# Executive Summary

This emerging review of the literature on American Indian/Alaska Native students’ experiences in higher education provides an overview of three primary areas: 1) American Indian/Alaska Native representation in higher education, including their representation at the undergraduate, graduate, and professoriate level, 2) a summary of factors that are noted to influence persistence among American Indian/Alaska Native students, and 3) different theoretical and conceptual models are presented as instruments that can be used to fully understand the experiences of American Indian/Alaska Native students in higher education in general, and in STEM programs as graduate students, in particular.

**1. Representation in Higher Education**

Existing empirical research indicates that the enrollment rates of American Indian/Alaska Native students have increased over the last two centuries. However, several scholars contend that the American Indian/Alaska Native student population is considered the most underrepresented student population. Their underrepresentation encompasses all levels of higher education, – undergraduate, graduate, and professoriate. American Indian/Alaska Native students are also underrepresented in the STEM fields, as they are less likely to pursue STEM related majors when compared to their White and Asian American counterparts. Below are other points of importance found across the literature:

Undergraduate Education

* When compared to their White counterparts, American Indian students enroll into college after high school at a rate of 17% compared to the 67% rate of White students.
* In 2009, of the 17.6 million students enrolled in degree-granting institutions nation-wide, only 0.2 million were American Indian students, 60 percent of which were female.
* Rates of degree attainment appear to be effected by drop out as 12% of AI/AN students hold a bachelor’s degree among 25-34 year old young adults compared to 37% of white students despite similar application rates.

Graduate Education

* In 2011, approximately 65,356 American Indian and Alaska Native students over the age of 25 had graduate or professional degrees.
* The number of Native students at title 4 education institutions enrolled in a graduate program was .5% in 2011-2012.

STEM

* American Indian students are noted to perform better on SAT mathematical tests than Black and Latino students, they few enroll in STEM programs.
* Among the 22% of female and 28% of male students that earned a STEM bachelor’s degree in 2010, 21% of those students were female and 27% were male students of native indigenous/Alaskan native backgrounds.
* Compared to other ethnic and racial groups, less than 0.7 percent of American Indian students earn degrees in science and engineering.

Faculty

* A study lasting from 1991-2001 revealed that 1 percent of fulltime instructional faculty was compromised of American Indian/Alaskan native.
* In 2007 there were no American Indian women full professors in any of the top 100 research institutions.
* One-woman faculty member was reported at a top 100 chemistry department in the United States in 2007.
* American Indian faculty are more likely to be lecturers or instructors at most institutions of higher education.

**2. American Indian Student Persistence**

Given the increasing enrollment rates and continued dropout rates of American Indian/Alaska Native students, persistence factors are highlighted. Several studies have uncovered factors that have influenced academic persistence among the American Indian/Alaska Native student population. These include family support, financial aid, social capital, role models and mentors, and cultural activities. The impact of these factors is noted below:

Family Support

* American Indian/Alaska Native students are more likely to remain in college if their families are supportive and encouraging.
* Family support can ameliorate the effects of poverty that often affects many American Indian/Alaska Native students.
* If the family values education and views it as beneficial to the tribal community, they are more likely to provide greater support to their students.

Financial Aid

* Inadequate financial aid is noted as a major contributor of college dropout among American Indian/Alaska Native students.
* American Indian/Alaska Native students are more likely to have unmet financial need.
* Given the non-traditional student status of most American Indian students, most have family responsibilities that require them to work during college, often affecting their achievement in college.

## Social Capital

* Social capital can promote social confidence, social integration, and social participation, thus aiding in the development of students.
* American Indian students benefit from the attainment of social capital since they are better equipped to navigate the dominant culture at many colleges and universities.
* American Indian/Alaska Native students who’s relatives have experience with higher education are better prepared for the social and cultural capital needed in higher education.

## Role Models and mentors

* Students who reported being greeted and contacted warmly by faculty had a stronger connection to their college or university.
* Mentors help American Indian/Alaska Native students navigate the norms and values found within the STEM majors.
* Faculty mentors can provide American Indian students with skills and networks that can facilitate their integration to the institutions’ dominant campus culture and social scheme.

## Cultural Activities

* Cultural activities are noted to holistically support students, both as students and as individuals.
* The availability of cultural activities at colleges and universities is known to ameliorate the dropout rates of American Indian/Alaska Native students.
* Native clubs and multicultural offices, along with faculty warmth, are considered determinants of American Indian students’ academic achievement in higher education.

# 3. Theoretical Frameworks

Socialization theory, Bicultural and Intercultural Socialization Theory, and Transculturation are three important framework that can be used as instruments to better understand the experiences of American Indian/Alaska Native students. The culture of most STEM majors is often characterized by traditional pedagogy, valued linear and reductionist approaches to science, and individualism and competitive environments. This culture often causes cultural incongruity and may make it difficult for American Indian graduate students to fully integrate to the environment and thus, persist. In addition, the lack of American Indian faculty role models and low numbers of American Indian peers makes it challenging for American Indian students to identify mentors who can help them navigate this environment. Therefore, the use of these theoretical frameworks and conceptual models can expose the challenges faced by American Indian students in graduate STEM programs. Understanding these challenges along with the experiences of American Indian students can then facilitate the development of supportive initiatives to promote their enrollment, persistence, and ultimately, graduation from STEM programs.