

The University of Akron

IdeaExchange@UAkron

---

Williams Honors College, Honors Research  
Projects

The Dr. Gary B. and Pamela S. Williams Honors  
College

---

Fall 2023

## The Higher Education Risk to National Security: A Case Study of The University of Akron

Anna Back  
ajb287@uakron.edu

Follow this and additional works at: [https://ideaexchange.uakron.edu/honors\\_research\\_projects](https://ideaexchange.uakron.edu/honors_research_projects)



Part of the [Defense and Security Studies Commons](#), [Emergency and Disaster Management Commons](#), and the [International Relations Commons](#)

Please take a moment to share how this work helps you [through this survey](#). Your feedback will be important as we plan further development of our repository.

---

### Recommended Citation

Back, Anna, "The Higher Education Risk to National Security: A Case Study of The University of Akron" (2023). *Williams Honors College, Honors Research Projects*. 1762.

[https://ideaexchange.uakron.edu/honors\\_research\\_projects/1762](https://ideaexchange.uakron.edu/honors_research_projects/1762)

This Dissertation/Thesis is brought to you for free and open access by The Dr. Gary B. and Pamela S. Williams Honors College at IdeaExchange@UAkron, the institutional repository of The University of Akron in Akron, Ohio, USA. It has been accepted for inclusion in Williams Honors College, Honors Research Projects by an authorized administrator of IdeaExchange@UAkron. For more information, please contact [mjon@uakron.edu](mailto:mjon@uakron.edu), [uapress@uakron.edu](mailto:uapress@uakron.edu).

**The Higher Education Risk to National Security: A Case Study of the University of Akron**

Anna Back

Williams Honors College, The University of Akron

EMHS 480: Capstone

Dr. Stacy Willett

12/1/2023

### **Abstract**

There are numerous threats to U.S. National Security within higher education. Through this paper, I will provide an analysis of current and future threats using a literature review and informational interviewing. The literature review revealed four major National Security threats facing higher education institutions due to Foreign Intelligence Entities (FIE): foreign recruitment of faculty and students, increase in foreign students and screening difficulties, campus openness/easy access to facilities and information, and foreign funding for research. A set of informational interviews were conducted with The University of Akron faculty, employees, and partners to evaluate whether these same threats were present. The results confirmed that many threats overlapped with the literature review. A risk analysis was conducted to connect each FIE threat with the vulnerability of UA, resulting in two categories of risk to U.S. National Security: intellectual property theft, and FIE infiltration and espionage. The University of Akron can close the education gap between faculty/researchers and the Intelligence Community (IC) to reduce vulnerabilities and threats.

## Introduction

The landscape of national security has evolved to prioritize counterintelligence (CI), specifically CI which is dominated by intellectual property theft (IP). A common vulnerability in the US regarding IP theft takes place within academic universities and research institutions. These environments are popular places for Foreign Intelligence Entities (FIE) and recruited US citizens to collect information on developing research and technology before it is protected by the US government (FBI, 2011). Through this research project, I will discuss whether a pattern of threats exists within academia that poses a risk to US National Security, and I will determine whether these threats exist using The University of Akron as a case study.

For this study, a risk analysis was performed. Risk analysis is a core competency in Emergency Management and Homeland Security. The purpose of this type of analysis is to determine the threats facing any given environment. In conjunction with a vulnerability assessment of the same environment, an Emergency Manager can conclude whether a certain threat poses a risk. This is the first step in any prevention or mitigation practices that may follow. The risk analysis conducted through this research will hopefully open a conversation among University of Akron administrators and security professionals. As discussed, a general lack of knowledge of the existence of such threats among higher education institutions and research professionals is a major concern. The knowledge gap between the intelligence community (IC) and academia must continue to close to ensure the future of U.S. National Security.

There are many examples of threats to university systems by students, faculty, and outside perpetrators. In May 2020, the FBI arrested an Ohio State University immunologist, Song Gou Zheng, while en route to China for grant fraud. Zheng failed to inform his employer

and the National Institutes of Health (NIH) of his involvement with China's Thousand Talent Program (TTP). A similar case involves a Harvard University scientist, Charles Leiber, who was found guilty of lying to federal authorities about the research grants and monthly salary received from the TTP. China created this program in 2008 to build up its science and technology base by recruiting overseas experts. In 2018, the FBI announced an initiative to stop the transfer of intellectual property through the TTP that could pose threats to U.S. National Security (Vogel & Ouagrham-Gormley, 2022).

Ana Montes is one example of a student recruited by a foreign intelligence service while on a university campus. Montes was targeted by the Cuban Intelligence Service due to her grievances with U.S.–Cuba policy while in graduate school at John Hopkins University. She was encouraged to find work in the IC where she continued to supply Cuba with classified information for 16 years. Foreign intelligence services take advantage of universities because of the open discussions and debates, which makes targeting U.S. students for recruitment much easier. Khalid Ali-M Aldawsari sought to exploit the student visa program in 2011. After becoming a chemical engineering student at Texas Tech University, Aldawsari was arrested for attempted use of a weapon of mass destruction (FBI, 2011). At The University of Akron, four international students were involved in a terrorist investigation while enrolled. The students originated from conflict areas overseas and were later found to have ties to ISIS (FBI Special Agent, personal communication, 10/27/2023).

### ***Literature Review***

A literature review was conducted as a means of establishing recurring foreign intelligence threats in higher education institutions. The purpose of this review is to inform the research question: What threats exist across academia that pose a risk to U.S. National Security?

The review was conducted utilizing The University of Akron's Academic Search Complete database and the Naval Postgraduate School's Center for Homeland Defense and Security. Inclusion criteria required identification of potential threats within higher education institutions and discussion of possible risks to U.S. national security. The following search terms were identified with the assistance of a University of Akron Librarian Specialist:

*threat\* OR risk\* OR vulnerab\* OR hazard\*) AND ("National Security" OR "national defense" OR "homeland security") ) AND ("higher education" OR "research institution" OR college\* OR universit\* OR academic\* OR "research center"*

A total of 223 citations including articles, studies, government reports, and journal articles were collected from the above search string. Abstracts were read and sorted for key themes and ideas which resulted in 13 relevant documents of study. Table 1 displays the selected documents organized by article citation, aim of the research, national security threats discussed, and recommendations provided.

**Table 1**

*Current Literature Addressing the Higher Education Risk to National Security*

Article	Aim of Research	NS Threats Discussed	Recommendations
1. (Burd, 2008)	<ul style="list-style-type: none"> <li>Provide objective data and policy/practice roadmap</li> </ul>	<ul style="list-style-type: none"> <li>General awareness</li> <li>Existing policies/practices</li> </ul>	<ul style="list-style-type: none"> <li>“Information Security Roadmap”</li> </ul>
2. (National Counterintelligence Center, n.d.)	<ul style="list-style-type: none"> <li>Identify foreign collection efforts against US Technologies</li> </ul>	<ul style="list-style-type: none"> <li>Student/faculty recruitment</li> <li>Rise of foreign students</li> </ul>	
3. (U.S. - China Economic Security Review	<ul style="list-style-type: none"> <li>Examine Chinese espionage and intelligence collections</li> </ul>	<ul style="list-style-type: none"> <li>Confucius institutes</li> <li>Student/faculty recruitment</li> </ul>	

Commission, 2016)			
4. (Office of the Under Secretary of Defense for Research and Engineering, 2023)	<ul style="list-style-type: none"> <li>● Provide policy for risk-based security reviews within the research community</li> </ul>	<ul style="list-style-type: none"> <li>● Campus recruitment</li> </ul>	<ul style="list-style-type: none"> <li>● “Decision Matrix to Inform Research Proposal Mitigation Decisions”</li> </ul>
5. (Sanchez, 2017)	<ul style="list-style-type: none"> <li>● Case study - investigate how the role of universities poses a risk to national security</li> </ul>	<ul style="list-style-type: none"> <li>● University openness</li> <li>● Availability of faculty affiliations</li> <li>● Availability of government funding information</li> </ul>	<ul style="list-style-type: none"> <li>● Create critical human asset classification table</li> <li>● Use targeted awareness and education campaign</li> </ul>
6. (Vogel & Ouagrham-Gormley, 2022)	<ul style="list-style-type: none"> <li>● Evaluate scientific, intelligence, and policy implications of knowledge transfer related to China’s “Thousand Talents Program”</li> </ul>	<ul style="list-style-type: none"> <li>● Foreign funding</li> <li>● Recruitment</li> </ul>	<ul style="list-style-type: none"> <li>● Improve research integrity and administrative oversight within academia</li> <li>● Enhance international dialogue on scientific ethics and research integrity</li> </ul>
7. (Skolnikoff, 2002)	<ul style="list-style-type: none"> <li>● Discuss the changes to research universities amid rising national security fears</li> </ul>	<ul style="list-style-type: none"> <li>● International research connections</li> <li>● Foreign funding</li> <li>● Foreign students</li> </ul>	<ul style="list-style-type: none"> <li>● Work jointly with government agencies to better define classified/sensitive research guidelines</li> </ul>
8. (Bács, 2022)	<ul style="list-style-type: none"> <li>● Discuss the national security challenges within higher education</li> </ul>	<ul style="list-style-type: none"> <li>● Pre-screening of foreign students/validity of documents</li> <li>● Student recruitment</li> </ul>	<ul style="list-style-type: none"> <li>● Use higher education institutions as a theater of intelligence &amp; counterintelligence operations</li> </ul>
9. (Valcik, 2010)	<ul style="list-style-type: none"> <li>● Discuss homeland security compliance and the role of higher education</li> </ul>	<ul style="list-style-type: none"> <li>● Open campus</li> </ul>	<ul style="list-style-type: none"> <li>● Improve research laboratory security</li> <li>● Use offsite</li> </ul>

			locations for sensitive research <ul style="list-style-type: none"> <li>• Conduct university security risk assessments</li> </ul>
10. (Halbert, 2016)	<ul style="list-style-type: none"> <li>• Trace the discourse of intellectual property theft as a national security threat</li> </ul>	<ul style="list-style-type: none"> <li>• Foreign students (knowledgeable spies and those just taking their knowledge home)</li> <li>• Cyberspace</li> <li>• Open access/information sharing</li> </ul>	
11. (Parker, 2004)	<ul style="list-style-type: none"> <li>• Highlight the importance of closing the gap between academia and national security</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural divide between IC and academia</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage collaborative dialogue with national security agencies</li> </ul>
12. (Federal Bureau of Investigation, 2011)	<ul style="list-style-type: none"> <li>• Provide awareness to administrators and researchers about the concern of foreign intelligence services within higher education</li> </ul>	<ul style="list-style-type: none"> <li>• Computer intrusion</li> <li>• Research collection</li> <li>• Recruitment of students/professors</li> <li>• Utilize visiting students/professors</li> <li>• Unsolicited contacts</li> <li>• Sending spies for training and credentials</li> <li>• Funding for programs at US universities</li> </ul>	<ul style="list-style-type: none"> <li>• Seek awareness training and counterintelligence tools from the FBI</li> </ul>
13. (Allen & Bista, 2021)	<ul style="list-style-type: none"> <li>• Discuss visa monitoring of international students and the policies that identify these students as national security threats</li> </ul>	<ul style="list-style-type: none"> <li>• Foreign students (lack of visa tracking/vetting)</li> </ul>	

Table 2 represents the topical areas discussing threats to U.S. national security as well as the corresponding vulnerability in higher education institutions.



**Table 2***Current FIE Threats to Higher Education Institutions*

<b>Threat</b>	<b>Vulnerability</b>	<b>Number of articles:</b>
Exploitation of existing security policies/practices in higher education	Outdated Security Awareness/Lack of Education	2 <ul style="list-style-type: none"> <li>• Burd, 2008</li> <li>• Bács, 2022</li> </ul>
Student/faculty recruitment by foreign governments	Research/Intellectual Property Security	6 <ul style="list-style-type: none"> <li>• National Counterintelligence Center, n.d.</li> <li>• U.S. - China Economic Security Review Commission, 2016</li> <li>• Office of the Under Secretary of Defense for Research and Engineering, 2023</li> <li>• Vogel, 2022</li> <li>• Bács, 2022</li> <li>• Federal Bureau of Investigation, 2011</li> </ul>
Confucius Institutes	Outdated Security Awareness/Lack of Education	1 <ul style="list-style-type: none"> <li>• U.S. - China Economic Security Review Commission, 2016</li> </ul>
Campus Openness/Easy Access: <ul style="list-style-type: none"> <li>• Lack of physical security</li> <li>• Availability of information (Faculty information, government funding information)</li> </ul>	Network Security	3 <ul style="list-style-type: none"> <li>• Sanchez, 2017</li> <li>• Valcik, 2010</li> <li>• Halbert, 2016</li> </ul>

<p>Foreign Funding:</p> <ul style="list-style-type: none"> <li>● Government</li> <li>● Foreign private research</li> </ul>	<p>Research/Intellectual Property Security</p>	<p>3</p> <ul style="list-style-type: none"> <li>● Vogel, 2022</li> <li>● Skolnikoff, 2002</li> <li>● Federal Bureau of Investigation, 2011</li> </ul>
<p>Rise of Foreign Students in US and Screening difficulties</p>	<p>Network Security</p>	<p>5</p> <ul style="list-style-type: none"> <li>● National Counterintelligence Center, n.d.</li> <li>● Skolnikoff, 2002</li> <li>● Bács, 2022</li> <li>● Halbert, 2016</li> <li>● Allen, 2021</li> </ul>
<p>Cyberspace/Cybersecurity</p>	<p>Network Security</p>	<p>2</p> <ul style="list-style-type: none"> <li>● Halbert, 2016</li> <li>● Federal Bureau of Investigation, 2011</li> </ul>
<p>Cultural divide between Intelligence Community and Academia</p>	<p>Outdated Security Awareness/Lack of Education</p>	<p>1</p> <ul style="list-style-type: none"> <li>● Parker, 2004</li> </ul>

After review, four recurring thematic areas were compiled based on frequency, see Table

3.

**Table 3***National Security Threats Facing Academia*

	<b>Threats</b>	<b>Vulnerabilities</b>
1.	Foreign recruitment of faculty and students	Research/Intellectual Property Security
2.	Increase in foreign students and screening difficulties	Network Security
3.	Campus openness/Easy Access to facilities and information	Network Security
4.	Foreign funding for research	Research/Intellectual Property Security

From the review of the literature, the following threat categories were identified: 1. foreign recruitment of faculty and students 2. increase in foreign students and screening difficulties 3. campus openness/easy access to facilities and information 4. foreign funding for research. These four areas of focus were then applied to a case study of The University of Akron, to determine if these identified threats are present.

### **Methods**

#### ***Case Study***

The purpose of this case study is to assess the level of risk that The University of Akron poses to U.S. National Security due to the threat of foreign intelligence entities. The qualitative method of case study analysis was chosen for this exploratory type of research since Case Study analysis is a tool to understand “why and how” questions of study (Yin, 1994). The sole method

of data collection for this study was purposeful informational interviewing. A total of five interviews were conducted with various University of Akron faculty, staff, and partners. Expertise resided in the following categories relevant to the study: technology transfer processes, political science, engineering and research, the Federal Bureau of Investigation, and foreign student services.

The questions used were informed by the results of the literature review and specifically adjusted to the expertise of each interview source before the interview. Questions for clarification were allowed along with additional information the participants wanted to share. All participants were offered anonymity. Questions for the subsequent interview were evolved based on the previous interview to allow an informational build upon one another. Names and details have been generalized for confidentiality purposes while keeping the core knowledge in relation to this study.

**Participant 1.** The first interview was with Participant 1, whose expertise resides in both research and engineering fields of academia. This participant has an extensive background of research and government work including NASA, the Department of Defense, and the Air Force. The participant has assisted in the establishment of multiple research centers and has extended experience with research patents and partnerships with outside companies. Participant 1's unique experience with research development and national security offers a vital perspective on the threat landscape that can be applied to The University of Akron.

The questions listed below were presented during this interview:

1. *How would you consider intellectual property theft to be a national security concern?*
  - a. *How could IP theft at The University of Akron pose a national security threat?*
  - b. *Would you consider this concern to be a common issue among other higher education institutions?*

2. *What level of concern do you have regarding intellectual property theft security at The University of Akron?*
3. *Could you share any examples of security concerns regarding research, technology, or other forms of IP?*
4. *What concerns do you have regarding unsolicited contact with faculty or students by foreign intelligence entities?*
5. *What national security ramifications exist with research funding from foreign entities?*
6. *How might The University of Akron's transparency with federal research funding be a security concern?*
7. *What could make The University of Akron a target for foreign intelligence entities?*
8. *What percent of research conducted at The University of Akron is conducted for the U.S. Government?*

**Participant 2.** The second interview conducted was with Participant 2 who works in the areas of international students and scholars. The participant works with international students currently enrolled, applying, or recently graduated from academia. The participant is one of only a few authorized to access the Student & Exchange Visitor Information System (SEVIS) utilized by the Department of Homeland Security and the Department of State to monitor international and exchange students while in the United States. Therefore, this expertise can be directly applied to The University of Akron system.

The questions listed below were presented during this interview:

1. *What is the estimated number of international students enrolled at The University of Akron?*
2. *Please describe the process through which an international student must go to be admitted to The University of Akron.*
3. *What types of security screenings must an international student undergo?*
  - a. *Are these processes typical among higher education institutions or unique to The University of Akron?*
4. *Do international students at The University of Akron often return after graduation or remain in the United States?*
5. *What are the programs used to monitor international students throughout their time at The University of Akron?*

6. *What concerns do you have about foreign intelligence interference at The University of Akron?*

**Participant 3:** The third interview was conducted with Participant 3, who has a background in academia focused on politics and Chinese political economics. Participant 3 has spent time in China and has experience working in academic institutes related to foreign partnerships. The participant also has experience with the Confucius Institute system within academia, a coordinated effort between Chinese universities and the host university in the United States.

The following questions were presented during this interview:

1. *How would you consider intellectual property theft to be a national security concern?*
  - a. *How could IP theft at The University of Akron pose a national security threat?*
  - b. *Would you consider this concern to be a common issue among other higher education/research institutions?*
2. *What level of concern do you have regarding IP security at The University of Akron?*
3. *Could you share any examples of security concerns regarding research, and university relationships/partnerships?*
4. *What concerns regarding unsolicited contact with faculty or students by foreign intelligence entities do you have?*
5. *What national security ramifications exist with research funding from foreign entities?*
6. *How might The University of Akron's transparency with federal research funding be a security concern?*
7. *What could make The University of Akron a target for foreign intelligence entities?*
8. *What security concerns did you have regarding the partnership with Henan University to operate a Confucius Institute on campus until 2022?*
  - a. *What negative influences may have developed from this partnership?*
9. *What rising concerns do you see for higher education from the PRC?*

**Participant 4:** The fourth interview was held with a participant familiar with technology transfer and IP Management. Participant 4 can speak to patent processes and compliance for

federal research and sponsored research contracts. This expertise is vital to the conversation on intellectual property theft and technology transfer between the U.S. and foreign nations.

The following questions were presented during this interview:

1. *What types of intellectual property and technology is The University of Akron producing to be shared or transferred?*
2. *How would you consider intellectual property theft to be a national security concern?*
3. *What level of concern do you have regarding intellectual property security at The University of Akron?*
4. *What would make The University of Akron a target for intellectual property theft or foreign influence?*
5. *How might The University of Akron's transparency with federal research funding be a security concern?*
6. *Would you consider these security concerns to be a common issue among other higher education institutions?*

**Participant 5:** The fifth interview was conducted with a member of the FBI. This source is highly experienced in a wide variety of law enforcement specialties including cybercrime, organized crime, financial crimes, counterterrorism, and intelligence operations. This source currently works on strategic outreach with higher education institutions. They are well-versed in the foreign intelligence threats currently facing higher education, and they bring that expertise into this study.

The following questions were presented during this interview:

1. *How would you consider foreign intelligence entities to be a threat to higher education?*
2. *How does this vulnerability pose a risk to U.S. national security?*
3. *What level of concern do you have for foreign intelligence interference in higher education?*
  - a. *What level of concern do you have for The University of Akron?*
4. *What methods do foreign intelligence entities use to gain information or otherwise interfere with higher education institutions?*
5. *Could you share any examples of foreign intelligence security concerns at The University of Akron or similar institutions?*

6. *What concerns do you have regarding the open environment of UA and other campuses?*
7. *What could make The University of Akron a target for foreign intelligence entities?*

## **Interview Results**

### ***Case Study***

Each interview resulted in differing perspectives on the general threat landscape of foreign intelligence entities and vulnerabilities found within The University of Akron. This section will present the general outcomes and highlights of each interview individually.

**Participant 1:** Participant 1 advocates overall for the open flow of research across borders; research conducted for the security of the government is protected from foreign entities by government-implemented processes. Intellectual property theft is a concern in higher education; however, IP does not give you the right to produce. The participant argues that the purpose of research is to share IP with humanity for the greater good; if this is the case, why file for patents? Currently, The University of Akron conducts roughly 60% of its research for government agencies, 25% for private companies, and 15% for the state of Ohio. Foreign investment is estimated to be less than 1% of current research at UA (Participant 1, personal communication, 10/10/23).

The University of Akron has designated spaces for research governed by the International Traffic in Arms Regulations (ITAR). This policy manages the manufacture, export/import, or furnishing of defensive materials described by the United States Munitions Lists (U.S. Department of State, n.d.). Any research conducted under this regulation only allows U.S. citizens to participate. UA currently conducts government research funded by the Department of Defense, NASA, Air Force, and Space Force; the participant did not deny that this funding may cause The University of Akron to be a target of foreign intelligence interference. With ITAR



security measures and additional patent processes in mind, the participant considered The University of Akron's IP security level to be of low concern. The University of Akron does not currently conduct research or projects with immediate concern for the national security of the United States.

Recently, The University of Akron signed a Memorandum of Understanding with RWTH Aachen University, a technical research institute located in Germany, to conduct collaborative research. The participant encourages interaction with foreign universities, students, and professors within research. UA utilizes technology transfer professionals and compliance officers to facilitate funding and information sharing with institutions such as RWTH Aachen University. When asked about security concerns regarding unsolicited contact of students and faculty at UA, the participant shared that they are not concerned, although several faculty members left the United States to pursue job offers in other countries including, China and Mexico. Any work conducted within the United States had to be left here or taken only with proper vetting and permission.

**Participant 2:** The University of Akron currently has 536 international students enrolled in various degree programs. Participant 2 ensures that international students who are accepted and granted a student visa remain in good standing throughout their program. The process for admission of an international student begins with the application to The University of Akron. Once accepted and have shown proof of financial stability they proceed to a visa interview at their U.S. Embassy. After arriving at The University of Akron, students are monitored by The Center for International Students through The Student & Exchange Visitor Information System (SEVIS). This program is monitored by The Department of Homeland Security and the Department of State (The International Center, 2022).

The security screenings conducted by The University of Akron are almost solely financial vetting. Visa interviews and background checks are conducted by the Department of Homeland Security and the Department of State. The participant explained that the DHS will question the potential student on their choice of school, why they wish to study in the U.S., and their plans following graduation. This is the traditional government process mandated for all higher education institutions seeking international students.

Following graduation, students have the choice to apply for Optional Practical Training, adjudicated by the United States Citizenship and Immigration Services, begin a new academic program, or return home (UA Student Journey Doc). International students in the United States with a visa have 1-3 years, depending on the situation, to remain in the U.S. after graduation. According to the participant the desire for international students at The University of Akron to stay in the country depends heavily on their degree program. Engineering students often want to stay and work in the U.S. after graduation from UA.

**Participant 3.** Participant 3 acknowledged concern for intellectual property theft as a national security concern, especially national defense systems, offensive weapons, and other patented software. The University of Akron's contracts with the DoD may pose a risk to national security if such projects are compromised or the resulting IP is stolen for the benefit of foreign intelligence. When discussing intellectual property security at The University of Akron, the participant expressed concern about the fact that most students and faculty are unaware of the threat, therefore his concern is not evenly distributed among colleges and departments.

The participant has no concern for foreign nationals on campus as students or faculty and has no experience with unsolicited contact with The University of Akron. Regarding foreign research funding, the participant finds no difference compared to other funding sources;

however, they acknowledge the responsibility of the researcher to question if the funding group has any pathway to impact the results or otherwise unethically interfere. The University of Akron's transparency with federal research funding may be a security concern. The participant agreed that adversaries may target UA due to this easily accessible information. The participant suggested that because UA is a small regional university with government contracts, this may make The University of Akron more vulnerable than a larger, more secure institution such as Harvard University.

As a leader of an academic institute with foreign partners, the participant described that negative consequences may have occurred due to its termination, rather than the partnership with the foreign university itself. The participant is not aware of any negative foreign influence among the participants, stating the purpose was to share language and arts rather than science and research. Additionally, they explained that they have no concern for higher education regarding the intentions of the People's Republic of China (PRC) as a foreign intelligence entity.

**Participant 4:** Intellectual property theft as a national security risk is a current issue being addressed by the Association of University Technology Managers (AUTM). The most concerning issue as described by this participant is foreign entities taking IP back to their home country. The U.S. Patents and Trademark Office (PTO) is the chief agency currently tackling the issue of IP theft in research and university settings. The agency monitors technology and IP transfer and flags any suspicious activity to prevent a risk to national security. The participant would consider The University of Akron to be of low to medium concern regarding intellectual property security. This consideration is highly dependent on the type of technology. Biomedical and chemical research is more securely protected creating less vulnerability. The most common forms of IP produced at The University of Akron are processes and methods.

The University of Akron often deals with material transfer agreements for samples and other research being shared with foreign nationals. These transfers require export control logs, a level of security documenting where the material is going. The participant acknowledges that certain research topics create a higher risk than others. Artificial intelligence, mechanical, chemical, and biological compounds may attract adversaries to target The University of Akron. They explained that although UA is transparent in its acceptance of Federal Government funding, this has not been a current security issue. They described that the concern for intellectual property theft as a risk to national security can be generalized to all higher education institutions.

**Participant 5:** Foreign intelligence entities pose a rapidly increasing threat to higher education. This threat is either unknown by higher education administrators or largely ignored, creating a vulnerability that nation-state actors know how to exploit. Some of the reasons for this growing threat include the international system within higher education, open border policies, and a lack of monitoring of international students upon arrival in the United States. The Special Agent explained that higher education institutions are targeted for research because it is cheaper to steal rather than invest in development. Financial security is considered vital to U.S. national security. The threat to higher education IP posed by foreign adversaries creates a vulnerability that risks economic security and in turn national security.

Information sharing between U.S. research institutions and foreign nations is the most basic level of threat. Technology transfer and shared research projects open universities up to foreign interference. Foreign nations will commonly send students to U.S. campuses to gain information or work their way into government careers. Also noted as a concern is the funding of institutions or faculty by foreign governments. China's Thousand Talents Program is an example of such a funding program that encourages IP theft and espionage (FBI, 2020). The use

of federal government funding also makes research institutions like The University of Akron a target; adversaries look for important funding projects. Easy access to university resources and information is a current concern to the FBI.

The general open environment of UA and similar campuses creates a vulnerability. The type of research conducted, and the lenient admission process are inviting to foreign national students. Universities and private companies in Northern Ohio currently hold a significant number of DoD contracts, a major draw to international students and foreign intelligence entities. The University of Akron has had security concerns regarding international students in the past. Terrorist investigations involving UA students were conducted by the FBI. Most of the students involved were from conflict areas overseas. This investigation led to changes to SEVIS and UA admission processes for international students. The FBI Special Agent in charge estimated a moderate level of concern regarding foreign intelligence interference within higher education.

### **Discussion and Analysis**

Although the interviewees provided differing opinions regarding the overall current threat level of FIEs facing UA, further understanding of the specific current threats, the vulnerabilities associated with them, and the resulting national security risks were obtained. Table 4 outlines each threat identified via the interviews with University of Akron professionals and partners.

**Table 4*****U.S. National Security Risk Analysis of The University of Akron***

Threat	Vulnerability	National Security Risk
Foreign Research Funding	Research/Intellectual Property Security	Intellectual Property Theft
Foreign National Students & Faculty/Lack of Monitoring	Network Security	FIE Infiltration/Espionage
Information Sharing/Technology Transfer/International University Partnerships	Research/Intellectual Property Security	Intellectual Property Theft
Open Campus Environment/Information Transparency	Network Security	FIE Infiltration/Espionage Intellectual Property Theft

Further analysis revealed a common concern for foreign intelligence entities as a definite risk to U.S. National Security. The threats to higher education institutions outlined above were recurring topics from each interview. The threats in combination with the current vulnerability categories, resulted in two main national security risks: intellectual property theft, infiltration, and espionage of adversaries. The results reflect the same threat topics as the literature review, suggesting that the security concerns generalized to higher education are in play at The University of Akron. Each interviewee was asked to assign a level (low, moderate, high) of the current threat of FIEs facing UA.

The current threat level to The University of Akron resulted in the following:

1. *Low Concern – 1*
2. *Low to Medium Concern – 1*

3. *Medium Concern – 1*

4. *Undecided – 1*

These results support the concern that an understanding of the threat to The University of Akron is unevenly distributed. A recommendation is to narrow the gap of understanding by establishing collaborative relationships between universities and federal agencies trying to protect national security. Additionally, educating faculty, researchers, and professors tied to higher education institutions may help prevent future threats from growing.

Further research on the expanding FIE threat to academia would benefit higher education institutions, as well as U.S. economic and national security. Additionally, the benefit of hosting international students and faculty within U.S. universities should be considered in future research on the FIE threat. The open environment of research and academia in general contests the security practices encouraged by the U.S. Intelligence Community.

***Limitations***

This study is not without limitations. The small number of participants is not generalizable to a larger understanding, however, the exploratory nature of this case study provided key insights to build upon in future work. Throughout this work, it became clear that those more focused on the security threats tend to believe they are more of a concern, while those who have not encountered or been educated on the threat are less concerned. This imbalance may be considered a limitation to this case study as well as future research on the topic. Some additional limitations of this research include time and resources, the focus on a single institution, as well as security access to additional related information.

## Conclusion

Through this research, I aimed to analyze the threats across higher education that pose a risk to U.S. National Security and evaluate their relevance to The University of Akron. The methods used to complete this task included a literature review to determine FIE threats to higher education institutions and a set of interviews with UA faculty, employees, and partners to evaluate the FIE threats facing UA specifically. The literature review revealed four recurring threats that are currently facing higher education institutions: foreign recruitment of faculty and students, increase in foreign students and screening difficulties, campus openness/easy access to facilities and information, and foreign funding for research. Through the interview process, it was determined that the threats facing all of academia are indeed relevant to The University of Akron.

The risk analysis developed shows the relation between each threat, the vulnerability exposure, and the risk to U.S. National Security. In combination with the vulnerability exposure at universities, the identified threats were found to pose two main risks to U.S. National Security: intellectual property theft, and FIE infiltration and espionage. It was determined that an understanding of the current threat is not evenly distributed throughout UA. Interviewees with a deep understanding or experience with the issue at hand expressed more concern than those who have not been educated on the matter. The current national security landscape requires cooperation between both academia and the intelligence community to reduce the vulnerabilities that pose a national security risk to the United States.



## References

- Allen, R., & Bista, K. (2021). Talented, yet seen with suspicion. *Journal of International Students, 12*(1). <https://doi.org/10.32674/jis.v12i1.3410>
- Burd, S. A. (2008). Impact of information security in academic institutions on Public Safety and security in the United States, 2005-2006. *ICPSR Data Holdings*.  
<https://doi.org/10.3886/icpsr21188.v1>
- Bács, Z. G. (2022). National Security and higher education: Challenges, risks and threats. *Nemzetbiztonsági Szemle, 10*(3). <https://doi.org/10.32561/nsz.2022.3.9>
- Federal Bureau of Investigation, Higher Education and National Security: The Targeting of Sensitive, Proprietary, and Classified Information on Campuses of Higher Education (2011).
- FBI. (2020, November 16). *The China Threat - Chinese Talent Plans Encourage Trade Secret Theft and Espionage*. FBI. <https://www.fbi.gov/investigate/counterintelligence/the-china-threat/chinese-talent-plans>
- Halbert, D. (2016). Intellectual property theft and national security: Agendas and assumptions. *The Information Society, 32*(4). <https://doi.org/10.1080/01972243.2016.1177762>
- The International Center, The University of Akron. (2022, July 28). F-1 Student Handbook. Akron.
- National Counterintelligence Center, Annual Report to Congress on Foreign Economic Collection and Industrial Espionage.

Office of the Under Secretary of Defense for Research and Engineering, Countering unwanted foreign influence to department-funded research at Institutions of Higher Education (2023). Washington D.C.

Parker, E. R. (2004). Academe Must Work With the Intelligence Community. *Chronicle of Higher Education*, 50(33).

Sanchez, M. A. (2017). *The Pursuit of Knowledge: A Case Study on How Elite Universities Pose a Threat to National Cybersecurity* (thesis). Harvard Library.

Skolnikoff, E. B. (2002). Protecting University Research Amid National Security Fears. *Chronicle of Higher Education*, 48(35).

U.S. Department of State. (n.d.). *ITAR & Export Controls*. U.S. Department of State.  
[https://www.pmddtc.state.gov/ddtc\\_public/ddtc\\_public?id=ddtc\\_public\\_portal\\_itar\\_landing](https://www.pmddtc.state.gov/ddtc_public/ddtc_public?id=ddtc_public_portal_itar_landing)

United States-China Economic Security Review Commission. [Report], China's Intelligence Services and Espionage Operations (2016). Washington D.C.

Valcik, N. A. (2010). Compliance issues and homeland security with new Federal Regulations for Higher Education Institutions. *New Directions for Institutional Research*, 2010(146).  
<https://doi.org/10.1002/ir.345>

Vogel, K. M., & Ben Ouagrham-Gormley, S. (2022). Scientists as spies? *Politics and the Life Sciences*, 42(1). <https://doi.org/10.1017/pls.2022.13>

Yin, R. K. (1994). *Case Study Research: Design and Methods* (2nd ed.). SAGE Publications Inc.