance is likely a factor in the self-efficacy of rural students compared to their nonrural counterparts.

Outcome measures: College enrollment and completion. As previously discussed, rural students' CCR is often assessed by whether or not they successfully executed their postsecondary choices; these retrospective assessments often employ outcome measures such as college enrollment and completion. Although researchers have problematized the use of these measures as the sole assessment of students' CCR (Camara, 2013), they remain prominent in the extant literature and do provide some insight into the broad picture of rural students' CCR. As such, we conclude our discussion of student factors related to rural students' CCR with a discussion of these measures.

Rural student enroll in and complete college at rates similar to urban students, but below those of suburban students (Howley et al., 2014; National Student Clearinghouse Research Center, 2018; Provasnik, 2007). Despite lower rates of enrollment when compared to suburban peers, most rural students do complete some form of postsecondary education that results in a credential: 28% of rural students complete a bachelor's degree, 21% earn an associate degree or certificate, and 6% complete a master's, doctoral, or professional degree within 10 years of graduating high school (Schmitt-Wilson et al., 2018). Meanwhile, Petcu and colleagues' (2017) study of longitudinal data found that attending a rural high school predicted the completion of a two-year postsecondary program, with fewer students with disabilities from rural areas completing a four-year degree. While rural students lag behind their suburban peers in graduating from college in six years, they could be taking longer to complete, especially because rural youth are more likely than

their nonrural peers to work at the same time that they are enrolled in a postsecondary institution (Johnson, 2008). Additionally, determining college completion rates for rural students is further complicated by the use of different definitions of rurality in the extant literature (Manly et al., 2019). Lastly, one area of the rural college completion literature that is emerging is completion rates of rural LGBTQ youth. One study found that men who identified as LGBTQ completed college at a higher rate than their heterosexual peers. The same was not true, however, for rural women who identified as LGBTQ, who were less likely to complete college than their heterosexual female peers (Wilkinson & Pearson, 2015). More work is needed to better understand college completion for rural LGBTQ youth.

Family Factors

We continue our analysis with a discussion of family factors that are related to rural youths' CCR. Findings in this section connect to the habitus layer of Perna's (2006) nested model of college choice and to the external/environmental factors of SCCT (Lent et al., 1994).

Parental support and expectations. Rural parents play a crucial role in their students' college and career readiness, with rural students more likely than nonrural students to report being influenced by their parents when making their postsecondary decisions (Gándara et al., 2001). One way that rural parents influence their children's postsecondary choices is by communicating the expectations they have for them. Using longitudinal data of nearly 5,000 youth who enrolled or completed college, Byun, Irvin, and Meece (2012) found no observable differences in parental educational expectations between rural students and their suburban or urban counterparts. Byun and colleagues' quantitative analysis of a national sample of students aligns with qualitative studies that examined parental educational expectations for Alaska Native students (Doyle et al., 2009), African American students in the South (Means et al., 2016), and White, Appalachian students whose parents did not attend college (Slocum et al., 2020), all of which found that students believed their parents had high educational expectations for them and felt supported by them in their pursuit of higher education.

The attention to the expectations that parents have for their children is certainly warranted as rural students' educational aspirations are shaped by their parents' educational expectations (Agger et al., 2018; Smith, 2007) with work-bound rural youth more likely to report lower parental expectations for completing college than college-bound rural youth (Hutchins et al., 2012). Additionally, parental higher educational expectations (or students' perceptions that their parents hold higher educational expectations for them) increase the likelihood of rural students' college enrollment (Demi et al., 2010) and bachelor's degree completion (Schmitt-Wilson et al., 2018).

While a close and supportive relationship with parents can increase students' educational aspirations, college enrollment, and educational attainment, strong bonds to family can complicate students' decisions to pursue higher education, particularly for rural students who lack geographical proximity to institutions of higher education. For example, Demi and colleagues (2010) found that a strong bond with parents was not a strong predictor of students' college enrollment and posit that one reason for this is because students' desire to stay close to home conflicts with the need to leave home for college. However, this study also found that students ultimately were more likely to enroll in college if they thought their parents would be disappointed by their decision not to attend college. This conflict between staying close to home and leaving for college is felt not only by students, but also by their parents. Slocum, Weekley, and Sherfinski (2020) found that, while complicated by their desire for their children to remain connected to them and to their community, Appalachian parents ultimately desired for their children to attend college, in large part due to their belief that a college degree would help their children achieve financial stability.

Expecting their children to pursue postsecondary education and providing encouragement for this choice is often not enough for parents to help their students enact these postsecondary choices, however. Numerous studies (Doyle et al., 2009; Grant, 2018; Means et al., 2016; Roberts, 2019; Slocum et al., 2020) have found that, despite being supportive of students' decisions to attend college or vocational training after high school, some rural parents lack the knowledge of how to guide their children through the processes needed to reach their postsecondary goals. However, some rural parents are able to tap into strong social networks in their extended family

and/or community to better understand how to help their children (Slocum et al., 2020).

Family socioeconomic status. In addition to parents' educational expectations for their children, parent income or socioeconomic status (SES) has received significant attention in the literature on rural students' CCR. Family SES is associated with rural students' plans to pursue work versus college (Hutchins et al., 2012), rural students' college attendance patterns, including entry to and continuous enrollment in postsecondary education (Byun et al., 2015), and what type of institution to attend (Koricich et al., 2018).

The role that family SES plays in students' postsecondary plans is complex. For example, Demi, Coleman-Jensen, and Snyder (2010) found that rural students' perception of their family income has a significant association with students' college enrollment. However, rural youths' perception of family income did not directly affect enrollment, but had a mediating relationship with enrollment through an effect on other factors such as students' relationships with their parents, their grades, and their educational aspirations. Additionally, research has demonstrated that the impact of socioeconomic status on student's postsecondary aspirations differs for rural students compared to their nonrural peers. For example, Koricich and colleagues (2018) found that socioeconomic status had a strong, statistically significant relationship with postsecondary education decisions, both whether to enroll in any form of higher education as well as what type of higher education institution students enrolled in. However, they also found that the impact of having a family with higher socioeconomic status was less pronounced for rural students than for urban students in terms of attending a more selective institution. Their findings underscore the difference between rural and urban students' postsecondary choices, even for students from more affluent families.

Although there has been an increase in lower middle class rural high school students who plan to attend college (Legutko, 2008), rural families' financial situations, or students' perceptions of them, remain a barrier to adequate CCR. For some students, this barrier presents itself during high school when students are unable to participate in college and career preparation activities. For example, Piontek and colleagues (2016) found that families' abilities to afford dual enrollment courses were a barrier to students' participation in these programs. For other

students, this barrier presents itself as students are choosing what to do after high school. Higher family economic hardship was associated with an increase in students' perceived educational barriers (Irvin et al., 2012), ranging from perceived barriers to entering community college (Scott et al., 2015) to graduate degrees (Molefe et al., 2017).

Parental education levels. Finally, the third family factor that is prominent in the rural student CCR literature is parental educational levels. Overall, rural students are more likely than their nonrural peers to have parents with a high school degree as their highest level of education (Prins & Kassab, 2017; Provasnik et al., 2007) and this trend also holds true for rural youth who aspire to continue their education in some way after high school. This rural-urban disparity was true for rural students who intended to pursue certificates and associate's degrees, but was especially pronounced for those who intended to pursue a bachelor's degree (Prins & Kassab, 2017). Parental education levels are associated with students' educational aspirations, with students whose parents have higher levels of formal education reporting higher educational aspirations for themselves (Demi et al., 2010; Smith, 2007). However, there has been an increase in rural students who aspire to be the first in their families to go to college. Legutko (2008) found that there was an increase in rural students whose parents did not have any postsecondary education who reported during their senior year of high school that they planned to attend college in 2005 compared to rural seniors in high school a decade earlier. Additionally, some research has demonstrated the ways in which the impact of parent education levels can be mitigated by high school programming. For example, while Smith (2007) found that parental education levels strongly predicted students' educational aspirations, participation in dual enrollment programs were a stronger predictor.

Despite these encouraging findings, parental education remains a significant factor in students' perceptions of their ability to enroll in college and their eventual enrollment decisions. Irvin, Byun, Meece, Farmer, and Hutchins (2012) found that lower parental education was associated with an increase in students' perceived educational barriers. Moreover, Prins and Kassab (2017) hypothesized that lower parental educational attainment could be a factor in lower rates of FAFSA completion in rural areas which, as previously discussed, can add to

students' perceived barriers of attending college. These findings align with other research that show a positive relationship between level of parental education and enrollment in a four-year college rather than enrollment in a two-year college or no college enrollment (Byun et al., 2012; Byun et al., 2017; Demi et al., 2010). Taken together, the extant literature demonstrates the unique challenges faced by rural students whose parents did not attend college.

School Factors

In addition to students' families, their schools strongly influence rural students' CCR in a number of ways. Findings in this section connect to the school and community context and social, economic, and policy context layers of Perna's (2006) nested model of college choice and to the external/environmental factors of SCCT (Lent et al., 1994).

Curriculum and course offerings.

Overwhelmingly, the majority of the research related to CCR focuses on issues of curriculum and course offerings. Of primary concern in much of this extant literature is the rigor of the curriculum. Rigor is not a concern limited to rural schools: 29% of all first-year students at 4-year colleges and 40% of first-year students at community colleges required remediation and were enrolled in at least one developmental course in reading, writing, or math (National Center for Education Statistics, 2011). However, the rigor of the curriculum, also known as curriculum intensity, is a particular concern for rural students, who, overall, attend schools with significantly lower curriculum intensity than their suburban or urban peers (Byun et al., 2012). Attending schools with lower curriculum intensity is problematic as curriculum intensity is predictive of the completion of a bachelor's degree (Byun et al., 2012; Byun et al., 2017). Additionally, students' participation¹ in advanced courses predict educational achievement and postsecondary aspirations for students in both high- and low-poverty rural communities (Irvin, Meece, et al., 2011).

¹ We recognize the lack of a student's participation in an advanced course could be due to student choice or lack of course offering. Unless research explicitly states that an advanced course was available to a student, but they chose not to take it, we include these findings in the school section of this paper

In discussions of curriculum intensity, particular attention is often given to math course offerings as credits in high level math courses are highly associated with college readiness (Cha, 2015). In their study of rural, urban, and suburban students, Irvin and colleagues (2017) found a complex picture of advanced math taking. Briefly, they found that rural students take advanced math classes at lower rates than their suburban peers, but that rural and suburban students do not significantly differ in their math achievement in tenth and twelfth grade. In other words, rural and suburban students achieve at comparable levels in math, but rural students are less likely to take advanced math classes. Additionally, they found a rural-urban gap in advanced math taking that, when prior math achievement is accounted for, rural students take advanced math courses at significantly lower rates. This finding aligns with prior findings that students in urban and suburban areas are more likely to take high level math courses than students in rural areas (Cha, 2015).

To increase students' CCR, some rural schools offer advanced placement (AP) classes or dual enrollment classes in which students earn college credit while in high school. AP courses are offered by The College Board (2020) to give high school students the opportunity to receive college credit for their courses. AP courses are not widely available in rural areas of the United States, however. Studies have shown that both rural students and minorities are underrepresented among those who take AP courses every year (Klopfenstein, 2004; Zarate & Pachon, 2006). In fact, in nearly half of all rural districts in the United States, zero students are enrolled in an AP course (Gagnon & Mattingly, 2015; 2016). AP course availability is expanding, but rural students are still not offered AP courses as frequently as their nonrural peers (Education Commission of the States, 2017).

There has been an increase in dual enrollment programs nationwide (Gewertz, 2016), stemming in large part from the increased emphasis on CCR (Piontek et al., 2016), and participation can provide a number of benefits for students in rural schools including forming connections with and acting as

because, broadly speaking, the majority of this research focuses on curricular offerings rather than students' choices to take them. This decision is further supported by the research included in this paper and elsewhere that points to limited curricular offerings in rural schools.

points of entry into community colleges (Rockey, 2019; Strawn, 2019), accessing courses that will prepare them for their postsecondary education or vocational paths (Holian et al., 2014), and increased educational aspirations (Smith, 2007).

However, rural students' participation in and completion of dual enrollment varies widely (Lochmiller et al., 2016; Pierson et al., 2017). One factor in this variation is the implementation of dual enrollment policies, which varies greatly based on state- and local-level contexts and can significantly impact their role in students' postsecondary preparation. (Allen & Roberts, 2017, 2019; Mokher et al., 2019; Piontek et al, 2016). Formal CCR programs and initiatives that increase AP and dual enrollment course offerings in rural schools can increase students' outcomes (including ACT scores and college enrollment and persistence; Mokher et al., 2019), but face barriers shaped by their rural context including scheduling constraints, limited availability of high school teachers with appropriate credentials to teach the courses, and financial burdens on students and families (Allen & Roberts, 2017, 2019; Mokher et al., 2019; Piontek et al, 2016.) Finally, implementation of dual enrollment programs in rural schools can create unintended consequences that negatively impact other efforts to increase rural students' CCR, including AP course offerings (Hornbeck & Malin, 2019) or availability of school counselors to assist students with postsecondary planning (Roberts, 2019).

Adding advanced courses, including AP and dual enrollment courses, provides opportunities for students to be challenged by their coursework in high school and increase their CCR. Alternatively, to increase students' readiness for college-level coursework or vocational training tests, some states have encouraged high schools to offer transition courses in math and English. These courses are offered during the school year to students who are at risk of being placed in remedial courses in college or vocational training programs. Because these courses do not count toward the students' postsecondary graduation requirements, the need to take remedial courses in college increase both the time and cost of earning a postsecondary degree or certificate. An analysis of one transition English course in California found that the state's rural schools were less likely to adopt this course than city, suburban, and town schools with only 40% of rural schools offering this transition course compared to 60% of suburban schools. Additionally, small schools were far less

likely to offer this course: 11 % of high schools with fewer than 200 students offered it compared to 42% of schools with 400-599 students (Chen-Gaddini et al., 2019). This finding aligns with other research that has found that rural school size impacts curricular offerings (Nitta et al., 2010).

Finally, of concern for many educational stakeholders is the adherence of curriculum to state CCR standards. Creating partnerships between K-12 and higher education has been found to be one strategy to help rural schools implement these standards (Alford et al., 2014) and support rural students' CCR (Ohlson et al., 2020), however these types of collaborations may not address the policy environments unique to rural schools. Edgerton and Desimone's (2018) survey of teachers across multiple states found that the policy environments of rural teachers were significantly different than those of urban and suburban teachers in the same state. Rural teachers perceived their policy environment to be weaker than suburban and urban teachers, reported increased difficulty to make policy change in their rural districts, and reported teaching significantly less of the content emphasized by CCR standards than their urban and suburban counterparts. These findings provide support for the impact of the broader policy environment of rural schools on the implementation of state-mandated CCR standards and should not be ignored when examining the role that curriculum plays in rural students' CCR.

School personnel's support for postsecondary planning. For many rural students, one advantage of attending a rural school is the potential to form close relationships with their teachers. Teachers can bolster students' CCR not only by effectively delivering course content, but also by forming relationships with their students through which they can provide support for and information on students' postsecondary options. Research has found that teacher support influences rural students' motivation (Hardré et al., 2009) and postsecondary aspirations (Chambers et al., 2019). Furthermore, rural schools' smaller class sizes, one factor in the ability for students to form close relationships with teachers, are positively associated with rural students' educational aspirations (Irvin, Meece, et al., 2011).

In addition to teachers, school counselors are vital to rural students' CCR. School counselors are often tasked with providing college and career counseling to students or implementing formal CCR curricula (Arrastia-Chisholm et al., 2017). They,

along with teachers, can encourage students to pursue certain postsecondary options; Tieken (2016) found that rural teachers and counselors tend to encourage students to seek a degree in fields that will result in a job quickly after completing a bachelor's degree.

While much of the research has focused on the support students receive from their classroom teachers and school counselors, there is some evidence in the extant literature for the role other school staff can play in students' postsecondary aspirations. For example, Means and colleagues (2016) found that rural African American high school students were encouraged to pursue college by a wide range of school personnel including school counselors, teachers, and coaches. Staff and students in the study attributed this wide-ranging influence to the school's small size and the "one big family" (p. 558) atmosphere present in the school. Additionally, relationships with school staff may be a particularly important source of information for students with disabilities as one study found that students with disabilities relied more on school staff rather than college websites and brochures or college visits for postsecondary information (Weiss et al., 2012).

However, while support from school personnel plays an integral role in increasing students' academic motivation and postsecondary aspirations, this support is often inadequate for helping students enact the necessary steps for achieving their postsecondary goals (Demi et al., 2010; Doyle et al., 2009; Means et al., 2016; Roberts, 2019). As such, we next turn to the role of rural schools' programming related to college and career planning.

Provision of college and career programming.

In addition to support provided by teachers and other high school personnel, research has examined a broader range of postsecondary preparation activities such as college and career fairs, visits to college campuses and vocational training centers, or college and career counseling sessions with school counselors. While students' participation in these activities can increase their educational aspirations (Irvin, Meece, et al., 2011) and broaden their awareness of postsecondary options, it often has little impact on whether or not students were able to successfully pursue a postsecondary path (Demi et al., 2010). Similar to findings related to support from teachers and school personnel, it seems that these activities can play a vital role in increasing students' educational aspirations and awareness of their postsecondary options, but fall short in helping them

enact their postsecondary choices. This finding is particularly problematic for students who receive special education services during high school because although all students with an individualized education plan (IEP) engage in a secondary transition planning process, rural students' processes are not always aligned with their needs and preferences (Baer et al., 2003) and may be inadequate for preparing them for success in work or college after high school (Miller-Warren, 2016; Weiss et al., 2012).

One way that schools aim to improve their students' ability to plan for their postsecondary paths is the use of formal programs and curriculums in this area. Gibbons and colleagues (2020) evaluated a program designed to increase CCR for rural Appalachian youth. Students reported that the program, the curriculum for which was grounded in SCCT and attended to cultural aspects of students' communities, did increase postsecondary interests and aspirations as well as college-going self-efficacy. Students also reported increasing their knowledge of the utility of completing postsecondary education in order to achieve their longer-term career goals. Similarly, Hedrick, Light, and Dick (2013) found that rural youth in grades 7-12 who participated in a series of activity-based lessons aimed at increasing their college-going and financial literacy awareness reported an increase in knowledge across all areas covered in the program with the greatest increase in the areas of understanding the college admission office and financial aid. The attention to understanding the financial aid process is particularly noteworthy as other research has demonstrated rural students' insufficient financial literacy (Means et al., 2016; Valentine & Khayum, 2005).

Taken together, findings from the extant literature on CCR activities and programming indicate that a holistic approach – combining opportunities for postsecondary counseling from school staff, curricula aimed at increasing students' postsecondary knowledge, and formal postsecondary preparation activities such as college and career fairs or campus visits – may be most effective for preparing all students for their next steps after high school.

Community Factors

Lastly, rural communities have an impact on students' college and career readiness and aspirations. Findings in this section connect to the

school and community context and social, economic, and policy context layers of Perna's (2006) nested model of college choice and to the external/environmental factors of SCCT (Lent et al., 1994).

Beyond participating in CCR-related activities such as mentoring programs and job shadowing (Alleman & Holly, 2013; Ellis, 2018; King, 2012), rural residents tend to be involved in the postsecondary decisions of rural youth through programming in recreation centers, churches, and federal programs like 4-H (Alleman & Holly, 2013). These individuals can reinforce or counter messages teachers and families send about postsecondary goals (Byun et al., 2012), whether they lead the students away from the community or not; this is important, because rural youth who have the strongest community attachment tend to have the highest academic achievement (Petrin et al., 2014). Sometimes, community members can even have more influence over the youth in the community than school counselors, as rural youth spend much more time with community members in churches or at extracurricular activities, like sports, than with a school counselor (Alleman & Holly, 2013).

Community members communicate positive messages about the local economy, which can lead rural males in particular to enter the workforce directly after high school (Agger et al., 2018), or negative perceptions of the local economy, particularly noting how resource extraction leads to booms and busts in local economies that do not lead to long term security (Slocum et al., 2020). A study of two Appalachian communities found that community members tended to encourage the youth in the community to pursue college degrees because they believed that a degree, while serving no greater purpose "than a piece of toilet paper" (p. 31) in their community, was likely the best chance at a more stable economic future, even if that future laid outside the community.

Encouraging rural youth to pursue postsecondary options that lead them away from their communities can cause tension for some youth who want to pursue a college degree, but then return to their communities to use them. One way some rural students can resolve this tension is through agriculture; a study of undergraduate students at the University of Arkansas found that rural students were significantly more likely to enroll in agricultural, food, and life sciences programs than their nonrural peers and were more likely to return to their hometown after they

graduated (Estes, et al., 2016). Therefore, scholars should consider community messages to their youth about CCR and how it impacts students' decisions. Specifically, scholars should recognize that rural community members, particularly those who view their local economy negatively, may view a college degree as necessary for a future that is more economically stable. Thus, they may encourage youth to pursue a degree, even without being able to provide guidance in this process (Means et al., 2016) and even if that means youth will be pursuing a path away from their community. Additionally, there is limited research on how rural students' postsecondary choices are impacted by the type of rural community they grew up in (Hudacs, 2020) so scholars are encouraged to pursue research in this area to better understand this relationship.

Discussion and Future Directions for the Field

To frame the discussion of our findings on rural students' college and career readiness (CCR), we return to the theoretical framework guiding our work. First, we remind the reader of Conley's college and career readiness model that assesses students' college and career readiness by their skill development in four areas: key cognitive strategies, key content knowledge, key learning skills and techniques, and key transition knowledge and skills. While use of Conley's model encourages a multifaced conception of CCR, it focuses on students' and schools' roles in students' preparation for their next steps after high school. Therefore, we build upon the utility of this model by pairing it with Perna's (2006) nested model of college choice and Social Cognitive Career Theory (SCCT), which encourages considering the impact of multiple layers that influence students' CCR. Having provided a comprehensive review of the extant literature on rural students' CCR organized by four areas of influence – student, family, school, and community – we now provide a holistic discussion of these findings as they relate to Conley's CCR model to provide the reader with an understanding of what the extant body of literature on rural students' CCR tells us and what remains unclear, paying particular attention to aspects of this research that are unexamined, underexamined, or outdated.

Rural Students' CCR: Key Cognitive Strategies and Key Content Knowledge

As previously stated, key cognitive strategies are the ways of thinking required by college-level work

and key content knowledge is the foundational understanding of core subject areas (Conley, 2012). We discuss these two areas of Conley's CCR model jointly as they relate to the extant literature on rural students' college and career readiness due to the significant amount of overlap in the relevant literature. These elements also make up important areas of SCCT, including personal attributes and external factors, as well as habitus and the school and community context of Perna's (2005) nested model. The two sections of our literature review that align with these two areas are rural students' academic readiness and rural schools' curricular offerings.

When socioeconomic status is controlled for, rural students perform as well on standardized assessments as their nonrural peers (Williams, 2005). Rural students' achievement, however, does not necessarily determine the difficulty level of the classes they take as we know that, compared to urban and suburban peers, rural students tend to attend schools with lower curriculum intensity (Byun et al., 2012) and less alignment to CCR standards (Edgerton & Desimone, 2018), are less likely to take advanced math classes (Cha, 2015; Irvin et al., 2017), have less access to AP courses (Education Commission of the States, 2017; Klopfenstein, 2004; Zarate & Pachon, 2006), have less access to remediation courses (Chen-Gardini et al., 2019), vary greatly in their access to dual enrollment courses (Lochmiller et al., 2016; Pierson et al., 2017; Piontek et al., 2016), and face obstacles to enrolling and completing in advanced courses when they are offered (Allen & Roberts, 2017; Mokher et al., 2019; Piontek et al., 2016).

To ensure that rural students are college and career ready in the areas of key cognitive strategies and key content knowledge, rural schools should continue to expand their course offerings – both advanced offerings and remedial offerings – in order to bolster rural students' CCR. This task is certainly not easy for many rural schools that, due to small staff sizes (Nitta et al., 2010), disadvantageous state and federal funding formulas (Howley et al., 2009; Williams & Nierengarten, 2011), and lack of internet connectivity to offer online or distance learning courses (Holian et al., 2014), struggle to offer a wide variety of courses to prepare students for college-level courses or vocational training or certificate programs. We are hopeful that funding opportunities for rural schools written into the Every Student Succeeds Act in 2015 (Brenner, 2016) result in increased funding streams that rural schools are able

to use, in part, to increase curricular offerings. Additionally, we recommend that rural schools increase their collaborations with local employers and institutions of higher education (Alford et al., 2014) in order to ensure they are preparing their students with the cognitive strategies and content knowledge that align with work- and college-related needs. Future research should examine how changes in curricular offerings, state and federal funding, and schools' partnerships with local employers and higher education institutions impact rural students' CCR.

Rural Students' CCR: Key Learning Skills and Techniques

In addition to possessing key cognitive strategies and key content knowledge, students must possess key learning skills and techniques in order to be college and career ready (Conley, 2012). These areas include all three components of SCCT, including personal attributes, external/environmental factors, and overt behavior. A crucial skill in this area is self-efficacy, represented in Perna's (2006) model as the human capital calculus. Findings from the extant literature demonstrate that rural students' age, race, and socioeconomic status impact their self-efficacy beliefs regarding their postsecondary options (Ali & Menke, 2014; Gibbons & Borders, 2010; Irvin et al., 2012). In turn, students' self-efficacy impacts their college and career choices (Lent et al., 1994; Perna, 2006) as well as the tasks they complete to assess the viability of these choices, including the completion of the FAFSA (Gibbons & Borders, 2010). Additionally, due to influence that parents (Agger et al., 2018; Demi et al., 2010; Gándara et al., 2001; Hutchins et al., 2012; Smith, 2007), school staff (Hardré et al., 2009; Irvin, Meece, et al., 2011; Means et al., 2016), and community members (Alleman & Holly, 2013; Petrin et al., 2014; Slocum et al., 2020) have on students' postsecondary choices, we see tremendous potential for these groups to shape rural students' self-efficacy regarding their postsecondary choices. For example, teachers are well-positioned to counter students' beliefs that their ability to be successful in college is negatively impacted by their high school's limited curricular offerings (Doyle et al., 2009) and parents and community members who know a student well can bolster the student's belief that their skills will aid them in finding employment at a local business.

Rural Students' CCR: Key Transition Knowledge and Skills

When considering key transition knowledge and skills, we found connections to nearly every section of our literature review including students' postsecondary aspirations, enrollment, and completion; parents' postsecondary support and expectations, socioeconomic status, and education levels; schools' support for postsecondary planning and provision of college and career programming; and the influence of rural communities. These areas are so critical to CCR that they overlap considerably with one another and span all three components of SCCT (personal attributes, external/environmental factors, and overt behavior), as well as all areas of Perna's model, including its human capital core and the broader layers attending to students' habitus, school and community context, higher education context, and the broader social, economic, and policy context. Our review of the extant literature highlights a common theme of rural students' CCR: rural students are often encouraged to pursue a college degree by parents, school staff, and community members, but lack sufficient guidance on how to enact that choice (Demi et al., 2010; Doyle et al., 2009; Grant, 2018; Means et al., 2016; Roberts, 2019; Slocum et al., 2020) By encouraging students to pursue certain postsecondary options without also providing them with a "roadmap" (Means et al., 2016) for how to successfully navigate their route, our efforts to ensure that they are college and career ready are selling them a dream that we are not preparing them for (Castro, 2020). Recognizing that students lack sufficient guidance to enact their postsecondary choices not only highlights an area for growth in CCR policy and programming, it repudiates the deficit-framed belief that rural students are not successful in their postsecondary pursuits due to insufficient aspiration or motivation. This pushback is important for accurately assessing CCR for rural students broadly, but it is particularly crucial for poor rural students of color, who are often framed in this way (Castro, 2020; Whiteside, 2020).

Although Conley (2012) states that his CCR model focuses primarily on the factors of students' readiness that schools have the most direct influence on, our findings highlight the powerful possibilities of harnessing not only schools and students, but also families and communities, in providing students with both the skills and support needed to successfully pursue their postsecondary paths. In their efforts to

increase students' CCR, rural schools should expand their programming to include families and community members throughout the CCR process, from college and career exploration activities that begin in elementary school through the completion of college and employment applications during high school. Rural schools should work toward engaging in ongoing dialogue with families and community members by explicitly communicating the ways in which they are preparing students to be college and career ready as well as actively seeking family and community feedback about and involvement in these processes. There is much work that needs to be done in this area and rural education scholars should seek out ways their scholarship can contribute to these efforts as well as share successes and shortcomings with the academic community for collective learning.

Place-Based College and Career Readiness: a Lever for Increased Rural Equity

Not only has our review of the extant literature on rural students' CCR highlighted the successes and shortcoming in the areas of cognitive strategies, content knowledge, learning skills and techniques, and transition knowledge and skills (Conley, 2012), it has served to elucidate the ways in which CCR policies and practices can increase rural inequality. State CCR definitions often prioritize college as a postsecondary path (Mishkind, 2014), resulting in tension in some rural schools to implement CCR standards and meet accountability standards aligned with them (Darling-Hammond et al., 2014) while still retaining a curriculum that values and attends to the unique context of the local community (Budge et al., 2019; Zuckerman et al., 2018). Furthermore, the prioritization of college over career in CCR policy and practice often serves to prepare students for employment absent in their communities, essentially serving as a talent extraction mechanism for rural communities (Carr & Kefalas, 2009; Corbett, 2020; Sherman & Sage, 2011; Slocum et al., 2020).

Recognizing the ways in which CCR can exacerbate existing inequalities in rural places, we advocate for a place-based approach to CCR. We build upon the strong tradition of place-based approaches in rural education scholarship as well as calls for increased use of place-based approaches in areas relevant to CCR (Kannapel & Flory, 2017) including career development (e.g., Bright, 2020) and cradle-to-career networks (e.g., Zuckerman, 2016) and advocate the foregrounding of place as we

prepare students for both college and career pathways. While a more expansive discussion of a place-based approach to CCR should be grounded in additional yet-to-be conducted research and is beyond the scope of this paper, we offer three changes to current CCR policies and practices that, based on our critical review of the extant literature on rural student CCR, this place-based approach to CCR would necessitate.

First, policymakers and state-level education stakeholders should work to revise CCR standards in order to present college-going as one, rather than the preferred, postsecondary option. Additionally, revised CCR standards should avoid presenting a dichotomous college versus career perspective and instead encourage postsecondary options as a continuum ranging from no additional formal education or training after high school through the attainment of a terminal degree. These changes would allow rural schools to support students in the pursuit of a wide variety of postsecondary pursuits without needing to resolve the tension between college and career inherent in many current CCR standards.

Secondly, district- and school-level practitioners – including district and school leadership, school counselors, and classroom teachers – should ensure that their schools’ CCR programming and messaging around postsecondary choices provide students with information on the geographical constraints or flexibilities of these choices, both in the short-term (i.e., the need to leave or stay for initial education or training) and the long-term (i.e., the need to leave or stay to secure employment in a chosen field). The increase in people working from home due to the current COVID-19 pandemic and the increase in rural “Zoom towns” that has accompanied it has opened up a national dialogue about the geographic flexibility of many jobs and the advantages of this flexibility for both employers and employees. While remote work is certainly not the panacea to the economic decline facing many rural communities and brings its own challenges to rural communities (Center on Rural Innovation, 2020), making explicit connections between postsecondary options and their geographical constraints and flexibilities will better equip rural students who wish to remain in their communities with the knowledge of postsecondary options that would allow them to do so, thus helping them align their postsecondary aspirations with their residential ones.

Finally, a place-based approach to CCR necessitates meaningful incorporation of local economies and models for college and career options (i.e., organizing a tour of the local factory that contains job presentations from a range of employees or asking a community member working remotely to speak with students about their job), and rural education practitioners should strive to partner with local organizations toward these efforts. In this way, rural schools are preparing their students to pursue a wide variety of postsecondary choices while also highlighting the local context, encouraging students to look both within and outside of the community they call home when exploring postsecondary options. Educational researchers should reflect the incorporation of community members and organizations in their research by including community-based actors in their research on rural students’ CCR and investigating how incorporation of these actors impacts the ability for rural school to provide students with a more place-based approach to CCR.

Our call for a place-based approach to CCR addresses the shortcomings found in the extant literature on rural students’ college and career readiness while also building upon the existing strengths the literature highlights. We encourage rural education scholars to mirror these changes in their work on rural students’ college and career readiness, particularly in response to the current prioritization of college over career in the literature. We encourage researchers to pursue scholarship that presents college and career readiness as a continuum rather than a college versus work dichotomy, incorporates a broad range of stakeholders – including school actors, policymakers, community members, families, and students – in their CCR research, and further explores the potential for and value of place-based approach to CCR. Additionally, we see great possibilities to build on the growing body of work that examines college and career readiness practices using critical perspectives and foregrounds the role of race/ethnicity, gender and sexuality, disability, and geographic variability in rural students’ college and career readiness. In this way, we believe the future direction of rural student college and career readiness can serve to highlight the diversity of rural places, reduce existing rural inequities, and continue to build upon the inherent strengths of rural schools, families, and communities.

References

- *References marked with an asterisk indicate studies included in the review
- *Agger, C., Meece, J., & Byun, S. Y. (2018). The influences of family and place on rural adolescents' educational aspirations and post-secondary enrollment. *Journal of Youth and Adolescence*, 47(12), 2554-2568. <https://doi.org/10.1007/s10964-018-0893-7>
- *Alford, B., Rudolph, A., Beal, H.O., & Hill, B. (2014). A school-university math and science P-16 partnership: Lessons learned in promoting college and career readiness. *Planning and Changing*, 45(1/2), 99-119. <http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=1&sid=acc03870-69ba-4cd7-9697-d635da5f4370%40pdc-v-sessmgr03>
- *Ali, S.R., & McWhirter, E.H. (2006). Rural Appalachian youth's vocational/educational postsecondary aspirations: Applying social cognitive career theory. *Journal of Career Development*, 33(2), 81-111. <https://doi.org/10.1177/0894845306293347>
- *Ali, S.R., & Menke, K.A. (2014). Rural Latino youth career development: An application of social cognitive career theory. *The Career Development Quarterly*, 62(2), 175-186. <https://doi.org/10.1002/j.2161-0045.2014.00078.x>
- *Alleman, N.F., & Holly, L.N. (2013). Multiple points of contact: Promoting rural postsecondary preparation through school-community partnerships. *The Rural Educator*, 34(2), 1-11. <https://doi.org/10.35608/ruraled.v34i2.398>
- *Alleman, N.F., & Holly, L.N. (2014). The role of rural communities in the postsecondary preparation of low-income students. *Journal of Education for Students Placed at Risk*, 19(3-4), 148-168. <https://doi.org/10.1080/10824669.2014.970638>
- *Allen, A., & Roberts, J. K. (2017). Evaluating implementation of the early college model through a theory of change. *International Journal of Educational Reform*, 26(3), 250-257. <https://doi.org/10.1177/105678791702600306>
- *Allen, A., & Roberts, J. K. (2019). Space and place in rural program implementation: A look at two Early College programs in Ohio. *The Rural Educator*, 40(1), 29-44. <https://doi.org/10.35608/ruraled.v40i1.531>
- *Arrastia-Chisholm, M. C., Bright, S. B., & Grimes, L. E. (2017). College and Career Counseling in Rural Schools: A Review of the Literature. *Georgia School Counselors Association Journal*, 25, 60-69. <https://files.eric.ed.gov/fulltext/EJ1178333.pdf>
- *Baer, R.M., Flexer, R.W., Beck, S., Amstutz, N., Hoffman, L., Brothers, J., Stelzer, D., & Zechman, C. (2003). A collaborative followup study on transition service utilization and post-school outcomes. *Career Development and Transition for Exceptional Individuals*, 26(1), 7-25. <https://doi.org/10.1177/088572880302600102>
- Biddle, C., & Azano, A.P. (2016). Constructing and reconstructing the "rural school problem": A century of rural education research. *Review of Research in Education*, 40(1), 298-325. <https://doi.org/10.3102/0091732X16667700>
- Biddle, C. & Hall, D. (2017, January 17). How education is failing rural America: No, low educational attainment isn't why Trump won. <https://www.edweek.org/ew/articles/2017/01/18/how-education-is-failing-rural-america.html>
- Bragg, D.D., & Taylor, J.L. (2014). Toward college and career readiness: How different models produce similar short-term outcomes. *American Behavioral Scientist*, 58(8), 994-1017. <https://doi.org/10.1177/0002764213515231>
- Brenner, D. (2016). Rural education and the Every Student Succeeds Act. *The Rural Educator*, 37(2), 23-27. <https://doi.org/10.35608/ruraled.v37i2.271>
- *Bright, D. J. (2020). Place Based Education as a Tool for Rural Career Development. *The Journal of Counselor Preparation and Supervision*, 13(3), 3. <http://dx.doi.org/10.7729/42.1393>
- Bronfenbrenner, U. (1992). Ecological systems theory. In R. Vasta (Ed.), *Six theories of child development: Revised formulations and current issues* (p. 187-249). Jessica Kingsley Publishers.
- Brown, D.L., & Schafft, K.A. (2018). *Rural people and communities in the 21st Century: Resilience and transformation* (2nd ed.). Polity Press.
- *Budge, K., Wargo, E., Carr-Chellman, D., & Canfield-Davis, K. (2019). When "college and career ready" means only (or mostly) college read: Perspectives from stakeholders in six rural and small communities. *Leadership and Policy in Schools*, 1-20. <https://doi.org/10.1080/15700763.2019.1696371>
- *Byun, S. Y., Irvin, M. J., & Meece, J. L. (2012). Predictors of bachelor's degree completion among rural students at four-year institutions. *The Review of Higher Education*, 35(3). <https://doi.org/10.1353/rhe.2012.0023>
- *Byun, S. Y., Irvin, M. J., & Meece, J. L. (2015). Rural/nonrural differences in college attendance

- patterns. *Peabody Journal of Education*, 90(2), 263–279. <https://doi.org/10.1080/0161956X.2015.1022384>
- *Byun, S., Meece, J. L., Agger, C.A. (2017). Predictors of college attendance patterns of rural youth. *Research in Higher Education*, 58, 817–842. <https://doi.org/10.1007/s11162-017-9449-z>
- *Byun, S. Y., Meece, J. L., Irvin, M. J., & Hutchins, B. C. (2012). The role of social capital in educational aspirations of rural youth. *Rural sociology*, 77(3), 355–379. <https://doi.org/10.1111/j.1549-0831.2012.00086.x>
- Camara, W. (2013). Defining and measuring college and career readiness: A validation framework. *Educational Measurement*, 32(4), 16–27. <https://doi.org/10.1111/emip.12016>
- Carr, P.J., & Kefalas, M.J. (2009). *Hollowing out the middle: The rural brain drain and what it means for America*. Beacon Press.
- *Castro, E.L. (2020). “They sellin’ us a dream they not preparin’ us for”: College readiness, dysconscious racism, and policy failure in one rural black high school. *The Urban Review*. <https://doi.org/10.1007/s11256-020-00585-9>
- Center on Rural Innovation (2020, October 8). Zoom Towns are not the answer. <https://ruralinnovation.us/zoom-towns-are-not-the-answer/>
- *Cha, S.H. (2015). Exploring disparities in taking high level math courses in public high schools. *KEDI Journal of Educational Policy*, 12(1), 3–17.
- *Chambers, C., Crumb, L., & Harris, C. (2019). A call for Dreamkeepers in rural United States: Considering the postsecondary aspirations of rural ninth graders. *Theory & Practice in Rural Education*, 9 (1), 7–22. <https://doi.org/10.3776/tpre.2019.v9n1p7-22>
- *Chen-Gaddini, M., Fong, A., Zhu, N., & Porterfield, A. (2019). Adoption of, enrollment in, and teacher workload for the expository reading and writing curriculum in California high schools. *National Center for Education Evaluation and Regional Assistance*. <https://ies.ed.gov/pubsearch/pubsinfo.asp?pubid=REL2020006>
- Conley, D. T. (2012). *A complete definition of college and career readiness*. Educational Policy Improvement Center. <https://eric.ed.gov/?id=ED537876>
- Corbett, M. (2020). *Learning to leave: The irony of schooling in a coastal community* (2020 ed.). West Virginia University Press.
- *Crockett, L.J., & Bingham, C.R. (2000). Anticipating adulthood: Expected timing of work and family transitions among rural youth. *Journal of Research on Adolescence*, 10(2), 151–172. <https://onlinelibrary.wiley.com/journal/15327795>
- Crockett, L. J., Shanahan, M. J., & Jackson-Newsom, J. (2000). Rural youth: Ecological and life course perspectives. In R. Montemayor, G. R. Adams, & T. P. Gullotta (Eds.), *Adolescent diversity in ethnic, economic, and cultural contexts (Volume 10)*, pp. 43–74 Sage Publications. <https://digitalcommons.unl.edu/psychfacpub/246>
- Darling-Hammond, L., Wilhoit, G., & Pittenger, L. (2014). Accountability for college and career readiness: Developing a new paradigm. *Education Policy Analysis Archives*, 22(86). <http://dx.doi.org/10.14507/epaa.v22n86.2014>
- *Deaton, S. (2014). Impact of the English advanced placement (AP) program on college grade point average among rural Appalachian students. *The Rural Educator*, 35(3). <https://doi.org/10.35608/ruraled.v35i3.344>
- *Demi, M.A., Coleman-Jensen, A., & Snyder, A.R. (2010). The rural context and post-secondary school enrollment: An ecological systems approach. *Journal of Research in Rural Education*, 25(7), 1–26. <https://jrre.psu.edu/>
- *Doyle, A., Kleinfeld, J., & Reyes, M. (2009). The educational aspirations/attainment gap among rural Alaska Native students. *The Rural Educator*, 30(3), 25–33. <https://doi.org/10.35608/ruraled.v30i3.446>
- *Edgerton, A.K., & Desimone, L.M. (2018). Teacher implementation of college- and career-readiness standards: Links among policy, instruction, challenges, and resources. *AERA Open*, 4(4), 1–22. <https://doi.org/10.1177/2332858418806863>
- Education Commission of the States. (2017). Advanced Placement access and success: How do rural schools stack up? *Education Commission of the States*. <https://www.ecs.org/wp-content/uploads/Advanced-Placement-Access-and-Success-How-do-rural-schools-stack-up.pdf>
- *Ellis, L. M. (2018). *Career and College Readiness: What Is the Community's Role in Rural Areas?* (Publication No. 10828086) [Doctoral dissertation, University of Oregon]. ProQuest.
- *Estes, H.K., Estes, S., Johnson, D.M., Edgar, L.D., & Shoulders, C.W. (2016). The rural brain drain and choice of major: Evidence from one land grant university. *NACTA Journal*, 60(1), 9–13. <https://www.nactateachers.org/index.php/journal-sp-1148215168>
- *Freeman, E. (2014). Placing the Standards: Will the Common Core State Standards Encourage Rural Youth Outmigration?. *The Rural Educator*, 36(1). <https://doi.org/10.35608/ruraled.v36i1.572>

- Gagnon, D. J., & Mattingly, M. J. (2015). State policy responses to ensuring excellent educators in rural schools. *Journal of Research in Rural Education, 30*(13), 1-14. <https://jrre.psu.edu/>
- *Gagnon, D. J., & Mattingly, M. J. (2016). Advanced Placement and rural schools: Access, success, and exploring alternatives. *Journal of Advanced Academics, 27*(4), 266-284. <https://doi.org/10.1177/1932202X16656390>
- *Gallagher, H. A., Arshan, N., & Woodworth, K. (2017). Impact of the National Writing Project's College-Ready Writers Program in high-need rural districts. *Journal of Research on Educational Effectiveness, 10*(3), 570-595. <https://doi.org/10.1080/19345747.2017.1300361>
- *Gándara, P., Gutiérrez, D., & O'Hara, S. (2001). Planning for the future in rural and urban high schools. *Journal of Education for Students Placed at Risk, 6*(1-2), 73-93. https://doi.org/10.1207/S15327671ESPR0601-2_5
- Garrard, J. (2017). *Health sciences literature review made easy: The matrix method* (5th ed.). Jones & Bartlett Learning.
- Gewertz, C. (2016, September 6). Are dual-enrollment programs overpromising? *Education Week*. <https://www.edweek.org/ew/articles/2016/09/07/are-dual-enrollment-programs-overpromising.html>
- *Gibbons, M.M., & Borders, L.D. (2010). Prospective first-generation college students: A social-cognitive perspective. *The Career Development Journal, 58*(3), 194-208. <https://doi.org/10.1002/j.2161-0045.2010.tb00186.x>
- *Gibbons, M. M., Hardin, E. E., Taylor, A. L., Brown, E., & Graham, D. (2020). Evaluation of an SCCT-based intervention to increase postsecondary awareness in rural Appalachian youth. *Journal of Career Development, 47*(4), 424-439. <https://doi.org/10.1177/0894845319832972>
- *Gonzales, A., Jones, D., & Ruiz, A. (2014). Toward Achievement in the " Knowledge Economy" of the 21st Century: Preparing Students through T-STEM Academies. *Research in Higher Education Journal, 25*. <https://eric.ed.gov/?id=EJ1055333>
- *Grant, P. D. (2018). *Rural student experiences at an R1 doctoral university* (Publication No. 9949334487702959) [Doctoral dissertation, University of Georgia]. https://getd.libs.uga.edu/pdfs/grant_phillip_d_201805_phd.pdf
- Griffin, D., Hutchins, B. C., & Meece, J. L. (2011). Where do rural high school students go to find information about their futures? *Journal of Counseling and Developing, 89*(2), 172-181. <https://doi.org/10.1002/j.1556-6678.2011.tb00075.x>
- *Griffith, K. G., Jones, K., Winship, J., & Howard, E. (2019). Developing Student Growth through Effective Inclusion Skill Sets in the Rural Black Belt Region of Alabama and Mississippi. *European Journal of Educational Sciences, 6*(3), 16-26. <http://dx.doi.org/10.19044/ejes.v6no3a2>
- Goldman, K.D., & Schmalz, K.J. (2004). The matrix method of literature reviews. *Health Promotion Practice, 5*(1), 5-7. <https://doi.org/10.1177/1524839903258885>
- *Hardré, P., Sullivan, D., & Crowson, H. (2009). Student characteristics and motivation in rural high schools. *Journal of Research in Rural Education, 24*(16), 1-19. <https://hdl.handle.net/11244/13645>
- *Hedrick, J., Light, M., & Dick, J. (2013). College readiness for rural youth initiative - creating a climate for success. *Journal of Extension, 51*(6), 1-5.
- Hill, J. & Turney, J.S. (2016). National Rural Education Association (NREA) research agenda – 2016-2021. *The Rural Educator, 37*(3), v-vii. <https://doi.org/10.35608/ruraled.v37i3.236>
- *Hodara, M., & Cox, M. (2016). Developmental Education and College Readiness at the University of Alaska. REL 2016-123. *Regional Educational Laboratory Northwest*. <https://eric.ed.gov/?id=ED565798>
- *Hodara, M., & Lewis, K. (2017). *How well does high school grade point average predict college performance by student urbanicity and timing of college entry?* Regional Educational Laboratory at Education Northwest. <https://files.eric.ed.gov/fulltext/ED573041.pdf>
- *Hodges, T. D., & Barbuto Jr, J. E. (2002). Recruiting Urban and Rural Students: Factors Influencing the Postsecondary Education Institution Choices of Rural Versus Urban High School Students. *C & U Journal, 45*, 3-10.
- *Holian, L., Alberg, M., Strahl, J.D., Burgette, J., & Cramer, E. (2014). Online and distance learning in Southwest Tennessee: Implementation and challenges. *National Center for Education Evaluation and Regional Assistance*. <https://ies.ed.gov/ncee/edlabs/projects/project.asp?ProjectID=1466>
- Holley, K.A., & Harris, M.S. (2019). *The qualitative dissertation in education: A guide for integrating research and practice*. SAGE.
- Hooker, S., & Brand, B. (2010). College knowledge: A critical component of college and career readiness. *New directions for youth development, 2010*(127), 75-85. <https://doi.org/10.1002/yd.364>

- *Hornbeck, D., & Malin, J. R. (2019). Superintendents' perceptions of the influence of a statewide dual enrollment policy on local educational programming. *International Journal of Educational Reform*, 28(3), 253-277. <https://doi.org/10.1177/1056787919857255>
- *Howley, A., Rhodes, M., & Beall, J. (2009). Challenges facing rural schools: Implications for gifted students. *Journal for the Education of the Gifted*, 32(4), 515-536. <https://doi.org/10.1177/016235320903200404>
- *Howley, C. B. (2006). Remote possibilities: Rural children's educational aspirations. *Peabody Journal of Education*, 81(2), 62-80. https://doi.org/10.1207/S15327930pje8102_4
- *Howley, C. B., Johnson, J., Passa, A., & Uekawa, K. (2014). *College enrollment and persistence in rural Pennsylvania schools*. REL Report No. 2015-053. National Center for Education Statistics. https://ies.ed.gov/ncee/edlabs/regions/midatlantic/pdf/REL_2015053.pdf
- *Hu, S. (2003). Educational aspirations and postsecondary access and choice: Students in urban, suburban, and rural schools compared. *Education Policy Analysis Archives*, 11(14), 1-13. <https://doi.org/10.14507/epaa.v11n14.2003>
- *Hudacs, A. (2020). An examination of college persistence factors for students from different rural communities: A multilevel analysis. *Journal of Research in Rural Education*, 36(2). <https://doi.org/10.26209/jrre3602>
- *Hudley, C., Moschetti, R., Gonzalez, A., Cho, S. J., Barry, L., & Kelly, M. (2009). College freshmen's perceptions of their high school experiences. *Journal of Advanced Academics*, 20(3), 438-471. <https://doi.org/10.1177/105678790902000304>
- *Hutchins, B.C., Meece, J.L., Byun, S., & Farmer, T.W. (2012). Planning for the future: An investigation of work-bound rural youth. *The Rural Educator*, 33(2), 7-19. <https://doi.org/10.35608/ruraled.v33i2.414>
- *Ingels, S. J., Scott, L. A., & Owings, J. A. (2004). The High School Sophomore Class of 2002: A Demographic Description. First Results from the Base Year of the Education Longitudinal Study of 2002. NCES 2004-371. *National Center for Education Statistics*. <https://eric.ed.gov/?id=ED483102>
- *Irvin, M. J., Farmer, T. W., Weiss, M. P., Meece, J. L., Byun, S., McConnell, B. M., & Petrin, R. A. (2011). Perceptions of school and aspirations of rural students with learning disabilities and their nondisabled peers. *Learning Disabilities Research & Practice*, 26(1), 2-14. <https://doi.org/10.1111/j.1540-5826.2010.00320.x>
- *Irvin, M.J., Meece, J.L., Byun, S., Farmer, T.W., Hutchins, B.C. (2011). Relationship of school context to rural youth's educational achievement and aspirations. *Journal of Youth and Adolescence*, 40(9), 1225-1242. <https://doi.org/10.1007/s10964-011-9628-8>
- *Irvin, M.J., Byun, S., Meece, J.L., Farmer, T.W., & Hutchins, B.C. (2012). Educational barriers of rural youth: Relation of individual and contextual difference variables. *Journal of Career Assessment*, 20(1), 71-87. <https://doi.org/10.1177/1069072711420105>
- *Irvin, M., Byun, S., Smiley, W., & Hutchins, B.C. (2017). Relation of opportunity to learn advanced math to the educational attainment of rural youth. *American Journal of Education*, 123(3), 475-510. <https://doi.org/10.1086/691231>
- *Jensen, M. L. (2013). Increasing college-going self-efficacy of rural fifth grade students. [Doctoral Dissertation, Oregon State University]. Scholars Archives at Oregon State University. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/j098zf94c
- *Johnson, C. (2008). Post-school outcomes for students in the state of Washington, USA, receiving special education services. *The Journal of the International Association of Special Education*, 9(1), 78-88. <https://eric.ed.gov/?id=EJ846067>
- *Johnson, T. E., & Brophy, M. (2006). Dual Enrollment: Measuring Factors for Rural High School Student Participation. *The Rural Educator*, 28(1), 25-32. <https://doi.org/10.35608/ruraled.v28i1.487>
- Johnson, A., Kuhfeld, M., & Soland, J. (2020). The Forgotten 20 Percent: Achievement and Growth in Rural Schools Across the Nation. (EdWorkingPaper: 20-236). Retrieved from Annenberg Institute at Brown University: <https://doi.org/10.26300/y8r2-cx61>
- *Kannapel, P.J., & Flory, M.A. (2017). Postsecondary transitions for youth in Appalachia's Central Subregions: A review of education research, 1995-2015. *Journal of Research in Rural Education*, 32(6), 1-17. <https://eric.ed.gov/?id=EJ1152110>
- Kelley, C. (2011) Reviewing literature and formulating problems. In C. F. Conrad & R. C. Serlin (Eds.), *The SAGE Handbook for Research in Education: Pursuing ideas as the keystone of exemplary inquiry* 2nd ed., pp 83-92. SAGE Publications.
- *Khan, S., Castro, E., Bragg, D. D., Barrientos, J. I., & Baber, L. (2009). The College and Career Readiness Act: Findings from Evaluation—Year

- One. *Office of Community College Research and Leadership*. <https://eric.ed.gov/?id=ED507679>
- *King, S.B. (2012). Increasing college-going rate, parent involvement, and community participation in rural communities. *The Rural Educator*, 33(2), 20-26. <https://doi.org/10.35608/ruraled.v33i2.415>
- Klopfenstein, K. (2004). Advanced Placement: Do minorities have equal opportunity?. *Economics of Education Review*, 23, 115-131. <https://www.jstor.org/stable/27751419>
- *Koricich, A., Chen, X., & Hughes, R.P. (2018). Understanding the effects of rurality and socioeconomic status on college attendance and institutional choice in the United States. *The Review of Higher Education*, 41(2), 281-305. <https://doi.org/10.1353/rhe.2018.0004>
- *Kryst, E. L., Kotok, S., & Hagedorn, A. (2018). Pursuing Higher Education in Rural Pennsylvania Schools: Shaping the College Path. *The Rural Educator*, 39(1), 1-15. <https://doi.org/10.35608/ruraled.v39i1.211>
- *Legutko, R. S., (2008). A decade's difference: Research revisited on family influence of rural high school students' postsecondary decisions. *The Rural Educator*, 29(2), 4-7. <https://doi.org/10.35608/ruraled.v29i2.467>
- Lent, R.W., Brown, S.D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, 45(1), 79-122. <https://doi.org/10.1006/jvbe.1994.1027>
- *Lochmiller, C.R., Sugimoto, T.J., Muller, P.A., Mosier, G.G., & Williamson, S.E. (2016). Dual enrollment courses in Kentucky: High school students' participation and completion rates. *National Center for Education Evaluation and Regional Assistance*. <https://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=435>
- Lombardi, A.R., Conley, D.T., Seburn, M.A., & Downs, A.M. (2013). College and career readiness assessment: Validation of the key cognitive strategies framework. *Assessment for Effective Intervention*, 38(3), 163-171. <http://doi.org/10.1177/1534508412448668>
- *Manly, C. A., Wells, R. S., & Kommers, S. (2019). Who are rural students? How definitions of rurality affect research on college completion. *Research in Higher Education*, 1-16. <https://doi.org/10.1007/s11162-019-09556-w>
- *Martinez, R.R., Baker, S.B., & Young, T. (2017). Promoting career and college readiness, aspirations, and self-efficacy: Curriculum field test. *The Career Development Quarterly*, 65(2), 173-188. <https://doi.org/10.1002/cdq.12090>
- *Means, D. (2019). Crucial support, vital aspirations: The college and career aspirations of rural Black and Latinx middle school students in a community- and youth-based leadership program. *Journal of Research in Rural Education*, 35(1), 1-14. <https://jrre.psu.edu/sites/default/files/2019-06/35-1.pdf>
- *Means, D.R., Clayton, A.B., Conzelmann, J.G., Baynes, P., & Umbach, P.D. (2016). Bounded aspirations: Rural, African American high school students and college access. *The Review of Higher Education*, 39(4), 543-569. <https://doi.org/10.1353/rhe.2016.0035>
- Miller, P.M. (2011). A critical analysis of the research on student homelessness. *Review of Educational Research*, 81(3), 308-337. <https://doi.org/10.3102/0034654311415120>
- *Miller-Warren, V. (2016). Parental insights on the effects of the secondary transition planning process on the postsecondary outcomes of graduates with disabilities. *Rural Special Education Quarterly*, 35(1), 31-36. <https://doi.org/10.1177%2F875687051603500105>
- Mishkind, A. (2014). *Overview: State definitions of college and career readiness*. American Institutes for Research. https://ccrcenter.org/sites/default/files/CCRS%20Definitions%20Brief_REV_1.pdf
- *Mokher, C. G., Lee, S., & Sun, C. (2019). Evaluating Innovations for Improving College and Career Readiness in Rural Schools. *Research in the Schools*, 26(1), 48-63.
- *Molefe, A., Burke, M.R., Collins, N., Sparks, D., & Hoyer, K. (2017). *Postsecondary education expectations and attainment of rural and nonrural students*. Regional Education Laboratory at American Institutes for Research. <https://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=1465>
- Monahan, J. L., Lombardi, A., Madaus, J., Carlson, S. R., Freeman, J., & Gelbar, N. (2020). A Systematic Literature Review of College and Career Readiness Frameworks for Students With Disabilities. *Journal of Disability Policy Studies*, 31(3), 131-140. <https://doi.org/10.1177%2F1044207320906816>
- *Mykerezi, E., Kostandini, G., Jordan, J.L., & Melo, I. (2014). On rural-urban differences in human capital formation: Finding the "bottlenecks." *Journal of Rural Social Sciences*, 29(1), 14-47. <https://egrove.olemiss.edu/jrss/vol29/iss1/2>
- National Center for Education Statistics. (2011). *Digest of Education Statistics 2010* (NCES2011-033). Washington, DC: U.S. Department of Education. <https://eric.ed.gov/?id=ED518987>

- National Student Clearinghouse Research Center (2018). National college progression rates. https://nscresearchcenter.org/wp-content/uploads/2018_HSBenchmarksReport_FI_N_22OCT18.pdf
- *Nelson, I.A. (2019). Starting over on campus or sustaining existing ties? Social capital during college among rural and non-rural college graduates. *Qualitative Sociology*, 42, 93-116. <https://doi.org/10.1007/s11133-018-9399-6>
- Nitta, K., Holley, M. J., & Wrobel, S. L. (2010). A phenomenological study of rural school consolidation. *Journal of Research in Rural Education*, 25(2), 1-19. <https://jrre.psu.edu/sites/default/files/2019-08/25-2.pdf>
- *Ohlson, M. A., Shope, S. C., & Johnson, J. D. (2020). The Rural RISE (Rural Initiatives Supporting Excellence). *The Rural Educator*, 41(1), 27-39. <https://doi.org/10.35608/ruraled.v41i1.551>
- *Parson, L., & Hunter, C. (2019). Exploring Differences in Principal Experiences According to Rurality: A Mixed-Method Study. *Planning & Changing*, 49 (1/2), 37-61.
- Perna, L. W. (2006). Studying college choice: A proposed conceptual model. In J.C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. XXI, pp. 99-157). Springer.
- *Petcu, S.D., Van Horn, M.L., & Shogren, K.A. (2017). Self-determination and the enrollment in and completion of postsecondary education for students with disabilities. *Career Development and Transition for Exceptional Individuals*, 40(4), 225-234. <https://doi.org/10.1177/2165143416670135>
- *Peterson, B., Bornemann, G., Lydon, C., & West, K. (2015). Rural students in Washington State: STEM as a strategy for building rigor, postsecondary aspirations, and relevant career opportunities. *Peabody Journal of Education*, 90(2), 280-293. <https://doi.org/10.1080/0161956X.2015.1022397>
- *Petrin, R.A., Farmer, T.W., Meece, J.L., & Byun, S. (2011). Interpersonal competence configurations, attachment to community, and residential aspirations of rural adolescents. *Journal of Youth and Adolescents*, 40(9), 1091-1105. <https://doi.org/10.1007/s10964-011-9690-2>
- *Petrin, R.A., Schafft, K.A., & Meece, J.L. (2014). Educational sorting and residential aspirations among rural high school students: What are the contributions of schools and educators to rural brain drain? *American Educational Research Journal*, 51(2), 294-326. <https://doi.org/10.3102/0002831214527493>
- *Pierson, A., Hodara, M., & Luke, J. (2017). Earning College Credits in High School: Options, Participation, and Outcomes for Oregon Students. REL 2017-216. *Regional Educational Laboratory Northwest*. <https://eric.ed.gov/?id=ED573021>
- *Piontek, M.E., Kannapel, P.J., Flory, M., & Stewart, M.S. (2016). The implementation of dual credit programs in six nonurban Kentucky school districts. *National Center for Education Evaluation and Regional Assistance*. <https://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=437>
- *Pires, B., Crandell, I., Arnsbarger, M., Lancaster, V., Schroeder, A., Shipp, S., ... & Keller, S. (2018). Predicting postsecondary trajectories in Virginia high schools using publicly available data. *Statistical Journal of the IAOS*, 34(4), 553-565. <https://doi.org/10.3233/SJJ-180455>
- *Prins, E., & Kassab, C. (2015). GED recipients in postsecondary education: A rural-urban analysis of Pennsylvania FAFSA applicants' educational, demographic, and financial characteristics. *Journal of Research and Practice for Adult Literacy, Secondary, and Basic Education*, 4(2), 20-36.
- *Prins, E., & Kassab, C. (2017). Rural/non-rural differences among Pennsylvania FAFSA applicants pursuing the same type of postsecondary degree. *Journal of Research in Rural Education*, 32(7), 1-16. <https://jrre.psu.edu/sites/default/files/2019-08/32-7.pdf>
- *Prins, E., Kassab, C., & Campbell, K. (2015). Adult learners in higher education: A rural-urban analysis of Pennsylvania FAFSA applicants' educational, demographic, and financial characteristics. *The Journal of Continuing Higher Education*, 63, 71-85. <https://doi.org/10.1080/07377363.2015.1042999>
- *Provasnik, S., KewalRamani, A., Coleman, M. M., Gilbertson, L., Herring, W., & Xie, Q. (2007). *Status of education in rural America*. U.S. Department of Education. <https://nces.ed.gov/pubs2007/2007040.pdf>
- *REL Southeast (2010). *Evidence based education request desk.pdf*. Retrieved from <https://files.eric.ed.gov/fulltext/ED537036.pdf>
- *Richards, A. M. (2004). Rural transition: Know no bounds. *Rural Special Education Quarterly*, 23(3), 36-40. <https://doi.org/10.1177/02F875687050402300306>
- *Roberts, J. K. (2017). Meeting needs or exacerbating barriers: The role of Ohio's early college policy in rural students' college enrollment and persistence. *Texas Education*

- Review*, 5(1), 40-52.
<http://hdl.handle.net/2152/44578>
- *Roberts, J. K. (2019). *Alignment of Ohio's College Credit Plus Policy with barriers to and supports for college enrollment of high school students in high-poverty rural areas* (Publication No. 27534731) [Doctoral dissertation, The Ohio State University]. ProQuest Dissertations Publishing. http://rave.ohiolink.edu/etdc/view?acc_num=osu1555571977938049
- *Rockey, M. M. (2019). *Perceptions of college and career readiness among rural high school seniors* [Doctoral dissertation, University of Illinois at Urbana-Champaign]. Illinois Digital Environment for Access to Learning and Scholarship. <http://hdl.handle.net/2142/104996>
- Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). SAGE.
- *Schmitt-Wilson, S., Downey, J.A., & Beck, A.E. (2018). Rural educational attainment: The importance of Context. *Journal of Research in Rural Education*, 33(1), 1-14.
<https://doi.org/10.18113/P8JRRE3301>
- *Schultz, P. F. (2004). Upon Entering College: First Semester Experiences of First-Generation Rural Students from Agricultural Families. *The Rural Educator*, 26(1), 48-51.
<https://doi.org/10.35608/ruraled.v26i1.521>
- Schutz, A. (2006). Home is a prison in the global city: The tragic failure of school-based community engagement strategies. *Review of educational research*, 76(4), 691-743.
- *Scott, S., Miller, M. T., & Morris, A. A. (2015). Rural community college student perceptions of barriers to college enrollment. *Academic Leadership Journal in Student Research*, 3.
<https://files.eric.ed.gov/fulltext/EJ1101249.pdf>
- *Sherman, J., & Sage, R. (2011). Sending off all your good treasures: Rural schools, brain-drain, and community survival in the wake of economic collapse. *Journal of Research in Rural Education*, 26(11), 1-14. <https://jrre.psu.edu/sites/default/files/2019-08/26-11.pdf>
- Showalter, D., Hartman, S. L., Johnson, J., & Klein, B. (2019). Why Rural Matters 2018-2019: The Time Is Now. A Report of the Rural School and Community Trust. *Rural School and Community Trust*. <https://www.ruraledu.org/WhyRuralMatters.pdf>
- *Slocum, A., Weekley, B.S., & Sherfinski, M. (2020). Mind the gap: Parents' efforts to support college-bound students in Appalachia. *The High School Journal*, 103(1), 18-37.
<https://doi.org/10.1353/hsj.2020.0001>
- *Smith, D. (2007). Why expand dual-credit programs? *Community College Journal of Research and Practice*, 31(5), 371-387.
<https://doi.org/10.1080/10668920600932884>
- *Smith, J., Pender, M., & Howell, J. (2013). The full extent of student-college academic undermatch. *Economics of Education Review*, 32, 247-261.
<https://doi.org/10.1016/j.econedurev.2012.11.001>
- *Starobin, S. S., & Bivens, G. M. (2014). The Role of Secondary School and Community College Collaborations to Increase Latinas in Engineering in a Rural Community. *New Directions for Community Colleges*, 165, 17-23.
<https://doi.org/10.1002/cc.20087>
- *Strawn, R.M. (2019). Rural community colleges as a student choice. *New Directions for Community Colleges*, 2019(187), 73-81.
<https://doi.org/10.1002/cc.20371>
- *Summers, E. J., & Dickinson, G. (2012). A longitudinal investigation of project-based instruction and student achievement in high school social studies. *Interdisciplinary Journal of Problem-Based Learning*, 6(1), 82-103.
<https://doi.org/10.7771/1541-5015.1313>
- *Swanson, E., & Ritter, G. (2020). Start to Finish: Examining the Impact of the El Dorado Promise Program on Postsecondary Outcomes. *Journal of Student Financial Aid*, 49(3), 2.
<https://ir.library.louisville.edu/jsfa/vol49/iss3/2>
- *Szidon, K. Ruppard, A. Smith, L. (2015). Five steps for developing effective transition plans for high school students with autism spectrum disorder Postsecondary Outcomes. *TEACHING Exceptional Children*, 47(3), 147-152.
<https://doi.org/10.1177/0040059914559780>
- The College Board. (2020). AP Students. <https://apstudents.collegeboard.org/exam-policies-guidelines/exam-fees>
- *Tieken, M.C. (2016). College talk and the rural economy: Shaping the educational aspirations of rural, first-generation students. *Peabody Journal of Education*, 91(2), 203-223.
<https://doi.org/10.1080/0161956X.2016.1151741>
- Tinto, V. (2007). Research and practice of student retention: What's next? *Journal of College Student Retention*, 8, 1-19.
<https://doi.org/10.2190%2F4YNU-4TMB-22DJ-AN4W>
- U.S. Department of Education (n.d.). Wondering how the amount of your federal student aid is determined? <https://studentaid.gov/complete-aid-process/how-calculated>
- *Valentine, G. P., & Khayum, M. (2005). Financial literacy skills of students in urban and rural high schools. *The Delta Pi Epsilon Journal*, XLVII(1), 1-10. <https://eric.ed.gov/?id=EJ735856>

- *Weiss, M.P., Hutchins, B.C., & Meece, J.L. (2012). The postsecondary educational plans of rural youth with disabilities and their nondisabled peers. *Career Development and Transition for Exceptional Individuals*, 35(3), 180-189. <https://doi.org/10.1177/2165143412450313>
- *Wells, R., Manly, C.A., Kommers, S., & Kimball, E. (2019). Narrowed gaps and persistent challenges: Examining rural-nonrural disparities in postsecondary outcomes over time. *American Journal of Education*, 126(1), 1-31. <https://doi.org/10.1086/705498>
- *Whiteside, J.L. (2020). Becoming academically eligible: University enrollment among first-generation rural college goers. *Rural Sociology*. <https://doi.org/10.1111/ruso.12353>
- Wiley, A., Wyatt, J.N., & Camara, W.J. (2010). *The development of a multidimensional college readiness index*. (College Board Research Report No. 2010–3). The College Board. <https://files.eric.ed.gov/fulltext/ED563050.pdf>
- *Wilkinson, L., & Pearson, J. (2015). Same-sex sexuality and postsecondary outcomes: The role of high school locale. *Sociological Perspectives*, 58(3), 380-401. <https://doi.org/10.1177/0731121415569283>
- *Williams, J.H. (2005). Cross-national variations in rural mathematics achievement: A descriptive overview. *Journal of Research in Rural Education*, 20(5), 1-18. <https://jrre.psu.edu/sites/default/files/2019-08/20-5.pdf>
- Williams, J. M., & Nierengarten, G. (2011). Recommendations from the North Star State: Rural administrators speak out. *The Rural Educator*, 33(1), 15-24. <https://doi.org/10.35608/ruraled.v33i1.419>
- Zarate, M. E., Pachon, H. P. (2006). *Gaining or losing ground? Equity in offering Advanced Placement courses in California high schools: 1997-2003*. Tomás Rivera Policy Institute. <https://files.eric.ed.gov/fulltext/ED502057.pdf>
- *Zuckerman, S.J. (2016). Mobilization and adaptation of a rural cradle-to-career network. *Education Sciences*, 6(4), 1-22. <https://doi.org/10.3390/educsci6040034>
- *Zuckerman, S.J., Wilcox, K.C., & Durand, F.T. (2018). Absorptive capacity in rural schools: Bending not breaking during disruptive innovation implementation. *Journal of Research in Rural Education*, 34(3), 1-27. https://jrre.psu.edu/sites/default/files/2019-06/34-3_0.pdf

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