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## Understanding networks of natural mentoring support among underrepresented college students

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### ABSTRACT

Naturally-occurring mentoring relationships with caring, nonparental adults can provide critical support to underrepresented students during the transition to college. The current study sought to examine the nature of underrepresented students' relationships with natural mentors during their first three semesters in college. Results revealed that participants perceived greater relational closeness with natural mentors who were extended family members or family friends compared to natural mentors from other categories (e.g., natural mentors who were teachers). Moreover, natural mentors who were extended family or family friends provided greater levels of emotional, appraisal, informational, and instrumental support to students relative to natural mentors who were former teachers or other school staff. Natural mentors who were college faculty or staff provided more informational support than natural mentors who were family or family friends. Findings have implications for understanding intergenerational mentoring relationships that may promote resilient outcomes among underrepresented students transitioning to elite, predominantly white colleges and universities.

Underrepresented college students face substantial obstacles to attaining a four-year college degree. In the United States, students from historically underrepresented racial or ethnic minority groups (i.e., black/African American, Latino/Hispanic American, Native American/Alaskan Native, Native Hawaiian/Pacific Islander) and first-generation college students tend to have lower rates of enrollment in and attendance at four-year colleges (Castleman & Page, 2014; Wilds, 2000) and substantially higher rates of dropping out of college (Castleman & Page, 2014; Ishitani 2006; National Center for Education Statistics, 2003). A number of factors play a role in these low college graduation rates, including financial difficulties that interfere with paying for school (Somers, Woodhouse, & Cofer, 2004), experiences of stereotyping and marginalization (Stebbleton, Soria, & Huesman, 2014; Steele, 1997), and a lack of a sense of belonging at predominantly white, upper-middle class institutions (Cohen & Garcia, 2008). Taken together, these barriers to a college education place marginalized young adults at greater risk of unemployment, poverty, and an array of mental and physical health problems across their life course, all of which serve to maintain and widen social inequality.

To address these issues, research has sought to identify factors that promote positive educational outcomes among underrepresented college students. One promising promotive factor during the transition to college involves close relationships with caring nonparental adults from youths' pre-existing social networks, which have been described in the literature as natural mentors (Zimmerman, Bingenheimer, & Behrendt, 2005). Natural mentoring relationships arise organically through the process of mutual selection and are often adults from youths' neighborhoods, schools, and extended family or fictive kin networks. Because both youth and mentor "opt into" the relationship through a mutual sense of connection, these relationships are likely to last longer and serve as a more enduring source of support than assigned, formal mentoring relationships (Hurd & Zimmerman, 2010; Zimmerman et al., 2005).

Naturally-occurring mentoring relationships can provide support across several critical domains that are particularly relevant during the transition to college. The transition to adulthood represents a period of increased risk for many young adults, as individuals achieve new levels of independence while simultaneously making

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consequential academic, social, and vocational decisions (Arnett, 2000; Masten et al., 2004). Coupled with this greater sense of independence are documented increases in engagement in risky behaviors, such as substance use and risky sexual behavior, as well as elevated rates of anxiety and depression, which have their highest incidence rate in this developmental period (Kessler, Foster, Webster, & House, 1992). In addition to these normative developmental experiences, underrepresented college students at predominantly white institutions face even greater obstacles to a successful transition to adulthood, as they encounter a host of additional stressors throughout their academic and social lives. Exposure to marginalizing experiences, including discriminatory experiences, such as being stereotyped by peers and faculty (Smith, Allen, & Danley, 2007; Swim, Hyers, Cohen, Fitzgerald, & Bylsma, 2003) and frequent microaggressions (i.e., interactions that intentionally or unintentionally communicate slights or insults about an individual's marginalized identity group, Sue et al., 2007), can leave underrepresented students feeling socially isolated (Cohen & Garcia, 2008; Smith et al., 2007; Steele, 1997). This context of marginalization serves as a chronic source of stress that can, in turn, interfere with the emotional health and academic success of underrepresented students (Harrell, 2000).

During this period of elevated risk and responsibility, natural mentors can serve as a crucial source of support, guidance, and encouragement (Hurd & Zimmerman, 2010). Natural mentors are thought to provide practical advice and support, while also shaping an emerging adult's expectations about the future and sense of identity (Greeson, 2013). Evidence supports these theories about the positive impact of natural mentors during the transition to adulthood. Emerging adults who are able to identify at least one supportive adult within their social network show reduced risk-taking behavior, improved psychological functioning, and greater resilience across a wide variety of academic, behavioral, and health domains (Dubois & Silverthorn, 2005; Fruht & Wray-Lake, 2013; Hurd, Sánchez, Zimmerman, & Caldwell, 2012). Moreover, these benefits of natural mentoring relationships appear to extend to the unique stressors encountered by underrepresented college students. Interaction with natural mentors predicts reduced psychological distress and better academic outcomes in samples of young adults from underrepresented backgrounds (Erickson, McDonald, & Elder, 2009; Hurd, Tan, & Loeb, 2016; Hurd et al., 2012; Hurd & Zimmerman, 2010).

Despite this evidence for the importance of natural mentoring relationships during the transition to adulthood, much about these types of supportive relationships remains unknown. Theories of social support have long posited that there are multiple dimensions of support provided by the various members of one's social network (Barrera, Sandler, & Ramsay, 1981; Jacobson, 1986). Although theories vary somewhat, most identify four key sub-dimensions of social support: emotional support and encouragement, provision of information, provision of tangible aid or assistance, and appraisal or self-esteem support (Barrera et al., 1981; Cutrona & Russell, 1987). Each member of a youth's social support network might touch on these subtypes of social support to different degrees, and the various subtypes also appear to have unique associations with diverse psychosocial, academic, and health outcomes (Cheng, 1998; Cutrona & Russell, 1987).

Variability in social support provision is likely to be particularly characteristic of natural mentoring relationships during adolescence and emerging adulthood. Due to their informal nature, natural mentoring relationships vary widely in content and structure, with multiple natural mentors from different contexts (e.g., home, neighborhood, school) often present within a youth's support network. As a result, different mentors likely serve diverse functions in terms of the types of support perceived by the youth. For example, youth might tend to seek emotional support and companionship from mentors who are extended family members and close family friends (Wellman & Wortley, 1990), while seeking instrumental aid or informational guidance (e.g., on college applications) from teachers (Furman & Buhrmester, 1985). However, these issues have not yet been explored with respect to natural mentoring relationships, with few studies soliciting information about the specific content of mentoring. Moreover, studies often examine only a single natural mentoring relationship per youth, rather than accounting for an individual's entire network of mentors, thereby preventing exploration of variability across types of mentors.

As a result, it is unclear how types of support and levels of closeness might vary across different mentors within an emerging adult's social network. In addition, research has often failed to examine these questions within samples of underrepresented students, who might face greater difficulties with adjusting to shifting social support networks as they transition to college at elite, predominantly white institutions. During the transition to college, close ties with supports from one's high school and home community

often weaken (Rios-Aguilar & Deil-Amen, 2012), while the formation of close relationships with on-campus adults, such as faculty and staff, is thought to be particularly important for college success (Baker, 2013; Crisp & Cruz, 2009; Stanton-Salazar, 2011). Yet, evidence suggests that under-represented college students might be less likely than their peers to engage in extended, supportive interactions with key adults on college campuses (Museus & Quaye, 2009; Tinto, 1994).

The current project examined the specific types of support provided by natural mentors in a unique sample of young adults from underrepresented backgrounds who were transitioning to college at an elite, predominantly white institution. Specifically, participants included students who identified with underrepresented racial/ethnic minority groups, first-generation college students, and students whose families are economically disadvantaged. Students were followed longitudinally and asked about support provided by up to five natural mentors at three time points during their first two years of college. This design allowed us to capture new mentoring relationships that might have developed during the first few semesters of college, while at the same time accounting for multiple mentors within a student's social network.

In addition to providing descriptive information about the types of natural mentoring support provided by each young adult's social network, analyses explored two main questions. First, we tested whether natural mentors in different social roles (e.g., college professor versus family friend) provided different kinds of social support to young adults, and whether different mentor social roles were associated with varying degrees of closeness within the mentoring relationship. Consistent with the literature on adolescent social development, we hypothesized that young adults transitioning to college would be more likely to receive emotional or appraisal support and experience higher levels of closeness in mentoring relationships with close family members or friends (e.g., Wellman & Wortley, 1990), while receiving instrumental or informational support, and reporting lower levels of closeness, in relationships with academic or other professional staff mentors, such as high school and college teachers (e.g., Fruht & Wray-Lake, 2013; Furman & Buhrmester, 1985).

Second, we examined whether certain types of support from a natural mentor were associated with greater relationship closeness. According to theories of intergenerational mentoring relationships, relationship

closeness is a prerequisite for the positive effects of mentoring on youth development (Rhodes, 2005). Consistent with this idea, closer mentoring relationships tend to last longer (DeWit et al., 2016) and predict more positive developmental outcomes during young adulthood (Dubois & Silverthorn, 2005; Hurd, Varner, & Rowley, 2013; Hurd & Sellers, 2013; Wittrup et al., 2016). Thus, identifying the types of social support that promote greater feelings of closeness, trust, and mutuality between young adults and their natural mentors is crucial for understanding what types of support are most valuable in facilitating college retention and success among underrepresented students.

## Method

### *Participants and procedure*

Participants for the current study were drawn from a larger sample of 340 underrepresented undergraduate students (69% female) attending a selective, public predominantly white university in the southeastern United States. At the time of the study, approximately 59% of the overall student body at the participating university identified as white American, with 13% identifying as Asian American, 6% as black/African American, 6% as Hispanic American/Latino, 4% as multiracial, and less than 1% each as Native American or Native Hawaiian/Pacific Islander. Approximately 11% of the first-year class consisted of first-generation college students (i.e., they were the first in their families to attend college), and approximately 13% of first-year students were Pell Grant (need-based financial aid) recipients.

Students were eligible to participate in the larger study if they indicated on their college application that they were first-generation college students, a member of an underrepresented racial/ethnic group (i.e., African American, Latino, Native American/Alaskan Native, Native Hawaiian/Pacific Islander), or qualified for the full amount of the federal Pell grant (and indicator of financial need). Participants over 18 years of age provided informed consent. Participants under 18 provided assent, and consent was obtained from their parents or guardians.

Students provided information about their relationships with natural mentors via self-report questionnaires at three time points throughout their first two years of college: in the Fall and Spring of their first year, as well as the Spring of their second year. Participants took about an hour, on average, to complete surveys for study and were compensated with a

\$20 Visa gift card in the Fall 2013 and Spring 2014 semesters, and a \$25 Visa gift card in the Spring 2015 semester.

Past literature has pointed to sufficient mentoring relationship duration as a key determinant of youth outcomes (Grossman & Rhodes, 2002; Hurd & Zimmerman, 2014; McLearn, Colasanto, & Schoen, 1998). As a result, only natural mentors who were endorsed across more than one wave were included in present analyses, in order to test our hypotheses within natural mentoring relationships that persisted longer than one semester and thus, were likely to be of consequence to youth development. This yielded a sample of 200 student participants who reported on a total of 367 natural mentoring relationships (each student participant could identify as many as five natural mentors at each wave of data collection). In the analytic sample, 74.5% of participants were female (24.5% male), 49.5% were first-generation college students, and 72.5% identified as an ethnic or racial minority (33.5% Black/African American; 26.5% White/European American; 17.0% multiracial; 13.5% Asian American; 9.0% Latino/Hispanic; 0.5% Native American).

## Measures

*Natural mentoring support.* Each semester, participants were asked, “Other than a parent or person who raised you, is there an adult who is older and more experienced than you who you go to for support and guidance? This could be an adult you knew before coming to college or an adult you have met since being at college. Do not include friends or romantic partners.” If participants responded in the affirmative, they were then asked, “How many adults like this do you have?” Response options ranged from “one” to “six or more.” Subsequently, participants were asked a series of questions about support received from each mentor identified (up to a total of five mentors) in the past 30 days.

These support constructs were assessed using a modified version of Barrera’s Inventory of Socially Supportive Behaviors (ISSB; Barrera et al., 1981). This support measure yields four perceived support subscales, assessed using four items each: *informational support* (e.g., taught you something;  $\alpha$ ’s across three waves = .87, .90, .92), *instrumental support* (e.g., loaned you something;  $\alpha$ ’s = .75, .77, .80), *emotional support* (e.g., listened to you talk about feelings;  $\alpha$ ’s = .87, .89, .90), and *appraisal support* (e.g., let you know you did something well;  $\alpha$ ’s = .90, .92, .94). Given that natural mentors were identified at multiple time points,

subscale totals were averaged across waves for each relationship to provide a more stable estimate of each type of social support received from that mentor. If a natural mentor was identified as important at a particular wave, but the participant had not been in contact with that mentor in the past 30 days, support and conflict subscales were coded as “0” for that wave.

*Natural mentoring closeness.* At each wave, participants were asked “How close do you feel to [mentor’s name]” for each identified mentor. Responses ranged from 1 “not close at all” to 5 “very close”. Given that natural mentors were identified at multiple time points, the closeness score was averaged across waves for each relationship to provide a more stable estimate of relationship closeness.

*Natural mentor social role.* Participants were asked to identify how they knew each natural mentor. Responses were coded according to four types of potential natural mentor social roles: extended family member or close family friend; teacher or staff from the participant’s elementary, middle, or high school; faculty or staff from the participant’s college; professional (e.g., religious leader, therapist/counselor, employer); or other (e.g., friend’s parent, private music teacher).

*Covariates.* All analyses included the following covariates, reported by the participant: participant gender (female or other gender = 0, male = 1), participant race/ethnicity (0 = student of color, 1 = white), and the participant’s total number of reported mentors. Including these covariates allowed us to examine associations among mentor social role, social support types, and relationship closeness, over and above the effects of participant demographic characteristics that might influence the presence and nature of natural mentoring relationships. For example, the unearned advantages associated with identifying as white within a predominantly white institution can shape access to naturally-occurring mentors within one’s college or university (Jones, Castellanos, & Cole, 2002; Rankin & Reason, 2005). Likewise, there is some evidence that female youth might be more likely to report having a natural mentor, and to report higher levels of closeness and emotional support within their relationships with natural mentors (Raposa, Erickson, Hagler, & Rhodes, 2018).

## Analytic procedure

We conducted hierarchical linear modeling (HLM) analyses to account for nesting of mentors within participants by estimating both within-student (Level 1) and between-student (Level 2) error variances



**Table 1.** Descriptive information for mentors' social roles and support types across time.

<i>Mentor Social Roles across Waves</i>					
	Family/Family friend	Past School Staff	Univ. Staff	Other Professional	Other
Year 1 Fall	51.1	23.2	8.9	10.0	6.7
Year 1 Spring	50.6	19.8	9.8	12.1	7.6
Year 2 Fall	56.0	20.4	10.0	11.6	2.0
<i>Intercorrelations among Study Variables across Study Waves</i>					
Year 1 Fall	Year 1 Spring	Year 2 Fall			
informational	.44***	.37***			
instrumental	.47***	.42***			
emotional	.53***	.43***			
appraisal	.48***	.39***			
closeness	.63***	.58***			
<i>Means (SD) for Social Support and Closeness across Waves</i>					
	Year 1 Fall	Year 1 Spring	Year 2 Fall		
informational	1.82 (1.11)	1.61 (1.13)	1.49 (1.17)		
instrumental	1.30 (.81)	1.21 (.88)	1.13 (.90)		
emotional	2.04 (1.29)	1.83 (1.30)	1.66 (1.30)		
appraisal	2.10 (1.26)	1.89 (1.31)	1.74 (1.31)		
closeness	4.21 (.89)	4.08 (.83)	4.08 (.85)		

Note. \*\*\* $p < .001$ .

(Raudenbush, Bryk, & Congdon, 2004; Raudenbush & Bryk, 2002). First, mentor social role was entered as a Level 1 predictor of type of support received, as well as mentoring relationship closeness. The following is an example of these HLM functions:

$$\begin{aligned}
 \text{EMOTSUPPORT}_t &= \pi_0 + \pi_1(\text{ROLED1}_t) \\
 &+ \pi_2(\text{ROLED2}_t) + \pi_3(\text{ROLED3}_t) + \pi_4(\text{ROLED4}_t) + e_t \\
 \pi_{0j} &= \beta_{00} + \beta_{01}(\text{GENDER}_j) + \beta_{02}(\text{TOTALNMS}_j) + \beta_{03}(\text{RACE}_j) + u_{0j} \\
 \pi_{1j} &= \beta_{10} \\
 \pi_{2j} &= \beta_{20} \\
 \pi_{3j} &= \beta_{30} \\
 \pi_{4j} &= \beta_{40}
 \end{aligned}$$

EMOTSUPPORT<sub>t</sub> represents the amount of perceived emotional support for a particular mentor. Student race (RACE<sub>j</sub>), gender (GENDER<sub>j</sub>), and total number of natural mentors (TOTALNMS<sub>j</sub>) were included as student-level covariates on Level 2. Based on a priori hypotheses, mentor social role was represented by four dummy codes (D1: 1 = high school teacher or staff; D2: 1 = professional staff, such as religious leaders or counselors; D3: 1 = college faculty or staff; D4: 1 = other social role), with family or close family friend as the reference group. However, we also provide a supplementary table presenting results for these models when other mentor social roles are coded as the reference group for those interested in other pairwise comparisons.

Next, the associations between each type of mentor support and relationship closeness were tested in two ways. First, mentor closeness was predicted from each support domain, again co-varying for the effects of student race, gender, and total number of reported natural mentors. Given the relatively high correlations among the mentor support variables (see Table 1),

separate models were run for each type of support (i.e., emotional, informational, instrumental, appraisal) to prevent problems due to multicollinearity (see the following example HLM function).

$$\begin{aligned}
 \text{CLOSENESST}_t &= \pi_0 + \pi_1(\text{EMOTSUPPORT}_t) + e_t \\
 \pi_{0j} &= \beta_{00} + \beta_{01}(\text{GENDER}_j) + \beta_{02}(\text{TOTALNMS}_j) \\
 &+ \beta_{03}(\text{RACE}_j) + u_{0j} \\
 \pi_{1j} &= \beta_{10}
 \end{aligned}$$

Second, we ran analyses using person-centered support variables to predict mentor closeness. This method allows for the disaggregation of within-student (i.e., related to a particular mentor) and between-student (i.e., similar across all mentoring relationships for a particular student) effects of perceived support on mentoring relationship closeness (Mroczek & Almeida, 2004; Raudenbush & Bryk, 2002; Scholz, Kliegel, Luszczynska, & Knoll, 2012). Importantly, these analyses control for participant differences in tendencies to receive or perceive support across relationships. For example, it is possible that some individuals are more likely to elicit emotional support or to perceive high levels of emotional support from others regardless of who they are interacting with, compared to other individuals. Thus, person-centering allowed us to look at mentor-specific variations from a person's average receipt of support. An example of the HLM functions used for this set of analyses is shown as follows.

$$\begin{aligned}
 \text{CLOSENESST}_t &= \pi_0 + \pi_1(\text{EMOTSUPPORTWI}_t) + e_t \\
 \pi_{0j} &= \beta_{00} + \beta_{01}(\text{GENDER}_j) + \beta_{02}(\text{TOTALNMS}_j) \\
 &+ \beta_{03}(\text{RACE}_j) + \beta_{04}(\text{EMOTSUPPORTBW}_j) + u_{0j} \\
 \pi_{1j} &= \beta_{10}
 \end{aligned}$$

The Level 1 (mentor-level) predictor of interest, perceived emotional support, was person-centered,

such that  $EMOTSUPPORTWI_t$  represents within-student fluctuations in perceived emotional support around the student's average level of perceived emotional support across all mentors. That is, a participant's average level of emotional support across natural mentors was subtracted from their report of emotional support from each particular mentor. The between-student effects of emotional support on relationship closeness ( $EMOTSUPPORTBW_j$ ) are included as a predictor of the intercept on Level 2.

## Results

Table 1 presents descriptive information about natural mentors' social roles and types of support provided during each of the three waves of data collection. The types of social roles identified for participants' natural mentors remained relatively stable across time. Overall, the majority of natural mentors reported by students across all waves were extended family members or close family friends, with school staff from elementary, middle, and high school the second most frequently endorsed mentor type. Across waves, approximately 10% or less of the natural mentors identified were faculty or staff from the college/university. The remainder of the natural mentors were professionals within the student's community, such as religious leaders or counselors, or adults that fell into an "other" category, which included social roles such as a friend's parent or private music teacher. Table 2 contains descriptive statistics and correlations across key study variables. Across all natural mentors, participants reported high levels of closeness, with an average closeness rating of 4.10 out of 5 ( $SD = .77$ ).

Levels of each type of social support provided by mentors were highly consistent across waves (all  $r > .36$ , all  $p < .001$ ; see Table 1) and were, therefore, averaged for subsequent analyses. The most frequent type of natural mentor support received within the month previous to assessment, on average, was appraisal support, followed by emotional support, informational support, and then instrumental support. Repeated measures ANOVA with a Greenhouse-Geisser correction, as well as post hoc tests using the

**Table 2.** Descriptive statistics and correlations among key study variables.

Variable	Mean	SD	Range	1	2	3	4
1. Informational support	1.65	0.96	0 to 5				
2. Instrumental support	1.22	0.73	0 to 4.13	.91**			
3. Emotional support	1.85	1.11	0 to 5	.89**	.88**		
4. Appraisal support	1.92	1.09	0 to 5	.93**	.91**	.95**	
5. Closeness	4.1	0.77	2 to 5	.21**	.32**	.31**	.32**

Note. \* $p < .05$ . \*\* $p < .01$ .

Bonferroni correction, revealed that average levels of support were significantly different across these domains, with levels of each type of support significantly larger than levels of the next most common type ( $F(2.26, 450.08) = 224.00$ ,  $p < .001$ ;  $\eta^2 = .53$ ; all post hoc  $p < .001$ ). However, it is important to note that all of these average scores fall between "not at all" and "just a little" on a 5-point scale for support received in the previous 30 days, and average reports of perceived support types were highly correlated.

### Mentor social role and relationship support and closeness

Mentor social roles were tested as predictors of the types of support most frequently provided by natural mentors, as well as relationship closeness, co-varying for participant gender, participant race/ethnicity, and total number of mentors (Table 3). During the first three semesters of college, natural mentors who were teachers and staff from school prior to college (e.g., high school) were less likely to provide all four types of support (i.e., emotional, informational, appraisal, and instrumental) relative to natural mentors who were extended family or family friends (all  $p < .001$ ). In addition, faculty and staff from students' current college provided *more* informational support than extended family or family friends during this time period ( $b = .41$ ,  $SE = .17$ ,  $p < .05$ ). Finally, as expected, participants reported greater levels of closeness with natural mentors who were extended family or family friends, relative to all other social roles (all  $p < .001$ ).

### Types of mentoring support and perceived closeness

Analyses revealed that all types of support predicted greater feelings of closeness with one's mentor, co-varying for participant gender, participant race/ethnicity, and total number of mentors (see Table 4). Students reported higher levels of closeness with natural mentors who they perceived as providing higher levels of emotional ( $b = .20$ ,  $SE = .04$ ,  $p < .001$ ), appraisal ( $b = .21$ ,  $SE = .04$ ,  $p < .001$ ), informational ( $b = .15$ ,  $SE = .05$ ,  $p < .01$ ), or instrumental ( $b = .32$ ,  $SE = .06$ ,  $p < .001$ ) support.

Next, analyses were run predicting closeness from person-centered support variables, in order to account for individual differences in average levels of perceived mentor support (see Table 5). Person-centered support analyses revealed that receiving greater than average appraisal support ( $b = .17$ ,  $SE = .07$ ,  $p < .01$ ),

**Table 3.** Effects of mentor social role on levels of relationship support and closeness.

	Emotional support			Appraisal support			Informational support			Instrumental support			Closeness		
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
Former school staff	−0.85	0.14	<.001	−0.86	0.14	<.001	−0.73	0.12	<.001	−0.59	0.09	<.001	−0.44	0.09	<.001
Other professional	−0.20	0.19	.290	−0.29	0.19	.120	−0.10	0.16	.520	−0.18	0.12	.110	−0.70	0.12	<.001
College staff	0.26	0.20	.190	0.12	0.20	.540	0.41	0.17	<.050	0.01	0.12	.920	−1.18	0.13	<.001
Other role	0.31	0.25	.210	0.16	0.26	.530	0.18	0.21	.410	0.11	0.16	.470	−0.65	0.18	<.001
Male	−0.15	0.16	.370	−0.09	0.16	.550	0.05	0.14	.730	−0.01	0.10	.890	0.13	0.10	.200
White	−0.16	0.15	.300	−0.21	0.15	.170	−0.18	0.13	.160	−0.16	0.10	.120	−0.13	0.09	.160
# of natural mentors	0.02	0.04	.640	0.01	0.04	.180	0.02	0.04	.640	−0.01	0.03	.700	0.07	0.03	<.010

Note. The reference group for mentor social role comparisons is extended family member or family friend.

**Table 4.** Effects of mentoring support types on relationship closeness.

	<i>b</i>	<i>SE</i>	<i>p</i>		<i>b</i>	<i>SE</i>	<i>p</i>		<i>b</i>	<i>SE</i>	<i>p</i>		<i>b</i>	<i>SE</i>	<i>p</i>
Male	0.09	0.11	.400	Male	0.08	0.11	.430	Male	0.04	0.11	.71	Male	0.07	0.11	.510
White	0.03	0.10	.730	White	0.04	0.10	.670	White	0.03	0.10	.77	White	0.05	0.10	.630
# of natural mentors	0.05	0.03	.070	# of natural mentors	0.05	0.03	.060	# of natural mentors	0.05	0.03	.06	# of natural mentors	0.06	0.03	<.050
Emotional support	0.20	0.04	<.001	Appraisal support	0.21	0.04	<.001	Informational support	0.15	0.05	<.01	Instrumental support	0.32	0.06	<.001

emotional support ( $b = .17$ ,  $SE = .07$ ,  $p < .01$ ), and instrumental support ( $b = .27$ ,  $SE = .11$ ,  $p < .05$ ) from a particular mentor predicted greater closeness with that mentor. That is, regardless of the average levels of support a particular student tended to receive in these domains across the multiple mentors in their support network, higher than average levels of support from a particular mentor in each of these domains predicted greater closeness. In contrast, within-student variations in informational support ( $p = .29$ ) did not have unique effects on closeness with that mentor, when co-varying for the average level of informational support a student tended to receive across all mentors in their network.

## Discussion

The current study sought to examine the nature of relationships and types of support that underrepresented college students received from networks of natural mentors during their first three semesters in college. Descriptive results revealed that adult relatives (e.g., aunts, uncles, grandparents) and close family friends from home continued to comprise the majority of natural mentoring relationships among under-represented college students as they transitioned through their first two years of college, and appraisal support was the most common type of support students reported receiving from their natural mentors (followed by emotional support, then informational support, and then instrumental support). Hierarchical linear models showed that participants felt a greater degree of closeness in natural mentoring relationships with family or family friends, relative to

mentors from other social groups. Moreover, among mentoring relationships from a student's home community, natural mentors who were extended family members or family friends appeared to provide greater levels of support (across all four categories of support) to underrepresented students relative to support provided from natural mentors who were students' former teachers, coaches, or extracurricular activity leaders. No differences in levels of support were observed when comparing natural mentors who were college faculty/staff or community professionals (e.g., religious leaders) to natural mentors who were family members or family friends, with one key exception: students reported that natural mentors who were faculty and staff from college provided more informational support than natural mentors who were family members or family friends.

Overall, findings suggest that although students continue to identify their former teachers and school staff (e.g., coaches, band directors) as natural mentors, these pre-college relationships are providing lower levels of support relative to mentors who are family members or family friends. These findings are consistent with past research with adolescents showing that supportive relationships with high school teachers or coaches weaken somewhat during and after the transition to college (Rios-Aguilar & Deil-Amen, 2012). In contrast, bonds with extended family members and family friends from home might be more durable, given the centrality of these relationships within an emerging adult's social network. Such relationships with kin and fictive kin are thought to serve as "strong ties" that are more adaptable and less vulnerable to weakening in the face of major life transitions



**Table 5.** Person-centered effects of mentoring support types on relationship closeness.

	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>			
Male	0.10	0.11	.380	Male	0.09	0.11	.400	Male	0.04	0.11	.690	Male	0.07	0.11	.490
White	0.04	0.10	.700	White	0.05	0.10	.630	White	0.04	0.10	.700	White	0.05	0.10	.600
# of natural mentors	0.05	0.03	.070	# of natural mentors	0.05	0.03	.060	# of natural mentors	0.05	0.03	.060	# of natural mentors	0.06	0.03	<.050
Average emotional support	0.21	0.05	<.001	Average appraisal support	0.23	0.05	<.001	Average informational support	0.18	0.06	<.001	Average instrumental support	0.34	0.07	<.001
Within-person emotional support	0.17	0.07	<.010	Within-person appraisal support	0.17	0.07	<.010	Within-person informational support	0.08	0.08	0.290	Within-person instrumental support	0.27	0.11	<.050

*Note.* For each person-centered model, average levels of each type of support (across all natural mentors) were calculated to represent the between-student effects of support type on general mentoring relationship closeness. Within-person support variables were person-centered, such that the last row for each model in the table above represents the within-student fluctuations in perceived levels of each support type around the student's average level of that support type across all mentors. This person-centered variable, to some extent, controls for a student's general tendency to engage in relationships marked by certain kinds of support, or to have biased perceptions of support receipt.

than ties with school personnel (Granovetter, 1973; Wellman & Wortley, 1990). Moreover, it might be easier for students to maintain frequent contact with extended family and family friends as they transition to college, either through other family members or during visits home. It is encouraging that students appeared to be continuing to access multiple types of support from familial/family friend natural mentors from their home communities, and to report particularly high degrees of closeness within these relationships, even as many move away from home to begin college. Support offered by close ties from home might help to mitigate distress and increase feelings of self-worth in the context of marginalizing experiences that underrepresented college students tend to face as they transition to and through college at predominantly white institutions (Berger & Milem, 2000; Hurd, Albright, Wittrup, Négréte, & Billingsley, 2017).

Students reported receiving informational support from faculty and staff at college more frequently than from familial/family friend natural mentors, despite the fact that these relationships were less relationally close and formed much more recently. This finding is consistent with a growing body of literature highlighting a key role for college faculty and staff as mentors to underrepresented students (e.g., Hurd et al., 2017; Stanton-Salazar, 2011). As students adjust to the social norms and academic rigors of college, it makes sense that they would turn to relationships with college faculty and staff more often for advice and suggestions about aspects of college life (e.g., course selection, research opportunities), especially if they are first-generation college students whose family members and/or friends from home might have limited exposure to aspects of a four-year college education. These close relationships with faculty and staff can play an important role in students' social and academic integration into college, as well as college persistence, at least in part because these adults serve as unique sources of institutional knowledge for students (Baker, 2013; Crisp & Cruz, 2009; Stanton-Salazar, 2011). Future research should further explore how exactly college faculty and staff provide informational support for underrepresented students, and the effects of this informational support on the process of adjusting to college. For example, specific advice around coping with race-related stressors might be one way in which natural mentors at college provide informational support regarding the discrimination and social isolation experienced by many underrepresented students at elite, predominantly white institutions (Griffith, Hurd, & Hussain, 2017).

The current analyses also examined whether certain types of natural mentoring support are associated with greater relationship closeness, given the strong links between mentoring relationship closeness and duration (DeWit et al., 2016; Rhodes, 2005), an important prerequisite for the effects of mentoring on developmental outcomes among emerging adults (Hurd & Zimmerman, 2014). Greater levels of all types of support predicted more perceived closeness with the natural mentor. Moreover, it is important to note that the types of support were also highly correlated with one another. Thus, findings suggest that enduring, supportive natural mentoring relationships likely provide access to most types of support, rather than exclusively providing one kind of help or advice.

Nevertheless, when person-centered analyses were used to account for each student's general tendency to perceive support from mentors, above average instrumental support, appraisal support, and emotional support in a particular natural mentoring relationship emerged as most strongly associated with relationship closeness. These analyses help to account for individual differences in perceptions of support across relationships. For example, it is possible that some individuals are less likely to elicit or perceive emotional support, regardless of who they are interacting with, compared to other individuals (e.g., because they are depressed or especially introverted). Thus, person-centering allowed us to look at how specific mentor-student relationships differ from a student's general tendency. Findings suggest that most types of support remain important for relationship closeness, even after person-centering; however, informational support was no longer a significant predictor of relationship closeness. Thus, receiving above average informational support from a particular mentor might be less important in fostering feelings of closeness to that particular mentor. Future research should further examine how mentoring relationships characterized by high levels of informational support might complement other types of social supports. It is likely that optimal outcomes are observed when an emerging adult can identify a diverse network of mentoring supports that includes both close relationships with extended family/friends and less emotionally close relationships with college faculty/staff who provide critical informational support (Granovetter, 1973; Stanton-Salazar, 2011).

Several limitations of the current study should be acknowledged. First, our sample was drawn from underrepresented students at a single predominantly white institution in the southeastern United States. Thus, replication across larger samples of students

and multiple institutions is necessary to determine whether findings would generalize to the experiences of underrepresented students across other predominantly white four-year institutions. In addition, current analyses examined average levels of natural mentoring support across time, given high correlations between variables at different time points during the study period (1.5 academic years). However, future studies would benefit from more fine-grained assessment of these constructs across longer spans of time. For example, it would be interesting to know how profiles of natural mentoring support shift from high school through the transition to college or from the transition to college through college graduation. Future research should use longitudinal designs to explore whether and how certain types of natural mentors (e.g., faculty mentors) or support (e.g., informational support) change in prevalence or importance across the college years and should also continue to explore whether support from mentors might more accurately be assessed as a single construct. The current analyses also focused on the support provided by natural mentors who were present in students' lives across multiple waves, given the evidence for the association between relationship duration and mentors' impact on youth developmental outcomes (e.g., Hurd & Zimmerman, 2014; McLearn et al., 1998). However, future studies should explore whether there are shorter-lived mentoring relationships (i.e., lasting less than one semester) that are nonetheless impactful for first-year students from underrepresented backgrounds as they transition to college. Finally, our analyses did not examine links between types of natural mentoring support and student outcomes. Nevertheless, growing evidence suggests that the support provided by natural mentoring relationships is of consequence for underrepresented students' adjustment to college (Hurd et al., 2017; Schwartz, Kanchewa, Rhodes, Cutler, & Cunningham, 2016), and that relational closeness is an important determinant of the potential impact of natural mentors on youth outcomes (Hurd et al., 2013; Hurd & Sellers, 2013; Hurd & Zimmerman, 2014; Wittrup et al., 2016). Additional research should seek to establish connections between specific dimensions of natural mentor support and diverse student outcomes (e.g., identity development, academic performance) in order to better characterize the functions served by these natural mentoring relationships and inform future intervention efforts.

Despite these limitations, this study is the first to describe the specific types of support provided by

networks of natural mentors to underrepresented college students during the transition to college, using assessment of multiple mentoring relationships per student. Findings contribute to our conceptual understanding of the specific functions that natural mentors play in the lives of marginalized emerging adults transitioning to college, as well as the types of mentoring support that promote feelings of trust and mutuality between emerging adults and natural mentors. Moreover, identification of the central functions of natural mentoring relationships can inform interventions designed to improve support for underrepresented students from key adults in their lives. Findings suggest that programming designed to foster mentoring relationships at college can provide underrepresented students with much-needed support as they transition to campus (e.g., Santos & Reigadas, 2002), and that such programming should include an expanded focus on networks of natural mentoring relationships, in addition to formal mentor pairings. In particular, encouraging close connections between underrepresented students and key institutional agents, such as college faculty and staff, can provide students with informational support regarding administrative processes and social expectations at predominantly white institutions (Collier & Morgan, 2008; Stanton-Salazar, 2011). Nevertheless, results suggest that it is also crucial to support the maintenance of students' natural mentoring relationships with extended family members and family friends from home, given the breadth and depth of support provided by these individuals. Stronger institutional support of broad natural mentoring networks in these ways is one important aspect of promoting resilient outcomes among underrepresented students as they encounter the array of stressors associated with transitioning to academic and social life at elite predominantly white institutions.

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Table S1. Effects of mentor social role on levels of relationship support and closeness with alternate reference group specifications.

	Emotional support <i>b</i>	Appraisal support <i>SE</i>	Informational support <i>p</i>	Instrumental support <i>b</i>	Closeness		<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
					<i>SE</i>	<i>p</i>									
Reference group: former school staff															
Family/Family Friend	0.85	0.14	<.001	0.86	0.14	<.001	0.73	0.12	<.001	0.59	0.09	<.001	0.44	0.09	<.001
Other Professional	0.65	0.20	<.001	0.58	0.20	<.010	0.63	0.17	<.001	0.41	0.13	<.001	-0.26	0.14	.050
College Staff	1.10	0.21	<.001	0.98	0.21	<.001	1.14	0.18	<.001	0.60	0.13	<.001	-0.74	0.15	<.001
Other	1.16	0.27	<.001	1.02	0.27	<.001	0.91	0.23	<.001	0.70	0.17	<.001	-0.22	0.19	.260
Male	-0.15	0.16	.370	-0.10	0.16	.550	0.05	0.13	.730	-0.01	0.10	.890	0.13	0.10	.200
White	-0.16	0.15	.300	-0.21	0.15	.170	-0.18	0.14	.160	-0.16	0.10	.120	-0.13	0.09	.160
# of Mentors	0.02	0.04	.640	0.01	0.04	.860	0.02	0.04	.640	-0.01	0.03	.700	0.07	0.03	<.010
Reference group: other professional															
Family/Family Friend	0.20	0.19	.290	0.29	0.19	.120	0.10	0.16	.520	0.18	0.12	.110	0.70	0.12	<.001
Former school staff	-0.65	0.2	<.001	-0.58	0.20	<.010	-0.63	0.17	<.001	-0.41	0.13	<.001	0.26	0.14	.050
College Staff	0.45	0.24	.060	0.41	0.24	.090	0.51	0.21	<.050	0.20	0.15	.200	-0.48	0.17	<.010
Other	0.51	0.30	.090	0.45	0.30	.140	0.28	0.25	.270	0.30	0.18	.110	0.05	0.21	.820
Male	-0.15	0.16	.370	-0.10	0.16	.550	0.05	0.14	.730	-0.01	0.10	.890	0.13	0.10	.200
White	-0.16	0.15	.300	-0.21	0.15	.170	-0.18	0.13	.160	-0.16	0.10	.120	-0.13	0.09	.160
# of Mentors	0.02	0.04	.640	0.01	0.04	.860	0.02	0.04	.640	-0.01	0.03	.700	0.07	0.03	<.010
Reference group: college staff															
Family/Family Friend	-0.26	0.20	.190	-0.12	0.20	.540	-0.41	0.17	<.050	-0.01	0.12	.920	1.18	0.13	<.001
Former school staff	-1.10	0.21	<.001	-0.98	0.21	<.001	-1.14	0.18	<.001	-0.60	0.13	<.001	0.74	0.15	<.001
Other Professional	-0.45	0.24	.060	-0.41	0.24	.090	-0.51	0.21	<.050	0.20	0.15	.200	0.48	0.17	<.010
Other	0.06	0.31	.850	0.04	0.31	.900	-0.24	0.26	.360	0.10	0.19	.600	0.53	0.21	<.050
Male	-0.15	0.16	.370	-0.10	0.16	.550	0.05	0.14	.730	-0.01	0.10	.890	0.13	0.10	.200
White	-0.16	0.15	.300	-0.21	0.15	.170	-0.18	0.13	.160	-0.16	0.10	.120	-0.13	0.09	.160
# of Mentors	0.02	0.04	.640	0.01	0.04	.860	0.02	0.04	.640	-0.01	0.03	.700	0.07	0.03	<.010
Reference group: other social role															
Family/Family Friend	-0.31	0.25	.210	-0.16	0.26	.530	-0.18	0.21	.410	-0.11	0.16	.470	0.65	0.18	<.001
Former school staff	-1.16	0.27	<.001	-1.02	0.27	<.001	-0.91	0.23	<.001	-0.70	0.17	<.001	0.22	0.19	.260
Other Professional	-0.51	0.30	.090	-0.45	0.30	.140	-0.28	0.25	.270	-0.30	0.18	.110	-0.05	0.21	.820
College Staff	-0.06	0.31	.850	-0.04	0.31	.900	0.24	0.26	.360	-0.10	0.19	.600	-0.53	0.21	<.050
Male	-0.15	0.16	.370	-0.10	0.16	.550	0.05	0.14	.730	-0.01	0.10	.890	0.13	0.10	.200
White	-0.16	0.15	.300	-0.21	0.15	.170	-0.18	0.13	.160	-0.16	0.10	.120	-0.13	0.09	.160
# of Mentors	0.02	0.04	.640	0.01	0.04	.860	0.02	0.04	.640	-0.01	0.03	.700	0.07	0.03	<.050