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EdWorkingPaper No. 25-1269

The Many Paths to College Enrollment: Re-Conceptualizing the Transition to College

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Traditional college choice models often fall short in capturing the complex paths that today's student population takes to postsecondary enrollment. This paper identifies the limitations of the predominant frameworks, such as Hossler and Gallagher's (1987) three-phase model, arguing that they reflect an outdated enrollment-management perspective, which fails to capture the experiences of many students. We propose a new, student-centered conceptual framework rooted in higher education research that better reflects the realities of the contemporary college-going process. Our model consists of six elements: (1) expectations, (2) academic preparation and the development of "admissions capital," (3) college knowledge, (4) information gathering and application set formation, (5) application and admission, and (6) enrollment. The framework recognizes that students' postsecondary pathways are often indirect and shaped by a range of individual and contextual factors. Moreover, it allows for interactions among the elements and emphasizes the enduring influence of educational expectations. By re-conceptualizing the transition to college, our model offers a more nuanced lens for researchers, policymakers, and practitioners seeking to understand and support an increasingly diverse student body and address persistent inequities in college access and choice.

VERSION: August 2025

Suggested citation: Klasik, Daniel, Brian Holzman, and Angel M. Jones. (2025). The Many Paths to College Enrollment: Re-Conceptualizing the Transition to College. (EdWorkingPaper: 25-1269). Retrieved from Annenberg Institute at Brown University: https://doi.org/10.26300/54c6-2316

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Draft last edited June 19, 2025

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Trends in higher education scholarship, particularly those concerning issues of equity and stratification, have highlighted the differential effects of not just whether a student goes to college but where a student enrolls (e.g., Brewer et al., 1999; Chetty et al., 2017; Dale & Krueger, 2014; Zimmerman, 2014). These patterns raise concerns about academic undermatching (Bowen et al., 2009; Roderick et al., 2011; Smith et al., 2013) and continued disparities in college enrollment destinations between more- and less-privileged students (Alon & Tienda, 2007; Baker et al., 2018; Posselt et al., 2012). Among other issues, these results have led scholars and policymakers to seek new ways to understand how students move through the process that leads to postsecondary enrollment. Specifically, researchers and practitioners have sought to identify strategies that can help students make the best choices about college enrollment that they can by intervening at various points in the process—interventions like requiring that students take the SAT or ACT (e.g., Hyman, 2017; Klasik, 2013) or providing students with information about promising college options (e.g., Hoxby & Turner, 2013, Gurantz et al., 2021). Together, these findings and policy attention have raised the stakes associated with understanding the paths that students take as they transition to college.

Efforts to help students fulfill their college goals can only be as effective as our understanding of how they make decisions about whether and where to enroll in college and the various obstacles they must overcome along the way. Decades of research have helped develop a rich understanding of this process, but this knowledge is now stretching the limits of existing models of college choice. Findings about how a student's level of academic preparation shapes where they enroll in college (Adelman, 2006; Alon & Tienda, 2007) or about the obstacles to

enrollment that college applications themselves present (Holzman et al., 2020; Klasik, 2012) are indicative of important college choice research that does not fit neatly into existing models of college choice. Additionally, since the 1980s when the foundations for many college choice models were laid, both the college-bound student body and the college options they have available to them have evolved. This evolution has led to a wide variety of paths that students can take to college—it is likely no longer the case that the typical college-bound student simply aspires to college, researches where to apply, and then enrolls. To the extent that college choice models are underdeveloped, or that existing models direct research in a way that does not faithfully capture the college choice process as students experience it, any work to improve the college enrollment outcomes of students will necessarily be limited.

In the work that follows, we present a new framework for conceptualizing the transition to college. This framework highlights areas for higher education researchers to study and understand how students arrive at their college choices, emphasizing specific areas for policy intervention that may help students make their college choices. Specifically, our goals in presenting this framework are (1) to reconcile existing college choice models with an expanding research base on how students navigate various paths to college and (2) to create a productive guide for scholars and policymakers working to understand and help a diverse population of students as they move along these paths. This framework is designed to be student-centered and provide the flexibility to accommodate the fact that a student's path to college may not be linear, direct, or automatic, and that the college "choices" students have available to them may be illusory or stratified by social class (Dougherty, 2024). Moreover, it has the flexibility to work in tandem with existing conceptual models, like that described by Perna (2006).

The Predominant Approach for Studying College Choice

The model of college choice that most scholars turn to is the three-phase model developed by Hossler and Gallagher (1987; see also Bergerson, 2009; Cabrera & La Nasa, 2000; Perna, 2006; Plank & Jordan, 2001). Scholars often pair the three-phase model with the unified conceptual model proposed by Perna (2006), which holds the three-phase model at its core, or similar combinations of sociological and economic theory. In the three-phase model, Hossler and Gallagher assert that college choice proceeds in three phases: predisposition, search, and choice (see Figure 1). The *predisposition* phase covers the development of a student's aspirations to earn a college degree; the *search* phase encompasses a student's efforts to gather information about the college options and narrow down a list of colleges to apply to; and the *choice* phase involves a student choosing where to enroll among the options available to them. Befitting the model's publication in the journal associated with the American Association of Collegiate Registrars and Admissions Officers, the three phases highlight the portions of the college enrollment process that were important for enrollment managers, emphasizing points where recruitment efforts could influence students' decision process, but necessarily leaving out portions of the path to college students follow that are outside the purview of the work of admissions professionals. This recruitment perspective limits the model's value to scholars who want to understand the way students themselves experience the path to college. Simply put, an understanding of the three phases was meant to help institutions efficiently target the students who were predisposed to college at the time those students were most receptive to outside influence, when they were gathering information and choosing among college options.

[Insert Figure 1 Here]

Limitations of the Three-Phase Model

Hossler and Gallagher's (1987) model creates several challenges for current scholars working to understand how students navigate the transition from high school to college. To start, the model highlights only three broad stages, making it elegant and easy to describe, but this simplicity de-emphasizes elements of the process that are important for understanding key parts of students' paths to college. For example, the three-phase model does not mention the completion and submission of applications, instead implying that this activity must happen between the search phase, when students decide where to apply, and the choice phase, when they decide where to enroll. However, virtually no student can enroll in college without applying for admission (Cabrera & La Nasa, 2001; Klasik, 2012; Roderick et al., 2008). Moreover, race-based disparities in where students enroll in college appear to originate as differences in where students apply (Holzman et al., 2020), so an understanding of the application submission process may be more important than understanding how students decide where to enroll once they have been admitted.

The absence of a clear discussion about the specific steps students must complete to enroll in college is not an oversight; rather, it highlights the enrollment-management perspective of Hossler and Gallagher's model. Hossler and Gallagher adapted their model from earlier models of college choice (e.g., Jackson, 1982; Kotler, 1976; Litten, 1982) that also relied on a marketing and enrollment-management perspective. For example, Jackson (1982) included student achievement as a model element—not as an outcome that opened or closed various college enrollment opportunities, but as an important correlate of who aspired to a college degree, with the implication that college recruiters should focus their efforts on higher-achieving

students. This enrollment-management focus continued to be reflected in uses of the three-phase model, as seen in Paulsen's (1990) review of the college search literature (Bergerson, 2009).

Thus, it makes sense that scholars who invoke the three-phase model appear to struggle to make it fit with the student-centered perspective that is now more common in higher education research. For example, both Cabrera and La Nasa (2000) and DesJardins et al. (2006) ground their studies of application to college in the three-phase model but conceptually place application submission in different phases (choice and search, respectively), with little consequence to their empirical findings. Other studies of college choice invoke the three-phase model without clear connections between the model and the elements of the college choice process they investigate (e.g., Holzman et al., 2020; Klasik, 2012). These perfunctory applications of the three-phase model highlight that college-choice scholarship is now focused on questions that are not accommodated by the enrollment-management perspective on which the model was based.

Another challenge of the three-phase model is its assumption that students move toward college enrollment in three discrete, sequential phases. Strictly speaking, this assumption means that there are just two exit points from the college choice process for students to decide not to pursue postsecondary education. The first is after the development of the initial predisposition for college—a student may learn from their life experiences prior to a college search that they do not want or have the means to enroll. The second is after the search phase, when "if there are no colleges which meet their expectations…some students may select non-college options" (Hossler & Gallagher, 1987, p. 214). That is, students with a predisposition toward college may still decide not to enroll if they cannot find a college they like. This offramp is broad in what it includes, allowing for students not to enroll in college for any reason, ranging from conducting a

narrow search and not finding a college they like to conducting a thorough search and not finding a college they believe they can afford.

The assumption of discrete, consecutive phases also limits the possibility of different phases of the model influencing each other, a limitation exacerbated by the implication that, during the search phase, students actively search for information about colleges. This does not leave room for a student who had *not* initially been predisposed to attend college to receive information about college—for example, from a counselor or an online advertisement—and reconsider their aspirations. In other words, passive receipt of information, which is not typically part of an active college search, may lead a student to reconsider a previous predisposition toward college enrollment, whether it is the decision to attend at all or the inclination to attend an institution of a certain level or selectivity. Without allowing the different phases to influence one another, traditional models of college choice assume linearity from the development of college aspirations to eventual enrollment. Students may enter the college choice process at different decision points and complete the various steps in a nonlinear way (e.g., developing aspirations after outreach from a counselor).

A final regular criticism of many college choice models is that they do not leave room for an understanding of how students can experience college choice differently depending on their racial or ethnic background (e.g., Acevedo-Gil, 2017; Bergerson, 2009; Cox, 2016; Freeman, 1997, 1999; Perna, 2006) or whether they do not enroll in college immediately after high school (Iloh, 2018). Critical race theories, such as Yosso's theory of community cultural wealth, argue that much of the conversation about students of color is deficit-based and fails to recognize the cultural assets they leverage in education (2005). There may be no such thing as a comprehensive college choice model that fits all students (Hossler et al. 1999; Plank & Jordan,

2001; Perna, 2006). Many college choice theorists focus on the factors that contribute to the participation of White, typically privileged, students in the college admissions process (Freeman, 1997) or treat certain minoritized groups as monolithic (Teranishi et al., 2004), which has led to gaps in understanding about the motivations and aspirations of marginalized students (Hossler et al., 1989; Freeman, 1997).

Limitations of Search

Many of the limitations of the three-phase model arise from shortcomings with the search phase, in particular. Few scholars would disagree that both a predisposition to college and eventual enrollment are vital parts of a student's trajectory toward college. However, too much conceptual burden is placed on the search phase—the only phase between these natural bookends to the process. Far more happens between predisposition and enrollment than is easily captured by a phase that nominally represents the search for information about colleges. Although it may have been intended to capture more activities than how scholars currently interpret it, most research on the search phase focuses on the number and sources of information students consult during their college search (Perna, 2006). At a time when scholars are working to understand more of the barriers that shape whether and where students enroll in college, this narrow view of search is not adequate in guiding research that is relevant for policy and practice.

One example of where these limitations of the three-phase model collide with recent advances in our understanding of whether and where students enroll in college is taking college entrance exams. The three-phase model does not address taking the SAT or ACT, but it does consider academic performance—reflected through measures like grades—as an important part of the predisposition phase in the sense that higher-ability students are more likely to attend college (Hossler et al., 1989; Hossler & Gallagher, 1987). On the one hand, the placement of

taking the SAT or ACT in the predisposition phase is an interpretation that could be supported by recent research that shows that students who are state-mandated to take the SAT or ACT are more likely to enroll in four-year colleges (Hurwitz et al., 2015; Hyman, 2017; Klasik, 2013). Although it is difficult to tease out the mechanism through which state-mandated testing affects postsecondary enrollment, the findings may suggest that taking the SAT or ACT helps some students develop four-year college aspirations. On the other hand, in the absence of a state-wide requirement to take one of these college entrance exams, students likely only take the SAT or ACT if they have an existing desire to attend college—there are few uses for the exams that do not involve college enrollment. The fact that taking these exams necessitates some predisposition to college is evidence that suggests test-taking belongs in the search phase. However, placing college entrance exams in a phase focused on gathering information about potential colleges to apply to is problematic because taking the SAT or ACT provides both students and colleges with information about students' potential for college work, but it does not provide students with information about colleges themselves. Thus, taking the SAT or ACT appears to have no obvious home in the three-phase model.

Given its importance between predisposition and choice, the search phase does not appear to get the research attention it deserves. There is a recurring refrain in college choice research that the search phase is the most understudied phase of the three-phase model (e.g., Hossler et al., 1989; DesJardins et al., 2006; Hossler et al., 1999; Klasik, 2012; Perna, 2006). Whether this sentiment is true, or whether scholars do relevant work in this area but have a hard time categorizing that work in the underspecified confines of the search phase, is open for debate. It is at the very least troubling that there appears to be so little attention given to this vital portion of the college choice process.

Adjustments to the Three-Phase Model

We are not the first to identify shortcomings and offer improvements to the three-phase model, nor will we be the last. For example, Cabrera and La Nasa (2000) elaborated measurable outcomes for each of the three phases, aligned the phases with grade levels to emphasize when each occurs, and developed a conceptual map linking the college choice model to increasingly well-established factors, such as socioeconomic status and academic ability, to explain students' movement through the process.

Over time, scholars have sought to adapt the model to better capture the process of the average student and account for the various forces that shape their choices. This effort was consolidated by Perna's (2006) conceptual model that highlighted the economic and sociological factors that help shape students' college choices. Perna solidified the theoretical backdrop of the college choice process by reviewing and unifying theories scholars had used to explain students' movement through the three-phase process. Most notably, she emphasized the different layers of influence that shape students' college choices, including concerns about students' sociodemographic background; their access to various forms of social and cultural capital; the context of their school and community; the efforts of colleges to recruit students; and, finally, the broader social, economic, and political environment. These layers coalesced a large body of scholarly theory into a unified conceptual model of college choice but left unchanged the three-phase model at the core. The multi-layer model allowed researchers to pay more attention to the factors that shape individual students' trajectories toward college without interrogating the underlying three phases.

DesJardins et al. (2006) added the additional consideration of financial aid to the model of college choice. They argued that no model of college choice could be complete without

considering applications for financial aid in addition to applications to college. This point received empirical support with the findings that not only did students' financial aid awards shape their enrollment decisions, but the *expectation* of aid shaped where students *applied* to college (DesJardins et al., 2006).

Toutkoushian and Paulsen (2016) extended the three-phase model by codifying application and admission as distinct portions of the process. In doing so, they clarified that the list of colleges a student develops during their initial search may not be the list to which they ultimately apply. Further, by highlighting the admissions stage, they formalize the role colleges play in determining the ultimate set of schools from which a student can choose to enroll.

Building on research that notes that the Hossler & Gallagher model inadequately considers the decision-making processes, enrollment patterns, and school and community contexts of students of color, Acevedo-Gil (2017) drew upon Perna (2006), as well as Anzáldua's concept of *conocimiento* (2002)—an awareness of themselves and the world that people living under oppression develop—to propose a college *conocimiento*, a college choice framework explicitly designed for Latino/a students. The model includes steps similar to Hossler and Gallagher's three phases but includes planning and applying to college as a separate step, as well as adds steps in which students anticipate barriers, deal with conflicts between their aspirations and lived realities, and advocate for themselves and seek support. The model has the feature of being nonlinear, and it is flexible to students revisiting previous steps at any time.

Iloh (2018) proposed a model of college-going decisions and trajectories that abandons entirely Hossler and Gallagher's three phases in an attempt to accommodate the varied, nonlinear paths post-traditional students take into (and sometimes back into) college. Rather than three phases, this model emphasizes the three interacting contexts of time, information, and

opportunity, which shape whether, when, and where a student enrolls (Iloh, 2018). This model of decision-making provides enormous flexibility in its ability to describe the varied routes students take to college, though in doing so it abstracts away from many of the specific activities of college choice.

Thus, updates to the three-phase model have either made incremental refinements to the specificity of the model (Cabrera & La Nasa, 2000; DesJardins et al., 2006; Toutkoushian & Paulsen, 2016), added theoretical heft to an unchanged three-phase core (e.g., Perna, 2006), or abstracted away from the process model to allow greater sensitivity to diverse college-going paths (Iloh, 2018). Grounded in a review of recent literature, our goal here is to find a middle ground that accommodates current research knowledge about the important elements of students' college choices, maintains the theoretical contributions of previous work, and is flexible enough to describe the college trajectory of a wide range of students. In the model we propose, we aim to highlight important intermediate outcomes that influence the educational trajectories of students in different ways. The model emphasizes the non-linearity of students' paths (e.g., Acevedo-Gil, 2017), highlighting the enduring importance of students' college enrollment expectations, and aligns well with the instrumental theoretical layers elaborated by Perna (2006). Conceptualizing students' paths in this way should support and target new efforts to improve students' college choices and reduce gaps in enrollment with the stratified hierarchy of higher education in the U.S. By clarifying the college choice process in this new way, we aim to draw attention to portions of the process that have been underspecified in previous models.

Model Elements

A graphical representation of the model is presented in Figure 2. The model has six main elements—expectations, academic preparation, information seeking, college knowledge,

application, and enrollment—which we describe in turn. The elements of our model are not a simple checklist that, when completed, will result in a student enrolling in college. Rather, they highlight important pieces of the college choice process that play varying roles in a student's path to college enrollment. Also key to understanding this model is that rather than being a "series of choices" (Perna, 2006, p. 126), these elements are neither a "series" nor do they always involve "choice." Each element is related to the others and, except for the final acts of applying to and enrolling in college, the elements can alter a student's path to college throughout high school, if not earlier. The distinct roles each element plays in a student's path, and the ways the elements interact with each other, help us better understand variation in college enrollment choices. These differences arise, in part, from individual choices, but those choices are often constrained by structural barriers and obstacles to opportunity (Hearn, 1991; Kurlaender & Hibel, 2018; Plank & Jordan, 2001). Students' college choices are shaped by the resources surrounding them, including those available in families, schools, and communities (McDonough, 1997). Finally, as elaborated below, the elements are not necessarily dichotomous. For example, the issue is not simply whether a student possesses college knowledge, but rather the nature and quality of the knowledge, which can greatly influence their trajectory toward college.

[Insert Figure 2 Here]

This model owes much of its stated and unstated theoretical context to the integrated conceptual model outlined by Perna (2006). That is, based on the wide body of literature we have reviewed here, it is clear that students engage with our model elements in a complex environment of contextual factors that shape the nature of that engagement. Perna (2006) categorizes the layers of these contextual factors as a student's habitus—their sociodemographic background, including sources of social and cultural capital; their school and community context

and the resources they offer; their higher education context, including the work that colleges do to recruit students and students' nearby college options; and their social, economic, and policy context, which includes broader trends in these categories. As we outline below, the existing literature demonstrates the importance of these factors for many of the elements of our model. Indeed, we imagine our model elements functioning as the "college choice" process at the heart of Perna's nested layers.

Expectations

Fundamental to previous models of college choice are elements that describe a student's predisposition for college, which is often operationalized as the student's aspirations for college. However, the continued utility of this framing is unclear because college aspirations have become nearly ubiquitous (Goyette, 2008; Jacob & Linkow, 2011; Klasik, 2012; Plank & Jordan, 2001; Roderick et al., 2011) and may no longer differentiate students in ways that are meaningful to understanding their path to college.

Although researchers have used terms like "aspirations" and "expectations" interchangeably (Perna, 2006), we make the deliberate choice to emphasize whether and where a student *expects* to enroll in college. Expectations differ from aspirations in that *aspirations* generally refer to what students would like to achieve in an ideal world, while *expectations* are based on more realistic predictions of what students feel they are likely to accomplish or on their understanding of perceived barriers (Goyette, 2008; Jacob & Linkow, 2011; Reynolds & Pemberton, 2001). For example, expectations may not reflect what students want or can do academically, but rather structural constraints, such as the ability to pay for college or the information and support to which they have access. This distinction means that students generally aspire to college at higher rates than they expect to go to college (Baird et al., 2008;

Kirk et al., 2011). Moreover, because of their grounding in what a student views as possible, expectations can be adjusted with new information and outside influences (Jacob & Linkow, 2011; Kirk et al., 2011; Reynolds & Pemberton, 2001), making expectations more appealing than aspirations as an area of study and intervention.

Like educational aspirations, expectations are shaped by a wide variety of individual, social, and environmental factors. These include a student's academic ability (Jacob & Linkow, 2011; Kirk et al., 2011, Pitre, 2006); family structure, parental involvement, and parental expectations (Goyette, 2008; Kirk et al., 2011; Reynolds & Pemberton 2001; Wahl & Blackhurst, 2000); race/ethnicity, socioeconomic status, and gender (Baird et al., 2008; Wahl & Blackhurst, 2000); location (Jacob & Linkow, 2011; Kirk et al, 2011; Turley, 2009); and high school factors like teacher expectations, counselors, and college-going cultures (Goyette, 2008; Jacob & Linkow, 2011; Kirk, et al. 2011; Roderick et al., 2011; Wahl & Blackhurst, 2000).These external factors can enhance or constrain what students see as desirable and possible.

Beyond shifting to expectations from aspirations, we build on previous models to highlight that students may have different expectations across a number of dimensions. First, expectations may vary in terms of both the level and selectivity of the college a student wishes to attend, ranging from expecting to earn a certificate from a technical or vocational school to completing a bachelor's degree from an Ivy League university. Second, expectations may vary in terms of their specificity—some students may only know they want a college degree, while others may know the specific school they want that degree from.

Additionally, although a body of research has worked to identify when and how college aspirations and expectations first develop, we are more concerned with the evolution of expectations over the course of a student's path to college. This distinction emphasizes that a

student does not need to expect to earn a postsecondary degree in order to enroll in college. However, it is likely that the earlier and more specific a student's expectations for college are, the better prepared they will be able to navigate the remainder of the college choice process. For example, students who develop plans to attend college later in school are less likely to apply to a four-year institution (Grodsky & Riegle-Crumb, 2010) and are more likely to enroll in community college (Bers & Galowich, 2002). Indeed, students with early expectations for college are more likely to realize those expectations through educational attainment (Jacob & Linkow, 2011). This may, in part, be because students who expect to attend college put more effort into their high school work and clearly understand the connection between academic performance and future success (Domina, Conley, & Farkas, 2011). These findings illustrate Morgan's theory of preparatory commitment (2002), which predicts that students with concrete commitments to the idea of college enrollment are more likely to engage in the behaviors that will help realize that commitment, such as completing college preparatory coursework, meaningfully searching for college information, and signing up to take the SAT or ACT. Indeed, Grodsky and Riegle-Crumb (2010) found that students who always wanted to go to college—in contrast to those who first thought about college in elementary, middle, or high school (or never)—earned higher grades, took more advanced math classes, and were more likely to take a pre-college entrance exam (PSAT, PACT).

However, the relationship between college expectations and the subsequent behaviors that lead to their realization does not appear to hold equally for all students. For example, there is often a mismatch between the college expectations and academic preparation of Black (Pitre, 2006; Wahl & Blackhurst, 2000) and Latino/a (Martinez & Cervera, 2012) students. This disparity is also reflected in the greater mismatch between expectations and attainment for

students of color than White students (e.g., Jacob & Linkow, 2011; Kurlaender & Hibel, 2018). These differences by race and ethnicity highlight that although college expectations are important to successful college enrollment, students face different barriers, structural and otherwise, in realizing those expectations.

Academic Preparation and the Development of "Admissions Capital"

Academic preparation includes all of the elements that can help a student develop academic qualifications and readiness for college. It has typically included the specific coursework a student completes, as well as measures of their academic performance, like grades and test scores (Perna, 2005). Academic preparation is a well-known predictor of college enrollment (e.g., Adelman, 1999; Berkner & Chavez, 1997; Cabrera & La Nasa, 2000; Klasik 2012, Perna & Kurban, 2013; Plank & Jordan, 2011), but it has typically been left in the background of most college choice models. For example, Hossler and Gallagher (1987) viewed academic performance as a factor associated with a student's predisposition to college, with academic performance predicting predisposition. Alternatively, Toutkoushian and Paulsen (2016) saw academic preparation activities as something a student with a predisposition to college might engage in after they decided to enroll.

In reality, academic preparation has a complicated relationship with the college choice process, making it worth bringing to the fore in a college choice model. In fact, there is evidence for both Hossler and Gallagher's (1987) and Toutkoushian and Paulsen's (2016) characterizations of the interaction between expectations and academic preparation: academic preparation can provide students with information that leads them to update their college expectations (Jacob & Linkow, 2011), and students with college expectations are more likely to engage in academic preparation activities (Morgan, 2002). It is also possible for students to

prepare academically for college without expecting to enroll—as long as they take high school coursework, they potentially develop the qualifications for college enrollment. Regardless of whether a student has strong academic qualifications, like high grades and rigorous coursework, the presence of college expectations may help students make more strategic and beneficial academic decisions.

Although it has not explicitly been a part of most college choice models, the connection between academic preparatory behaviors like high school course-taking and performance and college choice is well-known (e.g., Adelman, 1999; Berkner & Chavez, 1997; Klasik, 2012). Scholars also know that other parts of academic preparation, such as taking the SAT or ACT, are linked to college choices. For example, when students are required to take the SAT or ACT, they are more likely to enroll in four-year institutions (Hurwitz et al., 2015; Hyman 2017; Klasik, 2013). Additionally, policies that make it easier to take the exam and send scores to colleges make it more likely that students enroll in college (Bulman, 2015, Pallais, 2015).

Our definition expands on these well-known facets of academic preparation for college by including all the activities a student completes that are evaluated by an admissions office. Conceived in this way, it may be helpful to think of this model element as *admissions capital* development—the work that students do to develop the credentials that hold value in the college admissions process but may not hold value in other settings. Note that for a student on track for enrollment in a broad-access college, where admissions standards are relatively basic, admissions capital development may resemble previous portrayals of academic preparation. Such a student likely only needs to meet minimum course-taking or GPA requirements. Conversely, admissions capital development may be very elaborate for a student who expects to attend an Ivy League university. In this case, the development of admissions capital may include advanced

coursework, SAT tutoring, and extensive extracurricular and leadership activities—activities that may increase a student's perceived value, but not necessarily their academic potential, to admissions officers at highly selective institutions. Students with the means to do so often turn to private admissions consultants for help in this process (McDonough, 2005; McDonough et al., 1997).

Thus, the development of admissions capital is valuable for students in three related ways. First, it prepares students to be successful in college. The particular courses that students take, such as whether those courses are advanced (e.g., honors, Advanced Placement, International Baccalaureate), along with their GPAs and test scores, not only predict students' readiness for college-level coursework but also their likelihood of persisting in college and completing a degree (e.g., Adelman, 1999, 2006; Klasik & Strayhorn, 2018, Kurlaender & Howell, 2012; Long, Conger, & Iatarola, 2012; Perna, 2005; Porter & Polikoff, 2011). Second, by creating a record of academic performance that can be compared to other college-bound students and the published admissions criteria of colleges, admissions capital can help students set their expectations for college enrollment (Jacob, & Linkow, 2011). Finally, the more admissions capital students have, the more selective the colleges they will likely have access to (e.g., Attewell & Domina, 2008; Belasco & Trivette, 2015; Bowen et al., 2009; Ovink et al., 2018; Roderick et al., 2011; Smith et al., 2013).

Of course, not all students have the same opportunities to develop admissions capital. At the most basic level, some parts of admissions capital—such as whether a student's parents graduated from the college to which they are applying, thereby giving the student an admissions boost as a legacy applicant (Hurwitz, 2011)—are immutable. Other challenges to the development of admissions capital are structural (Kurlaender & Hibel, 2018). There is a wide

variety in the course offerings and opportunities at different schools, with more opportunities generally available at schools serving higher-income students (Adelman, 1999; Conger et al., 2009; Iatarola et al., 2011). Even within schools, racial and socioeconomic segregation in course-taking persists (Attewell & Domina, 2008; Kelly, 2009; Riegle-Crumb & Grodsky, 2010), which leads to measurable differences in college enrollment (Attewell & Domina, 2008). Finally, even when students have agency in developing their own admissions capital, their ability to do so depends on whether they understand which qualifications will prepare them for college and are appealing to admissions offices.

College Knowledge

College knowledge encompasses a familiarity with the college application and admissions process (e.g., Cabrera & Padilla, 2004; Hooker & Brand, 2010; Plank & Jordan, 2001), as well as an understanding of the costs and benefits of higher education (e.g., Bell et al., 2009)—why college matters, how to choose colleges, what is required for admission, important deadlines and the availability of fee waivers, and how much college is likely to cost. College knowledge helps students decide whether to enroll in college and enables them to navigate the process of doing so. This type of knowledge is distinct from the knowledge generated during Hossler and Gallagher's search phase. Whereas the primary activity of the search phase is gathering college information to determine the list of schools to which to which a student will apply (Hossler & Gallagher, 1987), *college knowledge* refers to the understanding that helps students find and effectively use that information—not all students may possess the knowledge to engage in a productive college search.

In many ways, college knowledge is a focused version of St. John et al.'s idea of academic capital—knowledge relating to the "navigation through educational systems and

professional organizations" in the pursuit of academic and career goals (2011, p. 1). Central to the idea of academic capital is the importance of families and communities in passing it on across generations (St. John et al., 2011). Parents are often a source of support that helps build college knowledge (Perna & Titus, 2005). Students can also acquire college knowledge from their schools, which is often necessary when their parents do not possess such knowledge, as is common in families in where parents did not attend college (Choy, 2001), in immigrant families (Cabrera & Padilla, 2004), or in lower-socioeconomic status (SES) families (McDonough, 1997; Perna, 2006).

High school counselors are a particularly important source of college knowledge (Belasco, 2013), and their work in developing such knowledge has been tied to nearly every part of the college choice process, including shaping expectations (Holcomb-McCoy, 2010; McDonough, 2005), supporting academic preparation (Brown & Trusty, 2005; McDonough, 2005), helping students gather information about colleges (Hossler et al., 1999), and assisting with application submission (Bryan et al., 2011). Counselors are also important in setting school-wide college-going cultures, where whole schools work toward promoting college enrollment (Corwin & Tierney, 2007; Roderick et al., 2011). However, just as access to college knowledge from families can be limited, so too can access through schools. It is often the same students who have limited access to college knowledge at home who also face restricted access within their educational environments (Belasco, 2013; McDonough, 1997, 2005; Tierney & Venegas, 2009).

We distinguish two forms of college knowledge, *explicit* and *heuristic*. Explicit college knowledge refers to knowing facts about the college choice process in general or at specific institutions. Studies of this form of knowledge have demonstrated that racial and ethnic minorities and individuals from lower socioeconomic backgrounds often have inaccurate

information about the high school course requirements for college entry (Venezia & Kirst, 2005) and tuition costs (Avery & Kane, 2004; Grodsky & Jones, 2007; Nienhusser & Oshio, 2017; Venezia & Kirst, 2005; Velez & Horn, 2018).

Heuristic college knowledge refers to knowing how to navigate the college choice process, including how to identify colleges that are a good academic and social fit, how to apply to colleges and for financial aid, and where to go for information or support. For students of color and others from marginalized populations, this may include elements of Yosso's concept of navigational capital (2005), which emphasizes the skills needed to navigate social institutions not originally created with them in mind. Heuristic knowledge is closely related to the "contextual skills and awareness" dimension of Conley's college and career readiness framework (2010), which includes an awareness of the higher education landscape, the procedures and requirements for admission, the financial costs, and the norms required for success on campus. While Conley's dimension is useful, we consider knowing how to navigate the college choice process distinct from knowing how to be a successful college student. We also believe it is important to highlight the value of knowing *how* to utilize resources (e.g., family members, school staff) and to take strategic action to enhance one's knowledge. A student who, for example, understands the limits of their explicit knowledge may meet with their high school guidance counselor to learn more about the admissions requirements for the state public flagship or how to apply for need-based financial aid.

Explicit and heuristic college knowledge are related, but they differ in nature: the former is based on knowing simple facts, while the latter reflects an understanding of the college choice process and how to navigate it successfully. College knowledge has no intrinsic value, but we consider it a form of cultural capital since it can be used to gain access to information or

opportunities that can enhance one's educational options (Lareau & Weininger, 2003). Although college knowledge can emerge from information-seeking behaviors, it may also result from having parents or other close social ties who attended college (e.g., St. John et al., 2011). In other words, the development of college knowledge, perhaps more so than the other elements in our model, is not something a student does in isolation, but rather a social effort that reflects the cultural knowledge of a student's family, school, and community (St. John et al., 2011; Tierney & Venegas, 2009). The more college knowledge a student has, the better prepared they will be able to navigate the various requirements of the college application process.

Information Gathering and the Development of the Application Set

Information gathering captures much of what has been commonly understood as the search phase of Hossler and Gallagher's original three-phase model. It includes the variety of activities students undertake to learn more about specific colleges and develop lists of colleges to which they plan to apply. This may include talking to college admissions counselors or representatives, visiting campuses, or requesting information online. Like other model elements, there are constraints to students' information-seeking. The challenge lies not only in knowing how to find information about colleges, but also in understanding the types of information that will be most useful in helping a student decide where to apply. Thus, a student's set of possible college options, and, perhaps, sources they consult to gather information about the process, can be limited by individual, social, and contextual factors.

In order for students to choose among the thousands of college options available to them, the search for information about potential institutions must be constrained. These decisions are made based on the information students possess—which may be limited or imperfect—and the resources they have available to sort through their many possible options (McDonough, 1997).

This idea mirrors decision-making research, in which individuals often start by narrowing the total set of potential options to those they are aware of, and then determine other decision rules to reduce their choice set further (e.g., Hauser & Wernerfelt, 1990; Roberts & Lattin, 1991; Swait & Erdem, 2007). Learning how students gather this information and ultimately develop their application set requires understanding what the decision rules are and where students get their information from.

In many cases, the set of colleges a student considers may be reduced through factors outside of their direct control. For example, the initial narrowing of options to just those a student is aware of might result from the uneven distribution of colleges across the country, which leaves some students with more and higher-quality options nearby (Hillman, 2016). This awareness may be further limited if the information a student receives about college from family community members is limited to local options (St. John et al., 2011). If a student's college awareness is restricted to nearby institutions, then the spatial distribution of colleges can constrain their search inequitably, unless they proactively search beyond their immediate vicinity. There is evidence that students consider colleges farther away when their local college options are limited in terms of the number of public, broad access options, but not when they are limited in terms of the number of colleges that are academically matched to student's qualifications (Klasik et al., 2018).

The work of admissions offices themselves may also constrain the set of colleges that students are aware of. For example, as colleges send admissions representatives to college fairs and high schools across the U.S., they tend to focus on non-rural areas and high schools with wealthier and less racially-diverse student bodies (Salazar et al., 2021). Additionally, colleges often purchase mailing lists from major college entrance exam companies, which can omit

students who do not have records with those companies or who may not score high enough to meet the search criteria that colleges adopt (Jaquette & Salazar, 2024). In both cases, rural, racially-minoritized, and lower-income students are systematically excluded from colleges' efforts to promote themselves.

Beyond any initial awareness students have about colleges, they may expand or contract the set of colleges they consider based on any number of preferences, including geography, cost, size, level, and selectivity (Hossler et al., 1999; Long, 2004; Niu & Tienda, 2007; Rouse, 1995; Turley, 2009; Skinner, 2019). For example, there is evidence that Latino/a students are more likely than White or Black students to consider it important to live at home during college (Desmond & Turley, 2009).

The search for information about colleges is shaped, in part, by parents, peers, and counselors (Belasco, 2013; Hossler et al., 1999, St. John et al., 2011). If a student knows few people in their social networks who have attended college, the information they gather may be limited and, potentially, unhelpful or inaccurate. There is no single way to engage in the information-seeking process, and not all students have access to the same sources; it can vary considerably depending on contextual forces (Bergerson, 2009; Iloh, 2018).

Application and Admission

Although it may seem self-evident, a student generally cannot enroll in a college to which they have not applied. As a result, submitting college applications is a vital part of the college choice process. Indeed, research suggests that concerns like academic undermatching (Smith et al., 2013) and racial and socioeconomic stratification (Holzman et al., 2020) arise at the point of application rather than enrollment. Applications can range from relatively straightforward forms, involving basic demographic information and high school transcripts, as is required by many

community colleges, to more complex submissions that request detailed accounts of extracurricular activities, essays, and recommendation letters, as required by colleges with competitive admissions processes. The difficulty of completing college applications likely increases with institutional selectivity. Regardless of where a student applies, elements of the application itself may be obstacles to whether a student applies to a specific college (Klasik, 2012; Smith et al., 2015).

Until Toutkoushian and Paulsen (2016) highlighted it in their update of the college choice model, it was not clear where the act of applying to college appeared in other models. For example, Cabrera and La Nasa (2000) placed college application in Hossler and Gallagher's choice phase, while DesJardins et al. (2006) considered it part of the search phase. In our model, we consider the submission of college applications as the culmination of students' admissions capital development, college knowledge, and information gathering, as well as a reflection of their educational expectations. Indeed, it is at this stage when differences in how students have engaged with these elements become most concrete. For example, Holzman et al. (2020) show that race- and income-based gaps in achieving the academic qualifications for college are strongly associated with gaps in college application behaviors.

Given rising college costs (Ma et al., 2024) and changing attitudes about whether higher education is a worthwhile investment (e.g., Klineberg, 2018; Mitchell & Belkin, 2017), need- and merit-based financial aid are important considerations during the college application step. A majority of high school graduates , 73 percent, who applied to college also applied for financial aid (Ross et al., 2012). While they often require separate forms, college and financial aid applications are tightly linked: students generally apply to colleges and for need- and merit-based financial aid concurrently. Because they are so closely related, we consider college and financial

aid applications part of the same phase. However, the unique challenges associated with applying for financial aid (e.g., Bettinger, Long, Oreopolous, & Sanbonmatsu, 2012; Dynarski & Scott-Clayton, 2006) may lead students to submit college applications without applying for financial aid, even if they would likely qualify (Tierney & Venegas, 2009).

Once students have applied to college, it is up to the institutions to decide whether to offer them an opportunity to enroll. At less selective colleges, admission may largely be a formality, whereas decisions at more selective colleges can be difficult to predict. While most students who apply to college are accepted somewhere (e.g., Klasik, 2012; Holzman et al. 2020; Roderick et al., 2011), students who are better able to target their applications to colleges where they align with admissions standards are more likely to receive multiple offers. Because of the importance of how colleges weigh different admissions factors (Bastedo et al., 2018; Hossler et al., 2019; Reardon et al., 2018; Rosinger et al., 2021), their decisions about whom to admit are enormously consequential for where students have an opportunity to enroll. Since students can only enroll in colleges to which they are admitted, admissions gaps are strongly correlated with enrollment gaps (Holzman et al., 2020).

Enrollment

Finally, students must choose where to enroll in college—or whether to enroll at all. As the culmination of the college choice process, this element is universal across all previous models. Students may enroll in any college that has admitted them. When a student is admitted to a single college, the decision becomes less about where to enroll and more about whether to enroll. Additionally, students' choices may be constrained by the amount of financial aid they are offered; enrollment at some institutions may not be viable if the student cannot afford to attend.

It is not inevitable, however, that the decision to apply to college results in enrollment (Klasik, 2012), nor is it inevitable that accepting an admission offer implies a student will attend the next academic term. Research on summer melt has shown that, for graduating high school seniors accepted to college, the summer months remain a period of continuing college choice (Castleman & Page, 2014). Students, particularly those from less privileged backgrounds, may decide not to enroll, or be unable to do so, due to unforeseen barriers like not acquiring sufficient financial aid or failing to complete the necessary paperwork for matriculation. While we consider enrollment the culmination of the college choice process, we acknowledge that there are additional decision points between accepting an offer and showing up to school on the first day of class.

Model Interactions

The elements of our model represent conceptually distinct pieces of the process that can lead to college enrollment, but they are by no means independent of one another. The elements can interact in important, reinforcing ways. For example, as we have described, a student with well-formed expectations of college enrollment can more deliberately engage in the work of admissions capital development. They may also be more likely to seek college knowledge and gather information about potential places to apply. Likewise, a student may develop college expectations after performing well in their coursework (admissions capital development), learning more about the value of college enrollment (college knowledge), or being inspired by information about a particular college (information gathering).

Just as college expectations influence, and are influenced by, a student's admissions capital, college knowledge, and information gathering, so too does this trio influence one another. Collectively, these three elements form a set of *college capital* that students use to

inform and support their college choices. For example, a student developing admissions capital in a college-preparatory course may learn important college knowledge from their college-bound peers or information gathering tips from their teacher. Students with more college knowledge will more effectively develop admissions capital because they know more about the qualities that colleges value in their applicants. They may also conduct more effective searches because they have a better understanding of the characteristics that differentiate colleges. Finally, students who gather information about specific colleges may also develop college knowledge from observing common patterns of application requirements at the schools they are considering. This knowledge may help them understand how to generate admissions capital that can increase their chances of admission.

A student's college expectations and development of college capital culminate, if they choose to pursue enrollment, in the submission of college applications. At that point, the college choice process becomes path dependent—an application is either accepted or rejected (a distinction that may take time to resolve if the student is waitlisted), and a student can then choose to enroll based on that decision.

Our goal in highlighting the elements of this model is not to suggest that all students experience them in the same ways, or that engaging in them necessarily leads to college enrollment, but that *how* any student engages with them will have a meaningful impact on whether and where that student enrolls in college.

Timing and Intention

The relative sequencing of our model elements is largely nonlinear. Because of how expectations interact with the development of admissions capital, college knowledge, and information gathering, there is no way to assert that one element must precede the others. Prior

research suggests that the development of elements like admissions capital and information gathering may be more efficient and effective if they follow the development of expectations (e.g., Hossler et al., 1989; Klasik, 2012; Roderick et al., 2011), but this sequencing is certainly not necessary. What appears clear is that students must expect to go to college in order to ultimately enroll, and that greater levels of college capital increase the likelihood that students will apply and make their enrollment expectations a reality. In other words, students may develop expectations and college capital in a nonlinear fashion, but the result of that process is application to college, followed, potentially, by enrollment.

Just as the model elements that precede application submission need not occur in a particular order, they also need not be intentional. For example, a student can work hard to develop admissions capital without expecting to enroll in college—it is possible that following a high school's regular graduation requirements will lead a student to complete the coursework and earn the GPA that qualifies them for postsecondary enrollment. Students may also passively receive information about colleges and the application process (Hossler et al., 1999). Although it may seem that submitting a college application requires an expectation that a student attends, this link is becoming tenuous. The increasing prevalence of college application drives in which application fees are waived (e.g., College Foundation of North Carolina, n.d.) and policy discussions about whether high school students should be required to submit a college application in order to graduate (Hudetz & Lee, 2018) suggest that students may apply to college without firm expectations. Despite these efforts, it is probably true that college applications will be more successful and more likely to result in enrollment if a student has had some deliberate engagement with the college capital development process. Certainly, no student can enroll in

college without applying, and no student will enroll in college if they do not have college enrollment expectations.

Our model also applies to post-traditional students—those who delay their college enrollment after high school or have adult responsibilities, such as raising children and financial independence from parents. For example, Latino/a students are less likely than any other racial or ethnic group to attend college immediately after completing high school (Hurtado et al., 1997). In these cases, the model elements remain unchanged, but the conditions under which students engage with them differ from those typically addressed in college choice research. Admissions capital, for instance, may still matter for post-traditional students, but it cannot be developed in the same way as a student still in high school. Moreover, the schools that post-traditional students consider may not value the same forms of admissions capital as those considered by traditional college students. These differences require rethinking what each model element means in the context of any given student applying to college.

A Research and Policy Agenda

The six elements of our college choice model highlight promising areas for future research, as well as opportunities for programs and policies to help students make informed college choices. One topic for additional inquiry is determining how different pathways lead to distinct postsecondary destinations. For example, can a student with expectations of enrolling in a highly selective college fulfill those expectations with low levels of college knowledge? What sorts of colleges do students with high levels of admissions capital but late-developing expectations enroll in? Do these different pathways help explain persistent gaps in college enrollment selectivity? Research is also needed to examine how the various model elements interact with and reinforce one another. How does the development of admissions capital update

college expectations? To what extent does gathering information about colleges spur a student to develop their admissions capital?

Answers to these questions are essential as stakeholders work to develop policies and interventions that can reduce the barriers students face as they progress toward college enrollment. For instance, a deeper understanding of how knowledge about the college application process encourages students to develop admissions capital, and in turn, how this shapes their college destinations, could greatly inform the types and timing of information provided to students. Further investigations of the connections between the trio of college capitals may enable program providers to support students in preparing for college and keeping their options open, even if they do not yet expect to earn a college degree. These insights could also guide efforts to assist students in reaching more selective colleges and avoiding academic undermatching.

Given advances in college choice research, an evolving population of college-going students, and growing attention to the importance of not just whether but where students enroll in college, it is time to rethink the college choice process and reorient it more toward a student-centered perspective. To this end, our model provides a clearer starting point for researchers to understand a more authentic and nuanced process that ends with students enrolled in college, regardless of level or selectivity.

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Figure 1. Hossler and Gallagher's (1987) three-phase model of college choice.

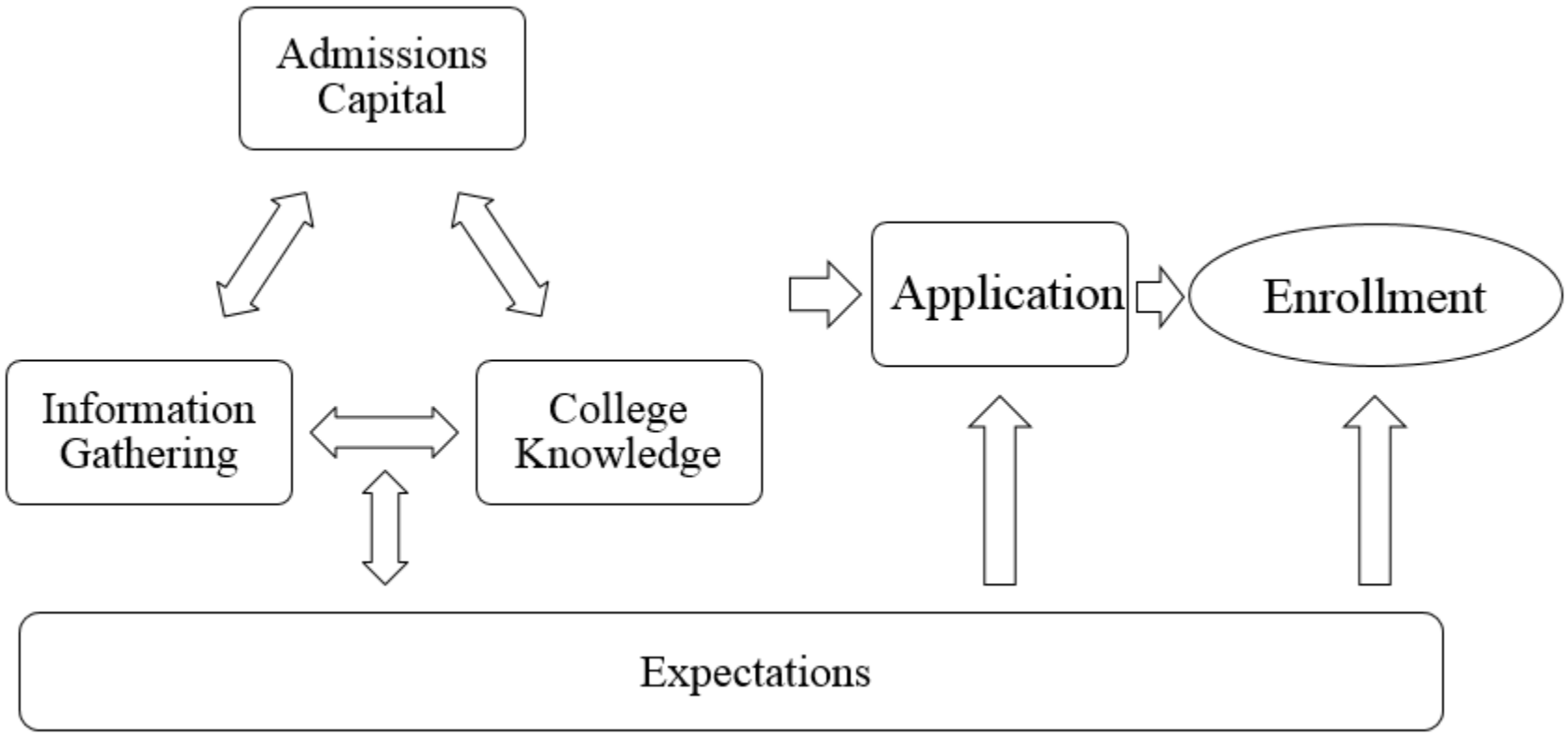

Figure 2. Re-conceptualized model of college choice.