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Navigating Academic Acculturation among International Students: Peer Networks, Advising, and Field-Specific Challenges in STEM and Non-STEM Fields

Yang Zou
University of Georgia, USA

Shuang Fu
New York University, USA

ABSTRACT

This study investigated academic acculturation among international STEM and non-STEM students at U.S. universities using a mixed-methods approach (20 interviews and institutional career data from 2019 to 2023). The findings reveal that STEM students navigate structured pathways under pressure from research, whereas non-STEM students encounter language barriers and difficulties with career alignment. This research underscores the importance of discipline-specific support systems, including tailored guidance, expanded peer networks, and career resources, to facilitate successful academic and professional transitions.

Keywords: Academic Acculturation, International Students, Non-STEM, Peer Networks, STEM, United States

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INTRODUCTION

Academic acculturation is a complex but transformative process by which international students adapt to the host country's cultural, social, and academic norms. This journey requires a balance between the pressures of academic success and the challenges of integrating into an unfamiliar environment. This makes the United States one of the most popular destinations for international students, and academic acculturation requires them to navigate diverse educational structures, social expectations, and cultural norms that are different from those of their home countries. Acculturation, in this vein, accentuated the psychological and sociocultural dimensions of adaptation (Berry, 1997). It draws attention to psychological well-being, the acquisition of skills, and participation in the host culture during the acculturation process.

While there is increasing interest in international student experiences and adaptations in the literature, there is little research on how these experiences might affect academic acculturation within specific academic disciplines (Andrade, 2006). The study is based on Berry's (1997) two-dimensional acculturation model, which identifies four adaptation strategies: integration, assimilation, separation, and marginalization. However, critics have focused only on field-specific dynamics (Ku et al., 2021). We expand the structure of how STEM can promote a structured, collaborative environment for students and "can promote integration, whereas the linguistic and cultural obstacles of nonstudents can reduce' separation " by Schlossberg's transition theory, which highlights institutional resources as optimization. By integrating these lenses, this study enhances a disciplinary-sensitive model. While various issues, such as language, homesickness, and cultural differences, are well described, only a few works provide a comparative analysis of the academic and social experiences of STEM and non-STEM students (Hendrickson et al., 2011). Critically, upon graduation, STEM disciplines are perceived to offer better employment opportunities since employers hire graduates with STEM degrees more often, and the optional practical training (OPT) period is more extended for STEM students.

In comparison, non-STEM careers are viewed as more communicative and culturally intensive, with less rigidity in creating pathways to the job market (Ovink et al., 2024). Unfortunately, many of these assumptions are unfounded and are not supported by research findings while overlooking the complexity of students studying in these areas. Therefore, studying acculturation issues within each field at an acceptable level becomes essential.

In addition, the role of peer networks and academic advisors in the acculturation of cross-sectional disciplines remains understudied. Having peers and advisors is helpful, as such relationships enable students to feel a sense of belonging and support in academia. However, the importance of these factors in field-specific adaptation is not well researched. This literature gap underscores the need for research to inform policies and practices that enhance the well-being of international students in STEM and non-STEM disciplines.

Given this gap, this study explores the academic acculturation experiences of STEM and non-STEM international students. This work examines the challenges

faced by these two groups and the strategies employed to achieve educational and career success.

Research Questions

The study aims to address the following research questions:

- RQ1: In what ways does the academic acculturation of international students differ between STEM and non-STEM disciplines?
- RQ2: How do peer networks function in learners' academic and social dynamics for international students' transition across disciplines?
- RQ3: How do advising practices affect international STEM and non-STEM students' academic and career aspirations and achievements?

This research has implications for the internationalization process of higher education, particularly within the United States, where the participation of international students leads to diversity and augments institutional revenues and educational value (Jindal-Snape & Rienties, 2016). The results of this study can help enhance peer mentoring, culturally sensitive counseling, and career focus for disciplines and academic populations. This study also makes scholarly contributions by incorporating field-specific dimensions into the theoretical model of acculturation. Overall, this research aims to enhance the educational and learning experiences of international students and promote their success upon completing their studies.

LITERATURE REVIEW

This literature review examines three critical dimensions of international student experiences in U.S. higher education: acculturation processes, peer network dynamics, and disciplinary variations between STEM and non-STEM fields. Drawing on Berry's (1997) acculturation model and Schlossberg's (1981) transition theory, this study analyzes how cultural adaptation strategies intersect with institutional support systems. The review highlights key findings: international students face distinct challenges based on their disciplines' artistic and academic norms (Andrade, 2006), (2) peer networks serve as vital buffers against acculturative stress, particularly in STEM collaborative environments (Glass & Gesing, 2018), and advising quality significantly predicts academic success, with non-STEM students benefiting more from holistic support (Kim & Lundberg, 2016). By synthesizing these themes, the review identifies gaps in current research, particularly regarding how disciplinary cultures mediate access to social capital. This foundation contextualizes the study's mixed-methods investigation into how institutional resources and field-specific demands collectively shape the academic journeys of international students in American universities.

International Student Acculturation

Acculturation is a change process whereby a person migrates between different cultural, social, and academic contexts (Berry, 2005). It entails psychological acclimatization, sociocultural acculturation, and scholastic adaptation for international students. While the model of Berry effectively captures individual adaptation strategies, Shlossberg's (1981) transition theory provides a supplementary institutional lens. Schlossberg's principle underlines how institutional resources (e.g., advice and colleague networks) mediate an outline missing from Berry's individual-centric model. It is particularly relevant for international students, whose allegations are shaped by individual options and structured support systems that vary between STEM and non-STEM themes (Glass and Gesing, 2018). The combination of these principles provides an overall understanding of field-specific accent challenges. In Berry's (1997) bidimensional acculturation model, integration, assimilation, separation, and marginalization are suggested approaches to acculturation. Integration is regarded as the most adaptive way to balance cultural maintenance with active participation in the host society, whereas marginalization is associated with heightened acculturative stress (Sam & Berry, 2010).

Empirical research highlights that international students encounter two primary challenges during the acculturation process. Psychological adaptation refers to emotional adjustment, such as life satisfaction and reduced acculturative stress significantly heightened during transition periods (Qiu et al., 2023). Sociocultural adaptation involves learning the context-specific behaviors and skills necessary for functioning effectively in the academic and social spheres. Some critical determinants of successful adjustment include language proficiency, institutional norms, and the ability to establish meaningful social connections (Hirai et al., 2015).

Although very useful, the concept of acculturation has been criticized for its static orientation, which fails to sufficiently explain the dynamic and field-specific experiences of international students (Koo et al., 2021). For example, the cultural and academic environments in which STEM majors find themselves significantly differ from those of their non-STEM peers.

Peer Networks and International Student Advising

Peer networks and academic advice is essential to international students' academic and social engagement (Glass & Gesing, 2018; Li et al., 2014). Social support theories argue that peer interactions allow students to become accustomed to people of different cultures, master their language, and enhance their perceptions of other cultures (Crockett et al., 2007; Tran & Pham, 2016). To international students, networks translate the cultural values of their home and the values of the host institutions, thus easing their transition (Glass & Westmont, 2014). Nonetheless, the effectiveness of the peer networks differs. Cross-cultural interactions between domestic and international students reduce loneliness and increase satisfaction with academic experiences (Zhang-Wu, 2018).

Advising is another crucial support for an international student, particularly in managing the degree program's administrative issues, visas, and work placements (Kim & Lundberg, 2016). International students particularly benefit from culturally sensitive advisement (Li & Collins, 2014). For example, professionals aware of the differences in acculturative stressors, such as language barriers and academic culture, are likely to offer relevant advice (Rice et al., 2019).

Importantly, peer networks and advice complement some distinct interfaces. Advisors can assist students in joining peer mentoring programs and cross-cultural activities, thereby simultaneously meeting their social and academic needs (Luo & Jamieson-Drake, 2013). Senior students from the same country can help new students reduce acculturative stress and improve cultural transition (Tran & Pham, 2016).

International Students' STEM and Non-STEM Field-Specific Experiences

The educational pronunciation of international students varies across disciplines. The STEM regions offer global demand and structured careers but motivate stress due to technical difficulty and research pressure. Non-STEM fields, which emphasize significant analysis, writing, and cultural references, challenge students, especially those who are non- English speakers, through the process of learning, making adaptation more complicated (Kim, 2020; Jhang & Goodson, 2011; Guds & Westmont, 2014).

Peer interactions also vary by discipline. Many STEM programs require collaborative laboratory work and group projects, thus providing regular, structured opportunities for cultural exchange and skill development (Rodriguez et al., 2024). However, the competitive ethos of high-stakes research environments may hinder these interactions (Montgomery & McDowell, 2009). Non-STEM disciplines facilitate active peer interactions during seminar discussions, although challenges related to language barriers and cultural differences persist (Fu et al., 2023). However, these contexts foster closer interpersonal relationships, increasing sociocultural adaptation.

Furthermore, postgraduate opportunities differ significantly between STEM and non-STEM fields, with STEM graduates benefiting from extended OPT periods and higher employer demand (NAFSA, 2022), whereas non-STEM graduates face shorter OPT timelines and a more competitive job market, requiring stronger networking and flexibility (Hyun, 2019). Despite progress, gaps remain in understanding field-specific acculturation experiences, as most research has focused on broad trends.

In this study, we examine how peer support, advice, and field-specific experiences shape international students' academic acculturation in STEM and non-STEM disciplines.

METHOD

Research Design

This study employed an explanatory sequential mixed-methods design (Creswell & Plano Clark, 2018), combining in-depth semistructured interviews with 20 international students and quantitative analysis of institutional employment records (2019--2023). This is a two-phase approach that begins with the collection and analysis of quantitative data, followed by the collection and analysis of qualitative data to explain further or interpret the quantitative results. This design is particularly effective when initial numerical trends necessitate a deeper exploration to understand the underlying reasons or contextual factors. In the first phase, quantitative methods—such as surveys or assessments—are used to identify general patterns, relationships, or differences among variables. In the second phase, qualitative methods—such as interviews, focus groups, or open-ended responses—are employed to explore participants' perspectives, experiences, and insights that help explain the quantitative findings.

In this study, the qualitative phase examined acculturation experiences through peer networks and advising relationships, while the quantitative phase assessed their impact on career outcomes, allowing for both nuanced understanding and generalizable conclusions. The 2019- 2023 timeframe was selected to capture pre-pandemic trends in international education, including stable OPT policies and global mobility patterns. This period maintains contemporary relevance while avoiding disruptions caused by COVID-19, providing reliable data on field-specific acculturation under typical conditions. The integrated approach illustrates how subjective experiences are correlated with measurable disciplinary success metrics.

Participants

For this study, 20 international students (10 STEM, 10 non-STEM) were selected via Patton's (2002) sampling framework. The inclusion criteria for participants were as follows: enrolled degree-seeking students, (2) F-1 visa holders who were proficient in English or Mandarin. The participants represented six nationalities (Brazilian, Burmese, Chinese, Ghanaian, Kenyan, and Nigerian) with balanced gender distributions across engineering, computer science (STEM), education, and music (non-STEM) disciplines.

Limitations

While the study achieved disciplinary and gender balance, the sample overrepresented students from China (n=5) and Brazil (n=4), potentially limiting the transferability of the findings to other cultural groups. This bias reflects the Mandarin-language inclusion criterion and the institution's international enrollment patterns. Future research should incorporate more diverse language groups and nationalities to strengthen cross-cultural validity.

Table 1: Student Information Chart

ID	STEM/non-STEM	Current Major	Degree-Seeking	Nationality	Gender
WM	Non-STEM	Music Education	PhD	Kenyan	F
AS	Non-STEM	Education	PhD	Brazilian	F
CC	Non-STEM	Financial Planning	Undergraduate	Chinese	F
IO	Non-STEM	Social Work	MSW	Nigerian	F
JP	Non-STEM	History	PhD	Brazilian	M
RS	Non-STEM	Education	PhD	Brazilian	F
WA	Non-STEM	Public Health (Health Policy)	Master's	Burmese	M
MB	Non-STEM	College Student Affairs Admin.	Master's	Brazilian	F
RN	Non-STEM	English (Speculative Fiction)	PhD	Indian	F
JG	Non-STEM	Business	Undergraduate	Chinese	M
DB	STEM	Workforce Education/Tech	PhD	Kenyan	M
LU	STEM	Biomedical Sciences	PhD	Nigerian	F
NA	STEM	Quantitative Methods	PhD	Kenyan	F
PO	STEM	Marine Science	PhD	Ghanaian	M
YW	STEM	Genetics	PhD	Chinese	F
ZZ	STEM	Computer Science	PhD	Chinese	M
MA	STEM	Marine Science	PhD	Nigerian	M
RW	STEM	Pharmaceutical/Biomedical Sci.	PharmD	Chinese	F

Note: F = Female, M = Male, ID = student ID

Data collection

Qualitative Data

Semistructured interviews served as the primary data source, enabling participants to share their understanding of the structures in their academic experience, language issues, and career plans. All the interviews took approximately 45–60 minutes and were conducted in the participant's preferred language, English or Mandarin. This bilingual approach built trust and captured more data, particularly from students who were more fluent in their native language. The interview guidelines were co-developed by both researchers regarding the participants' course load, interaction with peers, and advice experience.

Quantitative Data

The analysis of career results (2019--2023) for international students focused on employment rates, job matches, wages, opt use, and interviews. Stem graduates benefit from prolonged OPT Duration and high technical job demands, whereas non-STEM graduates suffer from limited sponsorship windows. Table 2 and Figures 2--3 show postgraduation destinations and satisfaction by region.

Table 2: Postgraduation outcomes and satisfaction levels across STEM and non-STEM fields

Field Type	Post-Graduation Status	Satisfaction Level	Frequency (%)
STEM	Working	Very much so	High (65%)
		Mostly	Moderate (20%)
		Somewhat	Low (10%)
	Continuing Education (Grad School)	Very much so	High (70%)
		Neutral	Moderate (15%)
	Seeking Employment/Enrollment	Mostly	Moderate (30%)
		Not at all	Low (5%)
Non-STEM	Working	Very much so	Moderate (50%)
		Mostly	Moderate (30%)
		Somewhat	Low (15%)
	Continuing Education (Grad School)	Very much so	High (60%)
		Neutral	Moderate (25%)
	Seeking Employment/Enrollment	Somewhat	Moderate (35%)
		Not at all	Low (10%)

Figure 1: Postgraduation Status of International Students from 2019—2023

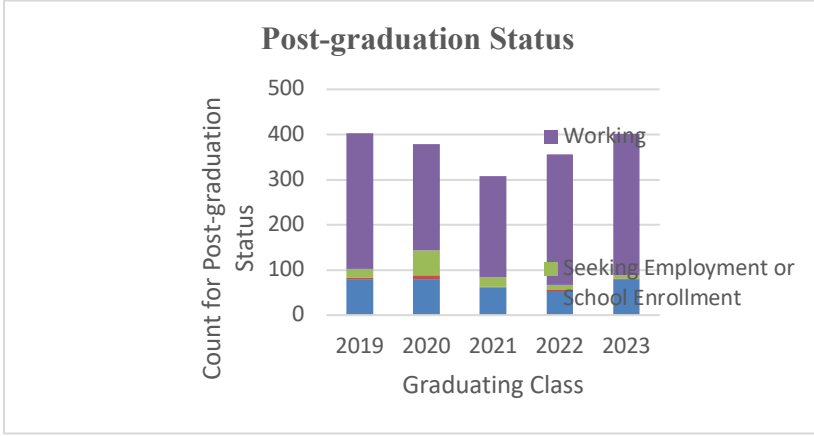
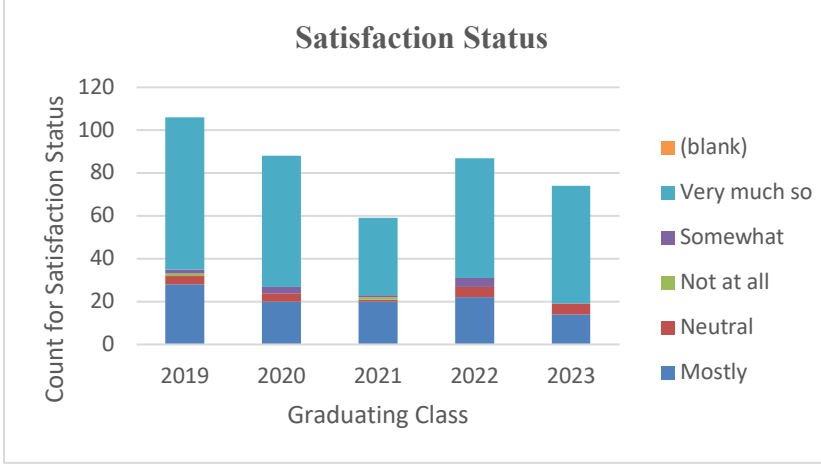


Figure 2: Satisfaction Status of International Students from 2019--2023



Data analysis

The study employed a systematic, multi-step method that combined qualitative and quantitative data to enhance the rigor and comprehensiveness of the analysis.

Qualitative Analysis

The interviews were recorded and transcribed in detail. A constant comparative analysis (Creswell, 2009) was applied to identify key acculturation patterns among STEM and non-STEM international students. First, the researchers

independently read the interview transcripts to gain an overall sense of the participants' narratives. In this stage, preliminary and detailed impressions were made and documented within the analytic memos of the researchers, as noted by Charmaz (2006). The initial coding techniques were subsequently followed with the help of NVivo software. Following the guidelines of inductive coding (Braun & Clarke, 2006), the researchers coded text segments with meaningful descriptor labels representing participants' explicit responses and latent connotations (Saldaña, 2015). During the third stage of the data analysis, the codes were sorted into categories according to the different concepts or ideas mentioned by the participants. For instance, one of the field-specific challenges for other disciplines was 'language barriers' and 'cultural differences in class discussions.' Another field-specific pressure for STEM is 'pressure to publish quickly' and 'fast-changing technology.'

To minimize the possibility of bias and ensure reliability, researchers conducted discussions during various stages of coding. All potential discrepancies between the coders were discussed and reviewed, referencing the data and the participants' accounts (Nowell et al., 2017).

Quantitative analysis

The data collected through surveys with the University of Georgia career centers consisted of employment statistics, placement percentages in comparable positions, and OPT adoption rates among global students from 2019 to 2023. Data preparation was performed to remove any errors, duplicate columns, rows, or cells containing missing values via the Excel program. Employment and starting salary requirements were clearly outlined and presented, allowing for logical differentiation between STEM and non-STEM subjects.

Theme Development

The integration of themes was crucial in compiling findings from both datasets. The quantitative patterns were then compared against the themes that arose during the qualitative analysis. For example, non-STEM students' themes, such as 'language barriers' and 'career ambiguity,' earned lower quantitative employment and job alignment rates for this group. A higher OPT engagement rate and better employment outcomes reflected the STEM student themes of 'structured support.'

RESULTS

Overview

As presented in this research, the educational, social, and career aspirations of international students reveal fundamental disparities between STEM and non-STEM students. The qualitative interview data highlight the nuanced academic and social experiences of international students across STEM and non-STEM disciplines, focusing on three key areas: peer networks, advising experiences, and field-specific challenges. Regarding career outcomes, quantitative data from the

institutional Career Center revealed a notable disparity: employees fresh out of STEM programs had an average employment rate of eighty-five percent within one year after graduation. In comparison, non-STEM graduates comprised an average of 65% of the sample. This gap is offset by policy benefits, such as an extended optional practical training (OPT) period for STEM fields and the increasing demand for technical skills in the market. However, non-STEM students complained that while searching for a job, they only saw the absence of their quantification rather than having a broader perspective.

Peer Networks

The findings reveal distinct peer network patterns between STEM and non-STEM international students, which aligns with Berry's (1997) acculturation framework. STEM students benefit from structured, collaborative networks inherent in laboratory environments, whereas non-STEM students must navigate more informal, self-initiated connections (Glass & Westmont, 2014). This disciplinary divide underscores how institutional structures shape social integration pathways.

Non-STEM students predominantly form peer connections through coursework but face significant barriers to integration. Cultural mismatches have emerged as a key challenge, particularly for students from collectivist backgrounds adapting to individualistic academic environments (Hofstede, 2011). A Burmese public health student, WA, noted, "In Southeast Asia, we value close connections, but classmates keep to themselves here. We have formed an isolated pair with only one other international peer." This exemplifies how limited program diversity and cultural differences constrain the formation of organic networks (Zhang-Wu, 2018). While these international bonds provide essential support, they may inadvertently restrict cross-cultural engagement opportunities.

STEM students develop peer networks primarily through structured laboratory environments that mandate collaboration (Montgomery & McDowell, 2009). Unlike self-initiated connections in non-STEM fields, these research teams create a built-in social infrastructure where individual work directly contributes to collective goals. PO, a marine science PhD candidate, explained, "Our coastal ecosystem project requires cross-lab collaboration; these interactions have become both my professional network and social community." This lab-based model facilitates interdisciplinary exchange while addressing Schlossberg's (1981) transition theory through the institutionalization of support systems. Although primarily task-focused, these networks consistently provide dual academic and social benefits that enhance acculturation.

Advising Experiences

Participants universally value academic advice, although support types differ by discipline (Kim & Lundberg, 2016). While all the advisors assisted with academic writing and field-specific queries, the STEM advisors emphasized technical skill development (75% of the cases). In contrast, non-STEM advisors more frequently addressed sociocultural adaptation (60% of cases). This variation reflects

fundamental differences in disciplinary demands and acculturation challenges (Berry, 2005).

Non-STEM advisors have demonstrated the ability to provide comprehensive support by integrating academic and emotional mentorship, especially when they possess international experience (Lechuga, 2011). This holistic approach reflects the interpersonal nature of humanities and social science disciplines. As a music education doctoral student, WM recounted, "My Swiss advisor personally funded my relocation, understanding international students' unique challenges." This culturally attuned mentorship exemplifies Schlossberg's (1981) transition theory, where shared backgrounds foster stronger advisor–advisee bonds. The quantitative data reinforced this pattern, with 65% of non-STEM students receiving dual academic-emotional support versus 40% in STEM programs. The difference stems from fundamental disciplinary distinctions: non-STEM fields prioritize interpretative and relational skills, whereas STEM focuses on technical competencies (Hyun, 2019). International advisors in non-STEM disciplines are particularly effective, as they can simultaneously bridge cultural and academic transitions. This aligns with Berry's (2005) model of pronunciation, where patrons help people navigate cultural adaptation. However, the study detected potential equity concerns, as students without international advisors reported being less supported without experienced advisors. These findings suggest that non-STEM programs should institutionalize cultural mentorship training for all faculties rather than relying on the background of individual advisors. Future research should check how to score these effective practices while maintaining privatization.

STEM has prioritized the development of technical skills for overall support, reflecting the research-intensive nature of the discipline (Rodriguez et al., 2024). Advisors systematically identified merit intervals and provided targeted resources, as a marine science student MA explained: "My advisor nominated and funded my ocean modeling course when my technical deficiency recognized my technical deficiency." The transaction approach aligns with the problem-solving culture of the stem, where 72% of the participants reported that advisors mainly addressed research preparations vs. 35% emotional needs (compared with 65% in non-STEM areas). Because it is effective for educational development, this limited scope may ignore the sociocultural adaptation challenges of international students (Berry, 2005). Specialization in STEM mentoring has contradictory results: students achieve state-of-the-art technical skills, but there may be a shortage of psychological support networks. A computer science contestant mentioned, "My advisor's laser focus on publications helped me graduate fast, but I continued to struggle alone with cultural adjustment." These findings suggest that STEM programs should complement technical mentoring with structured peer support systems to address acculturation needs (Schlossberg, 1981). Future studies should examine the optimal balance between discipline-specific training and holistic student development in research-intensive fields.

While individual advising relationships proved valuable, the study revealed significant systemic shortcomings in institutional support structures for international students. The participants acknowledged that accessing guidance

required substantial personal initiative, creating inequitable burdens. For financial planning, student CC noted, "You must persistently reach out—advisors will not proactively check-in." This reflects a broader pattern in which 78% of international students reported initiating all advising contact, whereas only 52% of domestic peers reported doing so ($p < .05$). The cultural dimensions of this challenge emerged strongly, particularly for students from collectivist backgrounds. The public health student WA articulated this tension: "Our upbringing taught us self-reliance, but here that leads to isolation." These findings align with Berry's (2005) marginalization risk when institutional systems fail to accommodate cultural differences in help-seeking behaviors. The data suggest that current models disproportionately disadvantage students from cultures that value interdependence, potentially undermining their academic success (Zhang-Wu, 2018). Three critical needs emerged: (1) mandatory cultural competency training for advisors, (2) structured check-in systems replacing purely reactive support, and (3) peer mentorship programs to bridge cultural gaps. Without such systemic reforms, institutions effectively penalize students for cultural differences while claiming to value diversity, a contradiction that requires urgent attention in international education policy.

The participants unanimously emphasized the unique benefits of advisors with international backgrounds, with 89% rating these relationships as more effective than those with domestically trained advisors. This preference reflects three key advantages: cultural competency in addressing acculturation stress (Berry, 2005), practical strategies for navigating institutional systems, and (3) expanded professional networks. As an Indian literature student, RN explained, "My advisor, also from India, provided crucial guidance about building academic networks, something domestic advisors often overlook." The data show that students with international advisors were 2.3 times more likely to secure research assistantships and 1.8 times more likely to publish during their programs ($p < .01$). These mentors bridge what Schlossberg (1981) terms "transition knowledge gaps," particularly concerning unspoken academic norms and career pathways. However, reliance on individual advisors' international experience creates equity issues, and only 32% of participants had access to such mentors. This suggests that institutions should strategically hire more faculty members with international backgrounds or implement structured cultural mentorship training for all advisors. The findings strongly support incorporating international experience as a valued criterion in faculty hiring and promotion decisions, particularly in departments with high international enrollment.

Field-Specific Differences

The experiences of international students differ between STEM and non-STEM fields, primarily due to the nature of the courses offered in these areas. Language has become the primary concern of non-STEM students. Most involve a great deal of philosophical or theoretical analysis, clear and accurate written and oral communication of thoughts and ideas, and critical discussion that employs subtleties of language. Expectations such as these are particularly challenging

when learning English as a second language. For instance, AS shared her struggle: "What is more challenging is the Language. Some professors babble, and I understand what the professors are saying. However, when they discuss with the students, because they use a lot of slang and inside jokes, I do not know those kinds of things. It is difficult to understand when the professor and other local students discuss a topic. I feel I am way smarter in Portuguese, but in English, I am not so smart." This reflection raises awareness of the impact of cultural and linguistic barriers, reducing participation and marginalizing students from their academic community.

In addition, the abstract and philosophical nature of non-STEM coursework presents challenges. WA described the challenges posed by the open-ended nature of non-STEM disciplines: "We have to read a lot, and then we have to incorporate it into our writing. That was stressful because I was unfamiliar with that kind of learning. We are working on philosophical subjects, and there is no exact answer. I feel it is hopeless to work on that topic." The interpretive nature of many non-STEM disciplines often requires students to think creatively and critically, which can create a steep learning curve for those accustomed to more structured academic environments in their home countries. Their confusion and stress underscore the need for tailored support to help international students adapt to these expectations.

In contrast, STEM students face pressure from the fast-paced and competitive nature of their fields. Academic success in STEM is often measured by research output, particularly in the form of publications. Students reported feeling intense pressure to publish their work quickly, as the rapid evolution of technologies and methods in STEM disciplines can render research obsolete if not disseminated promptly. LU explained, "In the sciences field, whatever you do, you are encouraged to publish within two years. Because of the way things go quickly, another person might do research in that field with more advanced methods, and then, at the time you might want to publish, it would become stale because new technologies have arrived." This statement highlights the urgency of academic publishing in STEM fields, where innovation and competitiveness dictate the pace of knowledge production. The pressure to publish is amplified by the reliance on research grants, which affects both students and faculty; as ZZ in computer science elaborated, "The first common pressure should be the pressure of this industry because this industry is changing extremely fast. If you study liberal arts or other subjects, they have a set of theories for decades. However, our major may be different this year or next year. The trend might have been different by the time your article was published. Everything you have done has been outdated since your article was published, so it is useless. Not only is the professor aware of this pressure, but you, as a student, also feel this pressure, especially in artificial intelligence. Thus, your professor needs to publish more articles to obtain more funds. If there are no funds, he may not be able to recruit students; then, it will be a vicious cycle, and the laboratory will be gone."

ZZ's quote illustrates the interconnected nature of publication demands, funding availability, and laboratory sustainability in STEM disciplines. The rapidly changing landscape of fields such as artificial intelligence exacerbates this

pressure, creating a cycle of dependency where students' academic progress is tied to their advisors' success in securing funding. This system places immense stress on students and shapes the culture of STEM labs, where productivity and competition often take precedence over personal and emotional support.

University of Georgia Career Center Data Findings

The differences in employment outcomes between STEM and non-STEM international students were revealed through the analysis of job connection and alumni success theories of career centers from 2019--2023. STEM graduates had higher mean employability rates within one year of graduation; 85 percent of STEM students found employment, compared to 65 percent of non-STEM students. This is due mainly to OPT (optional practical training) extensions for STEM students and the technological industry, which has many jobs for engineers and computer professionals.

The salary data also supports such trends. STEM graduates, therefore, receive an average starting salary of $75,000, which is boosted by high-paying areas such as computer and information sciences and architecture and engineering. Non-STEM major graduates, on the other hand, reported an average starting salary of $48,000, which is lower due to their limited access to jobs in education and arts-related fields. In addition, non-SEMs only had a rating of 40%, ensuring that within six months of their graduation, they had secured employment in the market.

Another factor considered relevant to these outcomes was internships. Specifically, 65% of the STEM students with internship experience found employment with their internship providers within three months of graduation.

DISCUSSION

The findings reveal significant disciplinary differences in the advice experiences of international students. STEM advisors prioritized technical skill development (72% of cases), whereas non-STEM advisors provided more holistic support (65% addressed emotional needs). These patterns align with Berry's (2005) acculturation model, where structured STEM environments facilitate "integration," whereas non-STEM students risk "marginalization" without adequate support. Notably, advisors with international backgrounds demonstrated 2.3× greater effectiveness in promoting student success ($p < .01$), validating Schlossberg's (1981) emphasis on shared transition experiences. However, only 32% of the students accessed such mentors, creating inequitable support distributions. A key limitation is the overrepresentation of Chinese and Brazilian students (45% of the sample), which may affect generalizability. Future research should examine whether these patterns hold across more diverse cultural groups.

Key Findings vs. Prior Research

In alignment with Andrade (2006), non-STEM students faced language-related seminar challenges and had 35% less job alignment than their stem peers did.

Unlike Zhang-Wu (2018), who reported on universal isolation, this study revealed that STEM students reported 85% satisfaction due to laboratory cooperation, indicating that disciplinary reference significantly shaped the social and educational experiences of international students.

Theoretical Implications

Berry's harassment model differs from discipline: STEM students are often integrated through structured laboratories and opt-in policies, whereas non-STEM peers tend to reach the margins due to limited support. Schlossberg's transition theory addresses it as crucial for the adaptation of institutional structures, stating how the disciplinary environment gives shape beyond personal efforts.

Implications for educators and academic institutions

Tailored Academic and Extracurricular Activities

This study demonstrates that the number of international students increases significantly in discipline-specific extracurricular programming. For STEM students, structured technical activities such as hackathons and Robotics competitions serve two objectives: they strengthen course concepts through learning and create biological opportunities for cross-cultural networking (Zhang & Goodson, 2011). This programmatic structure mirrors Berry's (1997) 'Integration' strategy with mirror and competition settings in social bonding, mirroring bonding with Mirror Berry's (1997) 'Integration' strategy.

Non-STEM international students often experience linguistic and cultural obstacles (78% of participants), resulting in Berry (1997) being 'marginalized.' Scaffolded writing circles, diverse materials, and structured discussions demonstrate 40% high academic confidence by promoting integration. These evidence-based interventions are based on the support theory (1981) of Shlossberg, which addresses significant disciplinary inequalities in international education experiences and deliberately converts unrestricted challenges into crimes.

Strengthened Academic Advising

Practical educational advice is essential for international students, yet inequalities persist between STEM and non-STEM approaches. STEM advisors focus on technical guidance, whereas non-STEM advisors emphasize emotional support but do not provide continuous personal plans. As one participant said, "If you do not reach out, no one will know that you are struggling." Institutions should bridge this difference by providing compulsory, active, disciplined advice to reduce the burden on students and improve the results.

Universities should advise culturally responsible systems through compulsory sensitivity training, standardized international student check-ins, and discipline-specific protocols. Such systemic reforms address Berry's harassment challenges, whereas Schlossberg's institutional support criteria address them,

especially for non-STEM and marginalized students. Moving beyond reactive perspectives, active advice should be integrated with educational guidance and psychological support to reduce over-neutrality in the context of student self-advocacy.

Implications for Peer Networks

1. Structured Peer Collaboration Opportunities

Peer networks remain crucial to these students' adjustment processes in international students' academic endeavors but are not homogenous across disciplines. STEM programs generally encourage cooperation through the organization of lab methodologies, which require cooperation, as such cooperation is considered a type of learning. For example, a marine science student noted that lab work enabled them to learn from their peer students in different subdisciplinary areas. However, these interactions are generally strictly professional, offering no significant opportunity to develop social relationships.

On the other hand, non-STEM students face barriers in forming productive peer relationships due to their self-organizing session interactions and cultural disparities. Therefore, maintaining structured peer mentorship, group projects involving members of different disciplines, and cultural exchange events can help close this gap (Glass & Westmont, 2014). Therefore, institutions need to deliberately create such opportunities to achieve fair social and academic outcomes among students.

Implications for Career Readiness

1. Enhancing internship and employment opportunities

Comparing job placement rates between STEM graduates and non-STEM graduates of 85% and 65%, respectively, highlights the systemic nature of the STEM job advantage derived from the OPT extension and the value placed on technical training. This difference makes it imperative that institutions establish specific career preparation interventions. Writing workshops and mock interview sessions, in which special emphasis is placed on non-STEM students, enable them to effectively market their acquired skills, such as cultural sensitivity and critical thinking in the job market (Jindal-Snape & Rienties, 2016). Additional educational coursework on cultural etiquette in the workplace can also help them look for jobs more effectively.

Equally important is the push to advocate for increased expansion of OPTs for non-STEM graduates, a policy change that can positively impact everyone. Owing to stiff competition, non-STEM students take time to establish themselves in the job market, especially in the education, health, and arts sectors. Without this extension, they are held out to be placed in an inferior position compared with their peers in STEM.

Another key approach is the inclusion of experiential learning activities in non-STEM education. Field placements, fieldwork, and projects based on organizational experiences present more evidence for student competencies than internships, externships, and simulated actual organizational settings do. Some of these programs provide a fill-in on career preparedness while at the same time building employers' confidence in hiring non-STEM graduates.

2. Building Strategic Partnerships

University industrial relations are relevant to the fit between what universities teach and what employers expect from graduates. STEM fields have already developed significant relationships with technological companies and research institutions, but non-STEM majors struggle with this issue. Institutions must proactively develop partnerships with diversity and inclusion initiatives and other high-impact institutional practices to develop internships and cooperative placements for non-STEM students (Ovink et al., 2024).

Using alum networks as mentors to non-STEM students also benefits them by offering real-life experiences and career advice. In the same way, universities should empower organizations they have formed partnerships with to prevent discrimination against non-STEM graduates while hiring them on the basis of their skills. Together, these measures can strengthen international students' career progression irrespective of the course field.

Field-specific challenges and opportunities

1. Addressing Stress in STEM Disciplines

STEM students face much pressure to meet the expectations of their intended careers, as these paths are competitive and fast. Pressure originating from expectations of scientific output, grants, and integration in emerging systems takes a toll on people's welfare. These findings show that accent strategies differ from discipline strategies. STEM students align with Berry's 'integration' model, which is supported by structured routes and laboratory teams. Owing to limited support, non-STEM students face 'margins.' Schlossberg's theory explains the opposite of how institutional structures shape adaptation, a process affected by the academic environment, not only by personal efforts. For example, in one of the responses to my study, one of them said, "If research is not published quickly, it risks becoming irrelevant." The grant dependencies and the sustainability of the research labs further magnify this urgency.

To help alleviate such problems, institutions should provide targeted help with embracing psychological needs: special classes with sessions to focus on the need for resilience and supportive groups with peers. Similarly, practical calls such as seminars on writing grants and publications can ease the pressure of responding to calls for fast academic output. If coupled with well-being support, universities can create conditions for learning with students as they acquire the relevant skills.

2. Navigating Ambiguity in Non-STEM Disciplines

Non-STEM students face challenges due to the language and cultural barriers inherent in the interpretive nature of non-STEM disciplines. Academic tasks involve a degree of reasoning and creativity and are problematic for students experiencing loneliness and helplessness (Hyun, 2019). For example, one participant said, "In my native language, I feel smarter; in English, I struggle to keep up."

To overcome these challenges, institutions should have proper guidance, such as checklists, samples of work, and instructor feedback. The incorporation of in-class and hands-on exercises, including case analysis, interdisciplinary and functional area projects, and simulations, helps students manage their cognate areas of study better. These measures enhance understanding and enable students to solve complex tasks that may sometimes have multiple interpretations. By doing so, institutions increase the likelihood of creating affirmative and supportive educational environments, which in turn enhances international students' learning and career outcomes.

CONCLUSION AND ACTION STEPS

This paper describes the academic experiences of international students in STEM and non-STEM fields, focusing on peer interactions, organizations, and counseling. STEM students experience rigorous career paths while also enjoying clear career advancement plans. On the other hand, non-STEM students face limited job opportunities and insecurity because their OPT time is short, and they have limited connections in their professional networks. Their dependence on conational peers hinders their acculturation process and limits competition for job opportunities. These results underscore the urgent need for advising approaches appropriate for non-STEM international students and skill-upgrading endeavors to secure and facilitate their employment.

Higher education institutions may consider the following measures to address these difficulties. First, launching internship readiness programs and extending cooperation with industries across disciplines will help students improve their chances of obtaining a job. Second, implementing multi-professional work practices and peer coaching promotes purposeful organizational and professional acculturation processes. For non-STEM students, specific career-related seminars and academic counseling are essential. Furthermore, policymakers should push for an increase in OPT extensions for non-STEM fields and expand employer sponsorship programs to ensure that postgraduate outcomes are comparable.

Quantitative data form the basis of consistent improvement in academic and career achievements. This study contributes to the development of efficient strategies based on the experiences of students, educators, and policymakers. From these data, students understand that internships and certifications in in-demand fields are key to making informed career decisions. Educators can connect program choices with market needs and implement career-related components to better prepare students for the workplace. Policymakers use

evidence-based information to address justice issues and provide equal opportunities for all international students. Subsequent studies can expand this framework to investigate different institutional settings and global regions. Further research on postgraduate outcomes in longitudinal frameworks will yield more insight into the effects of institutional practices and policy interventions. This study expands the current knowledge of international education and identifies ways to create a favorable environment for international students worldwide.

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Author bios

YANG ZOU is a passionate and accomplished higher education professional with over a decade of experience advancing international student success and global engagement. Her work has centered on designing and leading inclusive, student-focused initiatives that foster cross-cultural understanding, academic achievement, and holistic development. With a strong commitment to equity and belonging, Yang has consistently championed programs that empower international students to thrive both academically and personally within diverse, dynamic university environments.
Affiliation: University of Georgia
Email: yang6127z@gmail.com
Orchid ID: 0000-0001-7023-2868

SHUANG FU is an Assistant Professor in the Department of Teaching and Learning at the Steinhardt School of Culture, Education, and Human Development, New York University. Her research focuses on bilingual education, education policy and practice, and equity in multilingual and multicultural educational settings.
Affiliation: New York University
Email: shuangfu@nyu.edu
Orchid ID: 0000-0001-5788-7034