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### Academic Espionage: Striking the Balance Between Open and Collaborative Universities and Protecting National Security

Erin N. Grubbs

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**ACADEMIC ESPIONAGE: STRIKING THE BALANCE BETWEEN  
OPEN AND COLLABORATIVE UNIVERSITIES AND PROTECTING  
NATIONAL SECURITY**

*Erin N. Grubbs\**

*American universities and research laboratories strive to foster open, collaborative spaces, where students from all over the world can come to learn from leading academics in their field of study. However, some people believe this open and collaborative environment is threatened by international students who are coming not to add to the environment, but rather to take from it. Academic espionage is not a new problem, but it is a problem that the Trump administration and Congress are working diligently to solve. Lawmakers, administrative agencies, and universities are striving to determine whether there are enough safeguards in place to protect the United States' intellectual property. Alternatively, others are wondering whether the restrictions being put in place are truly necessary or if they are instead hindering the open exchange of ideas that is needed to advance science and research. This Recent Development argues that better awareness about academic espionage, not more safeguards, is required to protect the United States' academic institutions.*

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\* J.D. Candidate, University of North Carolina School of Law, 2020. I would like to thank the JOLT staff and board for their help editing this piece, my partner, Alex, for listening to me talk about this nonstop, and my friend, Tom, for the topic idea.

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## I. INTRODUCTION

American universities are a staple of academic advancements in science and technology not only in the United States, but around the world. These universities produce talented American scholars, along with individuals who return to their home countries and lead top businesses and governmental affairs abroad.<sup>1</sup> American universities thrive on fostering collaborative environments where ideas shared among peers and colleagues advance various fields, especially science, technology, engineering, and mathematics.

With this great power though, comes great responsibility.<sup>2</sup> There is a growing concern these American universities, which pride

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<sup>1</sup> *Student Visa Integrity: Protecting Educational Opportunity and National Security: Hearing Before the Subcomm. on Border Sec. and Immigration of the S. Comm. on the Judiciary, 115th Cong. (2018)* [hereinafter *Student Visa Integrity*] (statement of Sen. Mazie Hirono, Member, Subcomm. on Border Sec. and Immigration).

<sup>2</sup> SPIDERMAN (Columbia Pictures 2002).

themselves on their open-door policies and collaborative environments, are perhaps opening their doors too wide.<sup>3</sup> American government officials and agencies fear information vital to national security and defense may walk out the door with foreign nationals, back to their home countries, ultimately to be used against the United States.<sup>4</sup> In 2018, the Senate Subcommittee on Border Security and Immigration held a hearing titled “Student Visa Integrity: Protecting Educational Opportunities and National Security.”<sup>5</sup> This hearing, along with other discussions at the federal level and with universities, considered whether enough safeguards are in place to protect American information from academic espionage.<sup>6</sup>

This Recent Development discusses academic espionage broadly, and then considers the current legal structure in place to stop proprietary academic knowledge and research from leaving the United States when it should not. Part II defines academic espionage and lays out the landscape of international students that have attended or are attending American universities. Part III describes the current legal basis to protect academic knowledge at these universities. Part IV discusses three recent academic espionage cases. Part V explores recommendations and what else can be done to combat this issue.

## II. THE GROWING CONCERN AROUND ACADEMIC ESPIONAGE

Academic espionage is not a new phenomenon.<sup>7</sup> The United States has long feared that its international adversaries may leverage the open environments of universities to siphon off technical information.<sup>8</sup> Academic espionage specifically focuses on the

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<sup>3</sup> *Student Visa Integrity*, *supra* note 1.

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

<sup>7</sup> Hdeel Abdelhady, *Trade Wars: Restricting Foreign Access to US Technology*, LAW360 (Oct. 19, 2018), <https://www.law360.com/articles/1093803/trade-wars-restricting-foreign-access-to-us-technology>.

<sup>8</sup> *See generally* DANIEL GOLDEN, SPY SCHOOLS: HOW THE CIA, FBI, AND FOREIGN INTELLIGENCE SECRETLY EXPLOIT AMERICA’S UNIVERSITIES 39 (2017) (noting how the fear of universities being a prime location for espionage dates

gathering of intelligence information from a university setting.<sup>9</sup> From research labs to classrooms across the United States, foreign countries may look for “access to sensitive military and civilian research.”<sup>10</sup>

With the number of international students in the United States exceeding one million for the third year in a row,<sup>11</sup> the concerns around academic espionage remain germane. Central to understanding these concerns is how the term academic espionage is defined and the role it plays in the higher education system in the United States.

#### A. *Defining Academic Espionage*

Espionage is defined as “the practice of spying or using spies to obtain information about the plans and activities especially of a foreign government or a competing company.”<sup>12</sup> Espionage is one of the world’s oldest professions, beginning with references “in the Bible, in ancient Greece, and in ancient China.”<sup>13</sup> Although a known problem, few international treaties address espionage.<sup>14</sup> The conundrum with espionage is that nations promote and acknowledge their own intelligence agencies for seeking out vital intel while denouncing foreign intelligence agencies for violating sovereignty.<sup>15</sup>

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back to the Cold War, evidenced by the fact that “[o]f 400 Soviet exchange students who attended U.S. universities from 1965 to 1975, the FBI identified more than 100 as intelligence officers”).

<sup>9</sup> *Id.* at xvii.

<sup>10</sup> *Id.* at xvii-xviii.

<sup>11</sup> *Number of International Students in the United States Reaches New High of 1.09 Million*, INST. OF INT’L EDUC. (Nov. 13, 2018), <https://www.iie.org/Why-IIE/Announcements/2018/11/2018-11-13-Number-of-International-Students-Reaches-New-High>.

<sup>12</sup> *Espionage*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/espionage> (last visited Mar. 2, 2019).

<sup>13</sup> Darien Pun, Comment, *Rethinking Espionage in the Modern Era*, 18 CHI. J. INT’L L. 353, 355 (2017) (footnotes omitted).

<sup>14</sup> Simon Chesterman, *The Spy Who Came in From the Cold War: Intelligence and International Law*, 27 MICH. J. INT’L L. 1071, 1072, n.4 (2006) (noting the only existing treaties related to intelligence are focused on intelligence-sharing between allies, such as United Kingdom-USA Intelligence Agreement).

<sup>15</sup> Pun, *supra* note 13, at 355.

Academic espionage is specifically focused on data and information being taken from university settings and has long been on the radar of the Federal Bureau of Investigation (“FBI”) and the Central Intelligence Agency (“CIA”).<sup>16</sup> As early as the 1960s–70s, the FBI and CIA monitored foreign students from Iran, China, and the Soviet Union, searching for possible informants and intelligence officers.<sup>17</sup> Recent high-profile academic espionage incidents have government officials questioning if enough is being done to combat this intrusion. For example, “[in] March of 2019 the U.S. Department of Justice indicted nine Iranian individuals for allegedly hacking into the accounts of professors across 144 American universities and stealing more than \$3.4 billion in intellectual property and research data.”<sup>18</sup>

Academic freedom does not come without a cost.<sup>19</sup> American taxpayers pay for academic research and development engaged in by the United States government.<sup>20</sup> The cost is often considered worthwhile because of the social benefit of progressing knowledge.<sup>21</sup> Most of this research, funded by American taxpayers, is considered fundamental and thus does not have restrictions on it; however, some of the research is off-limits to foreign students.<sup>22</sup> In 2014, the United States Department of Defense<sup>23</sup> found that “nearly

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<sup>16</sup> See Michaela Ross, *Spy Theft of U.S. University Research Sparks Call for Action*, BLOOMBERG L. (Apr. 11, 2018), <https://news.bloomberglaw.com/tech-and-telecom-law/spy-theft-of-us-university-research-sparks-call-for-action-1>. See generally GOLDEN, *supra* note 8, at 33–40 (discussing FBI and CIA investigations of academic espionage).

<sup>17</sup> See generally GOLDEN, *supra* note 8, at 33–40 (discussing FBI and CIA investigations of academic espionage).

<sup>18</sup> Ross, *supra* note 16.

<sup>19</sup> Joy Blanchard, *A Struggle of Foreign Policy, State Power, and Academic Freedom: Faculty Senate of Florida International University v. Florida*, 2014 BYU EDUC. & L.J. 187, 189 (2014) (quoting Robert Post, *The Structure of Academic Freedom*, in *ACADEMIC FREEDOM AFTER SEPTEMBER 11*, at 73 (Beshara Doumsani ed., Zone Books 2006)).

<sup>20</sup> GOLDEN, *supra* note 8, at 7 (stating the United States government funds a great deal of academic research and development, spending \$27.4 billion in 2014).

<sup>21</sup> Blanchard, *supra* note 19, at 189.

<sup>22</sup> *Id.*

<sup>23</sup> All departments and agencies referenced in this Recent Development are United States agencies.

a quarter of all foreign efforts to obtain sensitive or classified information” was through academic institutions.<sup>24</sup> This finding resulted in an increase in scrutiny when considering who should and should not be allowed to enter the United States to study.<sup>25</sup>

### B. *International Students in Higher Education in the United States*

The 2017–2018 academic year was the third year in a row that international student enrollment in American universities surpassed one million.<sup>26</sup> International students comprised 5.5 percent of the total student population at American universities in the 2017–2018 academic year.<sup>27</sup> Approximately 35 percent of those students enrolled were in graduate programs.<sup>28</sup> Roughly one-third of the international students studying in the United States were from China.<sup>29</sup>

Depending on the field of study, some programs are more heavily populated with international students than others.<sup>30</sup> Overall, approximately 45 percent of international students in 2017–2018 studied engineering, math, computer science, or physical and life sciences.<sup>31</sup> In 2015, approximately 81 percent of electrical engineering graduate students and 79 percent of computer science graduate students were international students.<sup>32</sup> In 2016,

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<sup>24</sup> Ana Swanson & Keith Bradsher, *White House Considers Restricting Chinese Researchers Over Espionage Fears*, N.Y. TIMES (Apr. 30, 2018), <https://www.nytimes.com/2018/04/30/us/politics/trump-china-researchers-espionage.html>.

<sup>25</sup> *See generally id.* (discussing the potential restrictions on Chinese nationals being admitted to the United States to perform research at American universities).

<sup>26</sup> *Enrollment*, INST. OF INT’L EDUC. (2018), <https://www.iie.org/Research-and-Insights/Open-Doors/Data/International-Students/Enrollment>.

<sup>27</sup> *Id.*

<sup>28</sup> *Id.* (noting 382,953 international students enrolled in a graduate program in the 2017–2018 academic year).

<sup>29</sup> *Id.* (stating that 363,341 Chinese students were enrolled in American universities in 2017–2018).

<sup>30</sup> *See id.*

<sup>31</sup> *Id.* (noting 21.3 percent studied engineering, 17 percent studied math and computer science, and 7.2 percent studied physical and life sciences).

<sup>32</sup> Stuart Anderson, *Guess Who’s Not Coming to America? International Students*, FORBES (Mar. 2, 2018), <https://www.forbes.com/sites/stuartanderson/>

approximately 39 percent of the graduate students studying science and engineering at American universities were temporary visa holders.<sup>33</sup>

Despite the previous prominence of foreign citizens in graduate programs, the numbers of international graduate students began dropping in recent years.<sup>34</sup> United States graduate enrollment saw a 3.7 percent decline in international students between 2016 to 2017.<sup>35</sup> This decline is projected to double in the coming year.<sup>36</sup> There was a 1.1 percent increase in first-time graduate enrollment of United States citizens and permanent residents, emphasizing the fact that only international students, not overall graduate enrollment, dropped.<sup>37</sup> An even steeper decline is seen when looking at specific programs.<sup>38</sup> For example, American physics PhD programs saw a 12 percent decrease in applicants from 2017 to 2018.<sup>39</sup>

Universities provide various reasons for this drop in international student enrollment. Some universities believe changes

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2018/03/02/guess-whos-not-coming-to-america-international-students/#55113ed23c3e.

<sup>33</sup> NAT'L SCI. FOUND., NAT'L CTR. SCI. & ENGINEERING STATS., *Table 13. Graduate Students in Science, Engineering, and Health in All Institutions, by Field, Citizenship, Ethnicity, and Race: 2011–16*, in SURVEY OF GRADUATE STUDENTS AND POSTDOCTORATES IN SCIENCE AND ENGINEERING FALL 2016 (2018),

[https://ncesdata.nsf.gov/gradpostdoc/2016/html/GSS2016\\_DST\\_13.html](https://ncesdata.nsf.gov/gradpostdoc/2016/html/GSS2016_DST_13.html).

<sup>34</sup> See generally Kerrie Kennedy, *US: International Graduate Students Drop 4%, Trump a Potential Factor*, THE PIE NEWS (Oct. 4, 2018), <https://thepienews.com/news/us-international-graduate-student-enrolments-down-4-trumps-policies-a-potential-factor/> (stating the enrollment of international graduate students at American universities went from a 0.9 percent decrease in the 2015–2016 academic year to 3.7 percent in the 2016–2017 academic year).

<sup>35</sup> *Id.*

<sup>36</sup> *Student Visa Integrity*, *supra* note 1 (statement by Sen. Dick Durbin, Ranking Member, Subcomm. on Border Sec. and Immigration).

<sup>37</sup> *Id.*

<sup>38</sup> See generally Alexis Wolfe, *US Physics PhD Programs See Drop in International Applications*, PHYSICS TODAY (June 8, 2018), <https://physicstoday.scitation.org/doi/10.1063/PT.6.2.20180608a/full/> (clarifying a decrease in international applications does not necessarily mean a decrease in international student enrollments).

<sup>39</sup> *Id.*



to immigration policy caused international visitors to stop applying for graduate programs.<sup>40</sup> Others believe the drop may be attributable to international students being more deliberate in how they pursue their graduate education and seeking universities outside of the United States.<sup>41</sup> Specifically, in the science, technology, engineering, and mathematics fields, an increase in global competition may be contributing to the decline in international graduate students.<sup>42</sup>

Part of the concern with decreasing international student enrollment is the financial aspect.<sup>43</sup> International students studying in American higher education institutions contribute an estimated \$37 billion to the United States economy annually.<sup>44</sup> In 2017, Chinese students alone “contributed \$11 billion to the U.S. economy, while Indian students contributed another \$5 billion.”<sup>45</sup> Thus, a drop in international students can have large financial impacts at universities.

### III. CURRENT AND PROPOSED REQUIREMENTS FOR FOREIGN CITIZENS STUDYING IN THE UNITED STATES

Safeguards to ensure that academic research and data are not subject to academic espionage are paramount. As such, the United States has several layered safeguards to protect its information. The first safeguard in place is the requirement that foreign citizens obtain a student visa to study at an American university. After an international citizen obtains a student visa, export control regulations provide a second safeguard to protect research and data

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<sup>40</sup> JULIE BAER, FALL 2017 INTERNATIONAL STUDENT ENROLLMENT HOT TOPICS SURVEY 1, 4–5 (2017) (finding that of the 552 institutions that responded to the survey, 68.4 percent cited visa application process or visa delays/denials as a major factor contributing to new international student declines).

<sup>41</sup> Kennedy, *supra* note 34.

<sup>42</sup> Wolfe, *supra* note 38 (citing to PhD programs in China and Japan increasing in quality, although not providing specific statistics in enrollment).

<sup>43</sup> See *Student Visa Integrity*, *supra* note 1 (statement by Sen. Dick Durbin, Ranking Member, Subcomm. on Border Sec. and Immigration).

<sup>44</sup> *Id.*

<sup>45</sup> Aria Bendix, *A Pause in International Students?*, ATLANTIC (Mar. 13, 2017), <https://www.theatlantic.com/education/archive/2017/03/a-pause-in-international-students/519435/>.

from leaving the United States. Executive orders, legislation, and administrative agency guidance are also used as additional safeguards in stopping academic espionage.

A. *The Process for Foreign Citizens to Gain a Student Visa*

When citizens of foreign countries choose to come to the United States to study, they must obtain a student visa.<sup>46</sup> There are two nonimmigrant visa categories that foreign citizens can apply to in order to study full-time in the United States.<sup>47</sup> A Category F visa is required for “an alien having a residence in a foreign country which he has no intention of abandoning, who is a bona fide student qualified to pursue a full course of study” to enter the United States to study at a college or university.<sup>48</sup> A Category M visa is required for those students who want to study at a “vocational or other recognized nonacademic institution, other than a language training program.”<sup>49</sup>

The Department of Homeland Security (“DHS”) runs the Student and Exchange Visitor Program (“SEVP”).<sup>50</sup> “SEVP provides approval and oversight to schools authorized to enroll F and M nonimmigrant students and gives guidance to both schools and students about the requirements for maintaining [the student’s] status.”<sup>51</sup> When a foreign citizen is applying for an F or M visa, the person must first apply and be accepted to a SEVP-approved

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<sup>46</sup> There are over twenty types of nonimmigrant visas for those traveling temporarily to the United States. *See About Visas – The Basics*, U.S. DEP’T OF STATE: BUREAU OF CONSULAR AFF., <https://travel.state.gov/content/travel/en/us-visas/visa-information-resources/frequently-asked-questions/about-basics.html> (last visited Apr. 4, 2019). There are additional visas for people coming to live permanently in the United States. *Id.* The required visa depends on the purpose of the travel. *Id.*

<sup>47</sup> *Students and Employment*, U.S. CITIZENSHIP & IMMIGRATION SERVICES., <https://www.uscis.gov/working-united-states/students-and-exchange-visitors/students-and-employment> (last updated Aug. 9, 2018).

<sup>48</sup> Immigration and Nationality Act, 8 U.S.C. § 1101(a)(15)(F)(i) (2018).

<sup>49</sup> *Id.* § 1101(a)(15)(M)(i).

<sup>50</sup> *Student and Exchange Visitor Program*, U.S. IMMIGRATION & CUSTOMS ENFORCEMENT, <https://www.ice.gov/sevis> (last updated Nov. 14, 2018).

<sup>51</sup> *Id.*

school.<sup>52</sup> SEVP-approved schools include colleges, universities, and vocational schools.<sup>53</sup>

DHS also administers the Student and Exchange Visitor Information System (“SEVIS”), which is a web-based system designed to maintain “information on international nonimmigrant students and exchange visitors in the United States.”<sup>54</sup> SEVIS provides for proper reporting and recordkeeping regarding nonimmigrant and exchange visitors and offers a way to track visa violators for which enforcement action should be taken.<sup>55</sup> International citizens coming to study in the United States remain within the SEVIS database throughout their time studying in the United States.<sup>56</sup>

As part of the visa application, a vetting process occurs when foreign citizens apply to study in the United States. The applicant begins by completing an online nonimmigrant visa application form, scheduling an interview, and paying a processing fee.<sup>57</sup> The application and screening system occur at the consular office and include “personal interviews, which employ analytic interview techniques, multiple biographic and biometric checks, and interagency review.”<sup>58</sup> The biographic and biometric checks include fingerprints and full-face photographs, which are then cross-referenced against multiple databases maintained by the U.S. government.<sup>59</sup> A visa will not be issued unless “all relevant concerns

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<sup>52</sup> ASS’N OF AM. UNIVS., UNIVERSITY VISA SCREENING PROCEDURES OVERVIEW 1 (2018), <https://www.aau.edu/sites/default/files/AAU-Files/Key-Issues/Immigration/University-Visa-Screening-Procedures-Overview.pdf>.

<sup>53</sup> See generally U.S. IMMIGRATION & CUSTOMS ENFORCEMENT, SEVP CERTIFIED SCHOOLS: UPDATED SEPTEMBER 19, 2018 (2018), <https://studyinthestates.dhs.gov/assets/certified-school-list-09-19-18.pdf> (listing all of the SEVP certified schools).

<sup>54</sup> *Student and Exchange Visitor Program*, *supra* note 50.

<sup>55</sup> *Id.*

<sup>56</sup> *Student Visa Integrity*, *supra* note 1 (statement of Edward Ramotowski, Deputy Assistant Secretary for Visa Services, United States Department of State).

<sup>57</sup> U.S. GOV’T ACCOUNTABILITY OFF., GAO-18-608, NONIMMIGRANT VISAS OUTCOMES OF APPLICATIONS AND CHANGES IN RESPONSE TO 2017 EXECUTIVE ACTIONS 11 (Aug. 2018).

<sup>58</sup> *Student Visa Integrity*, *supra* note 1 (statement of Edward Ramotowski, Deputy Assistant Secretary for Visa Services, United States Department of State).

<sup>59</sup> U.S. GOV’T ACCOUNTABILITY OFF., *supra* note 57, at 15.

raised during this process are fully resolved.”<sup>60</sup> Criminal convictions or “reasonable suspicion” of criminal behavior may be cause for visa denial.<sup>61</sup> Even after passing the consular office review, the visa only admits the student to travel to a port of entry.<sup>62</sup> Once at the port of entry additional permission is needed from a Customs and Border Protection Officer.<sup>63</sup>

In general, student and exchange visitor visa issuances decreased each year from fiscal years 2015 through 2017.<sup>64</sup> In 2017, 814,138 student and exchange visitor visas were issued, which was down from 1,064,176 in 2015.<sup>65</sup> In the same year, the United States government refused 18 percent of student and exchange visa applicants.<sup>66</sup> The majority of refusals were related to the applicants not being able to overcome the presumption of an intent to immigrate or the applicant not meeting the visa eligibility criteria.<sup>67</sup>

### B. *Export Control Regulations*

In addition to student visas, another protective function the United States has in place is export control regulations “to protect the national security and foreign policy interests” of the country.<sup>68</sup> Export control regulations focus on regulating the “transfer of specific or general types of technology to foreign persons.”<sup>69</sup> The Departments of Commerce, Treasury, and State each have

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<sup>60</sup> *Student Visa Integrity*, *supra* note 1 (statement of Edward Ramotowski, Deputy Assistant Secretary for Visa Services, United States Department of State).

<sup>61</sup> ASS’N OF AM. UNIVS., *supra* note 52.

<sup>62</sup> *Id.*

<sup>63</sup> *Id.*

<sup>64</sup> U.S. GOV’T ACCOUNTABILITY OFF., *supra* note 57, at 57.

<sup>65</sup> *Id.* (reporting 420,992 F type visas issued, 383,165 J-type visas issued, and 9,981 M-type visas issued in 2017).

<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

<sup>68</sup> *Overview: Federal Agencies and their Export Control Regulations*, STAN. U. (Feb. 1, 2019) [hereinafter *Overview*], <https://doresearch.stanford.edu/research-scholarship/export-controls/overview#federal-agencies-and-their-export-control-regulations>.

<sup>69</sup> *Modernizing Export Controls: Protecting Cutting-Edge Technology and U.S. National Security Before the H. Comm. on Foreign Affairs*, 115th Cong. (2018) [hereinafter *Modernizing Export Controls*] (testimony of Mario Mancuso, Senior Visiting Fellow for Int’l Sec., The Hudson Inst., Partner, Kirkland & Ellis).

regulations pertaining to export controls.<sup>70</sup> Export control regulations cover everything from commodities to information technology to software to services.<sup>71</sup>

The Bureau of Industry and Security<sup>72</sup> issued Export Administration Regulations (“EAR”) pertaining to “dual-use” items, meaning those items that have civil and military applications.<sup>73</sup> The EAR implements the Export Administration Act of 1979.<sup>74</sup> The EAR defines items and activities subject to the regulation as activities “related to the proliferation of nuclear explosive devices, chemical or biological weapons, [or] missile technology.”<sup>75</sup> Additionally, the EAR contains a Commerce Control List, describing items, commodities, software, and technology subject to the authority of the Bureau of Industry and Security.<sup>76</sup> If an item or activity is subject to the EAR, various prohibitions may apply.<sup>77</sup> In addition, a license may be required for an item or activity depending on the country where the item is going, the end-use, or end-user.<sup>78</sup>

Items not considered dual-use may still be subject to the Office of Foreign Assets Control (“OFAC”)<sup>79</sup> economic and trade sanctions, which focus on United States foreign policy and national security interests.<sup>80</sup> The Foreign Assets Control Regulations pertain

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<sup>70</sup> *Overview*, *supra* note 68.

<sup>71</sup> *Modernizing Export Controls*, *supra* note 69 (prepared remarks of Kevin J. Wolf, Partner, Akin Gump Strauss Hauer & Feld).

<sup>72</sup> This bureau is within the United States Department of Commerce.

<sup>73</sup> Export Administration Regulations, 15 C.F.R. § 730.1–.10 (2018).

<sup>74</sup> *Id.* § 730.2 (citing the Export Administration Act of 1979, 50 U.S.C. app. 2401–2420). However, the Export Administration Act of 1979 was repealed in 2018 by the Export Control Reform Act of 2018. The Export Control Reform Act of 2018 also requires the Secretary of Commerce to establish controls under the Export Administration Regulation. John S. McCain National Defense Authorization Act for Fiscal Year 2019, H.R. 5515, 115th Cong. (2018).

<sup>75</sup> 15 C.F.R. § 734.

<sup>76</sup> *Id.* § 734.1.

<sup>77</sup> *Id.* § 736.

<sup>78</sup> *Id.* §§ 738, 744.

<sup>79</sup> This office is within the United States Department of Treasury.

<sup>80</sup> *About: Terrorism and Financial Intelligence*, U.S. DEP’T OF TREASURY, <https://www.treasury.gov/about/organizational-structure/offices/Pages/Office-of-Foreign-Assets-Control.aspx> (last updated Apr. 5, 2019)

to transactions, meaning payment or transfer, export or withdrawal, or transfer of credit.<sup>81</sup> OFAC maintains lists of sanctions focused on specifically designated nationals and countries.<sup>82</sup>

Lastly, the Department of State issued the International Traffic in Arms Regulations (“ITAR”).<sup>83</sup> The ITAR implements the Arms Export Control Act, which covers “the export and temporary import of defense articles and services.”<sup>84</sup> The ITAR defines defense articles with an extensive list of United States Munitions ranging from nonautomatic and semiautomatic firearms to “any explosive, propellant, pyrotechnic, fuel, oxidizer, binder, additive, or precursor” that “is being developed using classified information.”<sup>85</sup> Defense services are defined as assisting foreign persons in developing defense articles.<sup>86</sup> The ITAR requires registration of persons who deal with defense articles or furnish defense services.<sup>87</sup> Additionally, the Department of State issues licenses for the export or temporary import of defense articles.<sup>88</sup>

### C. Exclusions from Export Regulations

Dating as far back as 1981, concerns about the balance of national security and collaborative university environments arose.<sup>89</sup> In 1981, five presidents from prominent American research universities raised their concerns about proposed export controls to the Secretaries of State, Defense, and Commerce.<sup>90</sup> This prompted

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<sup>81</sup> Foreign Assets Control Regulations, 31 C.F.R. § 500.308 (2018).

<sup>82</sup> *Consolidated Sanctions List Data Files*, U.S. DEP’T OF TREASURY (Mar. 14, 2019), <https://www.treasury.gov/resource-center/sanctions/SDN-List/Pages/consolidated.aspx>.

<sup>83</sup> International Traffic in Arms Regulations, 22 C.F.R. § 120–30 (2018).

<sup>84</sup> *Id.* § 120.2 (citing the Arms Export Control Act, 22 U.S.C. § 2751).

<sup>85</sup> *Id.* § 121.1 Category V (h) (2018).

<sup>86</sup> *Id.* § 120.9(a)(1). The full definition of defense services includes assisting in “design, development, engineering, manufacture, production, assembly, assembling, testing, repair, maintenance, modification, operation, demilitarization, destruction, processing or use of defense articles.” *Id.*

<sup>87</sup> *See id.* § 122.1(a).

<sup>88</sup> *See id.* § 123.1(a).

<sup>89</sup> NEAL LANE, *Tighter Controls to Prevent Espionage at U.S. Research Laboratories Are Harmful*, in *ESPIONAGE AND INTELLIGENCE GATHERING* 106–07 (Louise I. Gerdes ed., 2004).

<sup>90</sup> *Id.*

President Reagan to issue National Security Decision Directive 189 in 1985.<sup>91</sup> The directive defined fundamental research and the Administration's desire to keep fundamental research unrestricted.<sup>92</sup>

Today, in an academic setting, such as a research lab or university, there are three key types of information that fall outside of export control regulations: fundamental research, educational information, and published information exclusions.<sup>93</sup> Fundamental research is comprised of basic science and engineering results that would ordinarily be “published and shared broadly within the scientific community . . . .”<sup>94</sup> Fundamental research is distinct from non-fundamental research, which may be “restricted for proprietary or national security reasons.”<sup>95</sup> Educational information is comprised of information taught at a university or an associated teaching laboratory during normal instruction.<sup>96</sup> Published information consists of already published or public domain information.<sup>97</sup> If the information can be categorized as fundamental research, educational information, or published information, it is not subject to export control regulations.<sup>98</sup>

Oftentimes, the confusion around what constitutes fundamental research can get universities in trouble.<sup>99</sup> Most university activities

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<sup>91</sup> *Id.*

<sup>92</sup> EXEC. OFFICE OF THE PRESIDENT, NSDD-189, NATIONAL POLICY ON THE TRANSFER OF SCIENTIFIC, TECHNICAL AND ENGINEERING INFORMATION 1 (1985) [hereinafter NSDD-189], <https://research.archives.gov/id/6879779> (defining fundamental research as “basic and applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from industrial development, design, production, and product utilization, the results of which ordinarily are restricted for proprietary or national security reasons”).

<sup>93</sup> *Policies and Procedures*, OHIO ST. U. OFF. OF RES. & COMPLIANCE, <http://orc.osu.edu/regulations-policies/exportcontrol/policies-and-procedures/> (last visited Apr. 4, 2019).

<sup>94</sup> NSDD-189, *supra* note 92.

<sup>95</sup> *Id.*

<sup>96</sup> *FAQs*, OHIO ST. U. OFF. OF RES. & COMPLIANCE, <http://orc.osu.edu/regulations-policies/exportcontrol/faqs/> (last visited Apr. 4, 2019).

<sup>97</sup> *Id.*

<sup>98</sup> See 15 C.F.R. § 734.8 (2018).

<sup>99</sup> See generally William Metcalf, *Do Higher Education Institutions Have a Misunderstanding of the Fundamental Research Exemption: How Export Control*

falls into the category of fundamental research and are thus exempt from export controls.<sup>100</sup> However, research is not fundamental if the university accepts certain publication restrictions,<sup>101</sup> is funded by the government and there are protections on the information,<sup>102</sup> or the research is funded by a corporate sponsor and there is a prepublication review requirement.<sup>103</sup>

Additionally, confusion around “deemed exports is a major risk for universities.”<sup>104</sup> A “deemed export” is when there is a release or transfer of “technology”<sup>105</sup> to a foreign person.<sup>106</sup> Therefore, even having a foreign national work on certain projects and see information can be considered a deemed export.<sup>107</sup> Many American universities clarify within policy documents the export control requirements and how they apply to the university to protect against potential violations.<sup>108</sup>

#### D. Executive Orders to Combat Academic Espionage

A recent addition to the protective measures against academic espionage occurred in December 2017 when President Trump

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*Regulations Change University Research*, 39 J.L. & EDUC. 281, 286 (2010) (discussing how most university activity constitutes fundamental research, but some activities universities undertake are outside of the fundamental research exception and thus “it is important to know what exactly places [university] activity outside of the exemption”).

<sup>100</sup> *Id.*

<sup>101</sup> *See id.* (citing the EAR requirements, 15 C.F.R. § 734.8).

<sup>102</sup> *See id.* (citing the ITAR requirements, 22 C.F.R. § 120.11(a)).

<sup>103</sup> *See id.* (citing the EAR requirements, 15 C.F.R. § 734.8).

<sup>104</sup> *See id.* at 284.

<sup>105</sup> The EAR defines technology as “information necessary for the ‘development,’ ‘production,’ ‘use,’ operation, installation, maintenance, repair, overhaul, or refurbishing . . . of an item.” 15 C.F.R. § 772.1 (2018).

<sup>106</sup> Export Administration Regulations, 15 C.F.R. § 734.13(a)(2) (2018).

<sup>107</sup> Metcalf, *supra* note 99, at 284.

<sup>108</sup> *See, e.g., Export Controls*, STAN. U. <https://doresearch.stanford.edu/research-scholarship/export-controls> (last visited Apr. 4, 2019); *Export Control*, OHIO ST. U. OFF. OF RES. & COMPLIANCE, <http://orc.osu.edu/regulations-policies/exportcontrol/> (last visited Apr. 4, 2019); *Export Control*, BOS. U., <http://www.bu.edu/researchsupport/compliance/export-control/> (last visited Apr. 4, 2019); *Export Controls*, U. OF MICH., <https://research-compliance.umich.edu/export-controls> (last visited Apr. 4, 2019).



announced his National Security Strategy.<sup>109</sup> President Trump highlighted a need to “tighten visa procedures” in the “Promote and Protect the U.S. National Security Innovation Base” section of his National Security Strategy.<sup>110</sup> That section states the administration will “consider restrictions on foreign [science, technology, engineering, and mathematics] students from designated countries to ensure that intellectual property is not transferred to our competitors, while acknowledging the importance of recruiting the most advanced technical workforce to the United States.”<sup>111</sup> Universities are mentioned within the “Protect Data and Underlying Infrastructure” subheading of the National Security Strategy and are encouraged to “defeat espionage and theft.”<sup>112</sup>

President Trump is not the first president to propose these types of restrictions on foreign students. In 1949, while discussing the Atomic Energy Commission, the Senate heard arguments about restricting the exportation of radioisotopes and considering whether or not this type of export was basic research.<sup>113</sup> In 1952, arguments were raised against “McCarthy-era restrictions on visas for foreign nationals.”<sup>114</sup> During the Cold War, export control regulations came back onto the radar of United States government officials.<sup>115</sup> The goal with export controls during the Cold War was to “buy time, preserve the U.S. lead, and keep adversaries from exploiting the latest technological developments.”<sup>116</sup> President Reagan issued the

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<sup>109</sup> WHITE HOUSE, NATIONAL SECURITY STRATEGY OF THE UNITED STATES OF AMERICA (2017).

<sup>110</sup> *Id.* at 22.

<sup>111</sup> *Id.*

<sup>112</sup> *Id.*; see also Andy J. Semotiuk, *Foreign Students to Deal with Uncertainties Under New U.S. Immigration Policy*, FORBES (June 13, 2018), <https://www.forbes.com/sites/andyjsemotiuk/2018/06/13/raising-the-bar-on-international-students-new-uscis-policy-looks-to-target-college-students/#7b31d93955fb>.

<sup>113</sup> John Krige, *National Security and Academia: Regulating the International Circulation of Knowledge*, BULLETIN OF ATOMIC SCIENTISTS, Mar.–Apr. 2014, at 42, 43.

<sup>114</sup> *Id.* at 43–44.

<sup>115</sup> See LANE, *supra* note 89, at 107.

<sup>116</sup> *Id.*

National Security Decision Directive during the Cold War era focusing on the definition of fundamental research.<sup>117</sup>

Following the 2001 terrorist attacks, President George W. Bush also enforced strict visa policies on graduate students.<sup>118</sup> In addition to visa policy controls, the United States turned a greater focus to export controls after the September 11 attacks.<sup>119</sup> The Commission Report following the September 11 terrorist attacks found that “the 9/11 terrorists and their supporters relied on access to U.S.-origin technologies and financial networks to achieve their scheme.”<sup>120</sup> Following the attacks, the enforcement of export controls became a focus of the Department of Justice.<sup>121</sup>

The Obama administration also proposed a rule that would limit the resources available to United States’ colleges working on company-sponsored research pertaining to munitions, nuclear engineering, and satellite technologies.<sup>122</sup> When the Obama administration proposed that rule, there were no open cases of industrial espionage involving university research.<sup>123</sup> Yet, counterterrorism and counter nuclear proliferation experts believed universities were “soft targets” for espionage.<sup>124</sup>

At the same time, President Obama focused on updating the export control system and taking a hard look at “what we control,

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<sup>117</sup> Krige, *supra* note 113, at 44.

<sup>118</sup> See Jeffrey Mervis, *More Restrictive U.S. Policy on Chinese Graduate Student Visas Raises Alarm*, SCI. (June 11, 2018), <http://www.sciencemag.org/news/2018/06/more-restrictive-us-policy-chinese-graduate-student-visas-raises-alarm>.

<sup>119</sup> See Tara L. Dunn, *Surviving United States Export Controls Post 9/11: A Model Compliance Program*, 33 DENV. J. INT’L L. & POL’Y 435, 441 (2005).

<sup>120</sup> *Id.* at 436 (citing 9/11 COMMISSION, THE 9/11 COMMISSION REPORT: FINAL REPORT OF THE NATIONAL COMMISSION ON TERRORIST ATTACKS UPON THE UNITED STATES 362–63 (2004), <http://govinfo.library.unt.edu/911/report/911Report.pdf>).

<sup>121</sup> *Id.* at 441.

<sup>122</sup> Julia Edwards, *U.S. Targets Spying Threat on Campus with Proposed Research Clampdown*, REUTERS (May 20, 2016), <https://www.reuters.com/article/us-usa-security-students/u-s-targets-spying-threat-on-campus-with-proposed-research-clampdown-idUSKCN0YB1QT>.

<sup>123</sup> *See id.*

<sup>124</sup> *Id.*

how we control it, how we enforce those controls, and how we manage our controls.”<sup>125</sup> President Obama’s goal was that beginning in 2010, and for the next five years, exports would double in order to support American jobs.<sup>126</sup> Although not all of President Obama’s goals were accomplished, his administration was successful in harmonizing some licensing policies and consolidating screening lists from various agencies.<sup>127</sup>

#### E. *Legislative Attempts to Combat Academic Espionage*

Along with actions being taken by the executive branch, the legislative branch in recent years advanced potential safeguards to academic espionage concerns. In May 2018, Senator Ted Cruz proposed the Stop Higher Education Espionage and Threat Act of 2018.<sup>128</sup> The bill was designed to amend Chapter 33 of Title 28 of the United States Code by adding an additional section related specifically to “designation of foreign intelligence threats to higher education.”<sup>129</sup> The bill did not name any specific countries; however, Senator Cruz was quoted in the Washington Post as saying, “Communist China is infiltrating American universities to meddle with our curricula, silence criticism of their regime, and steal intellectual property including sensitive dual-use research.”<sup>130</sup> Senator Cruz’s bill develops a method for the FBI to designate a person as a “foreign intelligence threat to higher education”

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<sup>125</sup> PRESIDENT OBAMA ANNOUNCES FIRST STEPS TOWARD IMPLEMENTATION OF NEW U.S. EXPORT CONTROL SYSTEM, THE WHITE HOUSE, OFFICE OF THE PRESS SEC’Y (Dec. 9, 2010), <https://obamawhitehouse.archives.gov/the-press-office/2010/12/09/president-obama-announces-first-steps-toward-implementation-new-us-expor>.

<sup>126</sup> *See id.*

<sup>127</sup> IAN F. FERGUSSON & PAUL K. KERR, CONG. RESEARCH SERV., R41916, THE U.S. EXPORT CONTROL SYSTEM AND THE EXPORT CONTROL REFORM INITIATIVE 21 (Apr. 5, 2019) (noting the screening list compiled over “24,000 entities from existing Commerce, Treasury, and State Department screening lists.”).

<sup>128</sup> Stop Higher Education Espionage and Theft Act of 2018, S. 2903, 115th Cong. (2018).

<sup>129</sup> *Id.* § 2.

<sup>130</sup> Josh Rogin, *Preventing Chinese Espionage at America’s Universities*, WASH. POST (May 22, 2018), [https://www.washingtonpost.com/news/josh-rogin/wp/2018/05/22/preventing-chinese-espionage-at-americas-universities/?noredirect=on&utm\\_term=.4293ab74b34f](https://www.washingtonpost.com/news/josh-rogin/wp/2018/05/22/preventing-chinese-espionage-at-americas-universities/?noredirect=on&utm_term=.4293ab74b34f).

focusing on foreign actors that commit, attempt to commit, or conspire to commit espionage, kidnapping, or fraud.<sup>131</sup> The proposed bill also describes disclosures required for foreign gifts or contracts to institutions of higher education.<sup>132</sup> As of the writing of this article, the bill has not moved beyond the Senate Committee on the Judiciary.<sup>133</sup>

In August 2018, President Trump signed the John S. McCain National Defense Authorization Act for Fiscal Year 2019, which contained the Export Control Reform Act (“ECRA”) of 2018.<sup>134</sup> The ECRA repealed the Export Administration Act of 1979, which previously provided the statutory authority for the Export Administration Regulations.<sup>135</sup> The need for the ECRA stemmed from the changes that occurred over the last 40 years since the 1979 Act was passed and from a push for permanent authority.<sup>136</sup> The ECRA establishes numerous new requirements, such as: (1) an interagency process focusing on “emerging and foundational technologies” and their export, (2) requiring license requirements reviews for certain countries, and (3) requiring export licensing by the Commerce Department to consider “impacts on the [United

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<sup>131</sup> S. 2903, 115th Cong. § 540D(b)(1) (2018).

<sup>132</sup> *Id.* § 3.

<sup>133</sup> S.2903 – *Stop Higher Education Espionage and Theft Act of 2018*, CONGRESS.GOV, <https://www.congress.gov/bill/115th-congress/senate-bill/2903/all-actions?overview=closed#tabs> (last visited Apr. 4, 2019).

<sup>134</sup> John S. McCain National Defense Authorization Act for Fiscal Year 2019, H.R. 5515, 115th Cong. (2018).

<sup>135</sup> *Id.* The Export Administration Act of 1979 remained in effect due to Executive Orders and emergency declarations under the International Emergency Economic Powers Act. AKIN GUMP STRAUSS HAUER & FELD LLP, THE EXPORT CONTROL REFORM ACT AND POSSIBLE NEW CONTROLS ON EMERGING AND FOUNDATIONAL TECHNOLOGIES 2 (Sept. 12, 2018), <https://www.akingump.com/images/content/9/7/v2/97168/International-Trade-Alert-09-12-2018-The-Export-Control-Refo.pdf>.

<sup>136</sup> *Modernizing Export Controls*, *supra* note 69 (testimony of Kevin J. Wolf, Partner, Akin Gump Strauss Hauer & Feld) (noting the Export Administration Act of 1979 was perpetuated by the authority under the International Emergency Economics Power Act and thus a more permanent source of authority was needed).

States] ‘defense industrial base.’”<sup>137</sup> The main impact of this regulatory change will be on new types of technologies considered critical to national security, in particular “cybersecurity, artificial intelligence, and machine learning,” which previously did not have as strong of an emphasis under the regulations.<sup>138</sup>

F. *Guidance from Administrative Agencies Regarding Academic Espionage*

DHS proposed revisions to visa policies in May 2018.<sup>139</sup> The revisions pertained to F visas (student visas), J visas (exchange visitors), and M visas (vocational students) focusing on when the visa holders would be considered unlawfully present.<sup>140</sup> Unlawful presence relates to the time when a person is within the United States when they are not permitted to be or are paroled.<sup>141</sup> The Accrual of Unlawful Presence and F, J, and M Nonimmigrants Policy Memorandum (“Policy Memorandum”) stated that on or after August 9, 2018, individuals on F, J, or M nonimmigrant visas will be considered unlawfully present in the United States when any of the following conditions occur: (1) the day after the nonimmigrant is no longer pursuing the course of study or authorized activity they were admitted into the country for; (2) the day following the completion of the nonimmigrant’s course of study or program; (3) the day following the expiration of the nonimmigrant’s form I-94; or (4) the day after an immigration judge orders the nonimmigrant be excluded, deported, or removed.<sup>142</sup> The goal of the change in

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<sup>137</sup> John P. Barker et al., *New Law Expands and Reforms CFIUS Jurisdiction and US Export Controls*, ARNOLD & PORTER (Aug. 13, 2018), <https://www.arnoldporter.com/en/perspectives/publications/2018/08/new-law-expands-and-reforms-cfius-jurisdiction>.

<sup>138</sup> *Id.*

<sup>139</sup> U.S. DEP’T OF HOMELAND SEC., U.S. CITIZENSHIP & IMMIG. SERVS., POLICY MEMORANDUM: ACCRUAL OF UNLAWFUL PRESENCE AND F, J, AND M NONIMMIGRANTS, PM-602-1060.1 (Aug. 9, 2018).

<sup>140</sup> *Id.*

<sup>141</sup> *Unlawful Presence and Bars to Admissibility*, U.S. CITIZENSHIP & IMMIGR. SERVS. (Aug. 9, 2018), <https://www.uscis.gov/legal-resources/unlawful-presence-and-bars-admissibility>.

<sup>142</sup> U.S. DEP’T OF HOMELAND SEC., *supra* note 139, at 3–4.

unlawful presence was to lessen the number of visa overstays and improve implementation of the unlawful presence criteria.<sup>143</sup>

On October 23, 2018, Guilford College<sup>144</sup> filed a lawsuit in the United States District Court for the Middle District of North Carolina challenging the Policy Memorandum.<sup>145</sup> The complaint alleged four causes of action: (1) the Policy Memorandum does not follow the procedures required by the Administrative Procedure Act, (2) the Policy Memorandum is arbitrary and capricious, (3) the Policy Memorandum is inconsistent with the statutory text of the code pertaining to aliens and nationality (8 U.S.C. § 1182), and (4) the Policy Memorandum violates the due process guarantee of the Fifth Amendment.<sup>146</sup> The government filed a motion to dismiss the case in January 2019.<sup>147</sup> As of the writing of this article, the case is still ongoing. Until the court reaches a decision, the Policy Memorandum remains in full effect.<sup>148</sup>

Along with DHS, the Department of State issued guidance in June 2018 regarding F-1 visas for citizens of China.<sup>149</sup> The guidance changed the validity of visa eligibility from five years to one year for Chinese citizens studying in certain fields such as robotics, aviation, and manufacturing.<sup>150</sup> The concept is likened to needing a ticket stub to re-enter an event.<sup>151</sup> It is not that Chinese students cannot leave, then re-enter the United States, but their visa, or ticket

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<sup>143</sup> *Unlawful Presence and Bars to Admissibility*, *supra* note 141.

<sup>144</sup> Plaintiffs include Guilford College, Guilford College International Club, The New School, Foothill-De Anza Community College District, and Haverford College.

<sup>145</sup> Complaint, Guilford College et al. v. Nielsen et al., No. 1:18-cv-00891 (M.D.N.C. 2018).

<sup>146</sup> *Id.* at 30–35.

<sup>147</sup> *Accrual of Unlawful Presence and F, J, and M Nonimmigrants*, NAFSA (Mar. 27, 2019), [http://www.nafsa.org/Professional\\_Resources/Browse\\_by\\_Interest/International\\_Students\\_and\\_Scholars/Accrual\\_of\\_Unlawful\\_Presence\\_and\\_F,J,\\_and\\_M\\_Nonimmigrants/](http://www.nafsa.org/Professional_Resources/Browse_by_Interest/International_Students_and_Scholars/Accrual_of_Unlawful_Presence_and_F,J,_and_M_Nonimmigrants/).

<sup>148</sup> *Id.*

<sup>149</sup> *Restrictions on Chinese Visas*, NAFSA (June 7, 2018), [https://www.nafsa.org/Professional\\_Resources/Browse\\_by\\_Interest/International\\_Students\\_and\\_Scholars/Restrictions\\_on\\_Chinese\\_Visas/](https://www.nafsa.org/Professional_Resources/Browse_by_Interest/International_Students_and_Scholars/Restrictions_on_Chinese_Visas/).

<sup>150</sup> *Id.*

<sup>151</sup> Mervis, *supra* note 118.

in this analogy, is only valid for one year instead of five.<sup>152</sup> This raises concerns regarding the ability of Chinese students to attend international conferences or even to go home to visit their families, thus possibly putting the Chinese students at a competitive disadvantage compared to other non-Chinese students.<sup>153</sup>

#### IV. ACADEMIC ESPIONAGE CASES

According to the Department of Defense, academic solicitation of students, professors, scientists or researchers for clandestine operations went from 8 percent in 2010 to 24 percent in 2014.<sup>154</sup> The Department of Defense also found that “nearly a quarter of all foreign efforts to obtain sensitive or classified information” had been done through academic institutions.<sup>155</sup> With these numbers on the rise, the FBI continues to pursue potential cases of academic espionage in university settings. Some of these pursuits prove fruitful, while others do not.<sup>156</sup> Three key cases are relevant to this discussion: Ruopeng Liu, Dr. Xiaoxing Xi, and J. Reece Roth.<sup>157</sup> These cases demonstrate the range from unsuccessful academic espionage charges being brought to successful charges that resulted in a prison sentence.

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<sup>152</sup> *Id.*

<sup>153</sup> *Id.*

<sup>154</sup> *Scholars or Spies: Foreign Plots Targeting America’s Research and Development Before the H. Comm. on Sci., Space, & Tech.*, 115th Cong. 53–54 (2018) [hereinafter *Scholars or Spies*] (remarks by Daniel Golden, author of *Spy Schools*).

<sup>155</sup> Swanson & Bradsher, *supra* note 24.

<sup>156</sup> Matt Apuzzo, *U.S. Drops Charges that Professor Shared Technology with China*, N.Y. TIMES (Sept. 11, 2015), <https://www.nytimes.com/2015/09/12/us/politics/us-drops-charges-that-professor-shared-technology-with-china.html> [hereinafter *U.S. Drops Charges*].

<sup>157</sup> See, e.g., Cynthia McFadden et. al., *Education or Espionage? A Chinese Student Takes His Homework Home to China*, NBC NEWS (July 24, 2018), <https://www.nbcnews.com/news/china/education-or-espionage-chinese-student-takes-his-homework-home-china-n893881> (discussing the Ruopeng Liu case); *U.S. Drops Charges*, *supra* note 156 (discussing the Dr. Xiaoxing Xi case); *United States v. Roth*, 628 F.3d 827, 829 (6th Cir. 2011).

### A. *Learning from Liu*

The case of Ruopeng Liu was opened by the FBI in 2010 based on allegations that Liu stole intellectual property while studying in the United States.<sup>158</sup> Ruopeng Liu, a Chinese national, came to study under Dr. David Smith and work in his lab at Duke University.<sup>159</sup> Dr. Smith, a renowned professor of computer and electrical engineering at Duke University, became a target of what was believed to be academic espionage.<sup>160</sup>

Dr. Smith focuses on the field of meta-materials, specifically creation of an invisibility cloak, or a cloak that can conceal objects from microwaves.<sup>161</sup> While working in the lab, Liu engaged in “suspicious” behavior including inviting two Chinese colleagues to visit and work in Dr. Smith’s lab.<sup>162</sup> Shortly after the visit, an exact replica of Dr. Smith’s measuring equipment was recreated in Liu’s old lab in China.<sup>163</sup> Although a case was opened on Liu in 2010, the FBI later closed the case due to a lack of evidence.<sup>164</sup>

### B. *What Went Wrong with Xi*

The case of Dr. Xiaoxing Xi demonstrates a time where the FBI was wrong in bringing charges of academic espionage.<sup>165</sup> The Department of Justice charged Dr. Xiaoxing Xi, chairman of Temple University’s physics department, with “sharing sensitive American-made technology with China.”<sup>166</sup> The FBI began investigating Dr. Xi as a potential spy, ultimately arresting him in May 2015.<sup>167</sup> The FBI did not present evidence of espionage, but rather, the FBI alleged Dr. Xi shared detailed schematics of a pocket

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<sup>158</sup> McFadden et al., *supra* note 157.

<sup>159</sup> *Scholars or Spies*, *supra* note 154 (remarks by Daniel Golden, author of *Spy Schools*).

<sup>160</sup> *Id.*

<sup>161</sup> McFadden et al., *supra* note 157.

<sup>162</sup> *Id.*

<sup>163</sup> *Id.*

<sup>164</sup> *Id.*

<sup>165</sup> *U.S. Drops Charges*, *supra* note 156.

<sup>166</sup> *Id.*

<sup>167</sup> Matt Apuzzo, *Former Espionage Suspect Sues, Accusing F.B.I. of Falsifying Evidence*, N.Y. TIMES (May 10, 2017), <https://www.nytimes.com/2017/05/10/us/politics/fbi-xi-xiaoxing.html> [hereinafter *Former Espionage Suspect Sues*].



heater with Chinese researchers.<sup>168</sup> The pocket heater was important to superconductor research and thus subject to export control.<sup>169</sup> The Department of Justice dropped the charges after leading scientists in the field gave sworn statements that the blueprints were not for a pocket heater, but rather for a device Dr. Xi invented and shared with Chinese researchers under normal academic collaboration.<sup>170</sup> As a result of the incorrect charges, Dr. Xi was placed on administrative leave and the university revoked his title of physics department chairman.<sup>171</sup>

Two years later, Dr. Xi filed a lawsuit against the FBI and the lead FBI agent on his case.<sup>172</sup> Dr. Xi, a naturalized United States citizen, alleged multiple constitutional claims including malicious prosecution and fabrication of evidence, equal protection and due process violation, and unlawful search and seizure of property and belongings.<sup>173</sup> Additionally, Dr. Xi alleged multiple torts including malicious prosecution, invasion of privacy, intentional and negligent infliction of emotional distress, and negligence.<sup>174</sup> Dr. Xi brought the action under the United States Constitution and the Federal Tort Claims Act.<sup>175</sup>

### C. *The Tale of Roth*

The case of J. Reece Roth is one of the most well-known cases of academic espionage that resulted in a conviction and ultimately a prison sentence.<sup>176</sup> In 2011, the United States Court of Appeals for the Sixth Circuit convicted J. Reece Roth, a retired electrical engineering professor at the University of Tennessee, of “one count of conspiracy, fifteen counts of exporting defense articles and services without a license, and one count of wire fraud.”<sup>177</sup> Roth

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<sup>168</sup> *U.S. Drops Charges*, *supra* note 156.

<sup>169</sup> *Former Espionage Suspect Sues*, *supra* note 167.

<sup>170</sup> *U.S. Drops Charges*, *supra* note 156.

<sup>171</sup> *Id.*

<sup>172</sup> Complaint, *Xi v. FBI*, No. 17-cv-2132 (E.D. Pa. 2017).

<sup>173</sup> *Id.* at 26–27.

<sup>174</sup> *Id.* at 28–31.

<sup>175</sup> *Id.* at 28–31. As of the publication of this article, the case was still ongoing.

<sup>176</sup> *United States v. Roth*, 628 F.3d 827, 829 (6th Cir. 2011).

<sup>177</sup> *Id.*

worked on contracts related to unmanned surveillance vehicles use of plasma-based guidance systems.<sup>178</sup> The work was done through a Knoxville technology company who had a contract with the United States Air Force.<sup>179</sup>

A grand jury found that Roth took sensitive information to foreign countries, and shared sensitive information with Chinese and Iranian students.<sup>180</sup> The court determined that because the ultimate objective of the research was to incorporate the technology into military drones, the information constituted defense articles and services pursuant to the International Traffic in Arms Regulations.<sup>181</sup> Roth was ultimately “sentenced to four years in prison and two years probation.”<sup>182</sup>

#### V. ARE THE CURRENT METHODS TO COMBAT ACADEMIC ESPIONAGE ENOUGH?

The threat of academic espionage is discussed among various federal agencies, including the FBI, Immigration and Customs Enforcement, and the Department of State.<sup>183</sup> The goal is to ensure a proper amount of protections are in place without being overly burdensome on a university’s ability to further research and academic progress.

In the instance of academic espionage, it is difficult to develop legal oversight that is sufficient, but not too restrictive. Some advocates believe the current programs are overly burdensome on institutions and restrict academic innovation.<sup>184</sup> Others believe not enough is being done to protect research pertaining to national security risks.<sup>185</sup> Neither position provides the best approach to the

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<sup>178</sup> *Id.*

<sup>179</sup> *Id.*

<sup>180</sup> *Id.* at 831.

<sup>181</sup> *Id.* at 833.

<sup>182</sup> Debra D. Burke, *Export Control Policy Initiatives Under the Obama Administration*, J. LEGAL, ETHICAL & REG. ISSUES, Jan. 2012, at 47, 52.

<sup>183</sup> *Student Visa Integrity*, *supra* note 1.

<sup>184</sup> *See, e.g., id.* (focusing the second panel on advocates who believe the current export programs are either sufficient or overly burdensome).

<sup>185</sup> *See, e.g., id.* (focusing the first panel on advocates who believe the current export programs are not enough to protect national security).

nation's problem. Instead, as there are enough regulations currently in place, the United States should focus on heightening awareness around existing regulations.

A. *Are Current Protections Too Much?*

In developing programs to combat academic espionage, it is crucial to ensure there is no discrimination based on nationality.<sup>186</sup> “To target a whole group of people as being subject to greater suspicion, based purely on race and national origin, and in advance of any facts or evidence, goes against the fundamental American ideals of the presumption of innocence, due process, and equal protection for all.”<sup>187</sup> This could lead to violations of the Equal Protection clause of the Fifth Amendment.

For example, the Department of State's June 2018 guidance document specifically focuses on Chinese citizens.<sup>188</sup> This process of trying to screen out potential spies would not really be detectable by consulate officers vetting visa applications.<sup>189</sup> Additionally, there is no evidence to show that changing from a five-year to a one-year visa would deter a potential foreign-spy.<sup>190</sup>

Similar to the Department of State, the rhetoric used by Senator Cruz regarding the proposed Stop Higher Education Espionage and Theft Act of 2018 bill focused on concerns regarding Chinese students.<sup>191</sup> The bill itself does not name any specific countries.<sup>192</sup> It is imperative that the actions of a few do not tarnish an entire

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<sup>186</sup> Jeffrey Mervis, *Drop in Foreign Applicants Worries U.S. Engineering Schools*, SCI. (Feb. 14, 2017), <http://www.sciencemag.org/news/2017/02/drop-foreign-applicants-worries-us-engineering-schools>.

<sup>187</sup> Swanson & Bradsher, *supra* note 24 (quoting *Committee of 100 Denounces Broad Brush Stereotyping and Targeting of Chinese Students and Academics*, COMMITTEE OF 100 (Apr. 5, 2018), [http://www.committee100.org/press\\_release/committee-of-100-denounces-broad-brush-stereotyping-and-targeting-of-chinese-students-and-academics/](http://www.committee100.org/press_release/committee-of-100-denounces-broad-brush-stereotyping-and-targeting-of-chinese-students-and-academics/)).

<sup>188</sup> *Restrictions on Chinese Visas*, *supra* note 149.

<sup>189</sup> Mervis, *supra* note 118.

<sup>190</sup> *Id.*

<sup>191</sup> Rogin, *supra* note 130.

<sup>192</sup> See Stop Higher Education Espionage and Theft Act of 2018, S. 2903, 115th Cong. (2018).

nationality while at the same time balancing the interests of national security.<sup>193</sup>

Overly burdensome restrictions on international students can also lead to a loss of money for the United States and a lack of global diversity at universities.<sup>194</sup> The United States is in a global competition for talent.<sup>195</sup> A decrease in international students at American universities results in difficult budget cuts as many universities rely on the often higher tuition rates that foreign students pay compared with in-state students.<sup>196</sup> For example, in Texas, the 85,000 international students contributed an estimated \$2.1 billion and over 27,000 jobs.<sup>197</sup> Similarly, in Illinois, which has over 52,000 international students, those students contributed \$1.8 billion to the economy and over 24,000 jobs.<sup>198</sup> The more hurdles the United States puts in place for foreign citizens to study in the United States, the more likely those foreign citizens are to pursue degrees in other countries.<sup>199</sup>

#### B. *Are Current Protections Not Enough?*

A major concern with the current regulations is the ability of students to transfer programs at a university from a non-sensitive to a sensitive program.<sup>200</sup> Louis Rodi, Deputy Assistant Director of the National Security Investigations Division in DHS, noted this as a

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<sup>193</sup> *Student Visa Integrity*, *supra* note 1 (statement of Leon Rodriguez, Partner, Seyfarth Shaw LLP).

<sup>194</sup> *Id.* (statement of Sen. Mazie Hirono, Member, Subcomm. on Border Sec. and Immigration).

<sup>195</sup> *Id.* (statement of Jill Welch, Deputy Exec. Dir. for Pub. Policy, NAFSA: Association of International Educators).

<sup>196</sup> Stephanie Saul, *As Flow of Foreign Students Wanes, U.S. Universities Feel the Sting*, N.Y. TIMES (Jan. 2, 2018), <https://www.nytimes.com/2018/01/02/us/international-enrollment-drop.html> (noting a decrease in international students caused universities to cut programs and sports teams).

<sup>197</sup> *Student Visa Integrity*, *supra* note 1 (statement of Bill Priestap, Assistant Director, Counterintelligence Division, FBI).

<sup>198</sup> *Id.*

<sup>199</sup> *Id.* (statement of Jill Welch, Deputy Exec. Dir. for Pub. Policy, NAFSA: Association of International Educators).

<sup>200</sup> *Id.* (statement of Louis Rodi, Deputy Assistant Director, U.S. Immigration and Customs Enforcement).

major concern and loophole in the current process.<sup>201</sup> This concern is particularly pertinent in larger universities focused on research. The current regulations do not have a mechanism to flag when students transfer from non-sensitive programs into sensitive programs.<sup>202</sup> A possible solution would be the university itself putting in place mechanisms to flag such concerns or implementing a requirement for a visa holder to declare an intention to change programs.

Recently, the government focused its efforts of protecting against academic espionage on China.<sup>203</sup> Chinese national students began studying in the United States in 1978 and the number of Chinese students studying in the United States continues to grow each year.<sup>204</sup> International students in the United States are made up of almost one-third Chinese nationals.<sup>205</sup> Since 2000, at least 30 people born or raised in China who attended American universities have been charged with espionage or theft of trade secrets.<sup>206</sup> It is not yet clear if the June 2018 Department of State guidance focused on Chinese students will be enough to alleviate these concerns around academic espionage. The discussion around China continued, at a broader level than just academic espionage, during a Senate committee hearing entitled: “China’s Non-Traditional Espionage Against the United States: The Threat and Potential Policy Responses.”<sup>207</sup> The goal of the hearing was to discuss ways to counter activities such as researchers violating government grants and cyberattacks on government and private information.<sup>208</sup>

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<sup>201</sup> *Id.*

<sup>202</sup> *Id.* However, there is no data to show how often this type of situation occurs and whether the concern is more hypothetical than real.

<sup>203</sup> Swanson & Bradsher, *supra* note 24.

<sup>204</sup> GOLDEN, *supra* note 8, at 34.

<sup>205</sup> *Scholars or Spies*, *supra* note 154 (remarks by Daniel Golden, author of *Spy Schools*).

<sup>206</sup> *Id.*

<sup>207</sup> *China’s Non-Traditional Espionage Against the United States: The Threat and Potential Policy Responses Before the S. Comm. on the Judiciary*, 115th Cong. (2018).

<sup>208</sup> *Id.* (remarks by Sen. Chuck Grassley, Chairman, S. Comm. on the Judiciary).

### C. *Are Current Protections Just Right?*

In many cases, more robust regulations are not necessary to protect against academic espionage. Instead, universities should implement more robust policies and programs aimed at educating professors and students on export controls in order to prevent potential academic espionage. Many universities currently have detailed policies in place.<sup>209</sup> These policies focus on applying the export controls to potential activities at the university.<sup>210</sup>

For example, The Ohio State University's ("Ohio State") policy, although emphasizing all personnel should be familiar with the policy, states that individuals specifically working in engineering, physical and computer sciences, biological sciences, and medicine should be particularly familiar with the policies.<sup>211</sup> Ohio State's policy breaks down the procedure for export control into major categories including export classifications, shipping, and technical data security.<sup>212</sup> Other universities can benefit from developing similar policies and training materials to ensure consistent education of export controls. Each university needs to consider the type of research they engage in to ensure its policy is the right scale for its specific needs.

Additionally, universities can benefit from centralizing the oversight for classified programs, unclassified programs, and export controls to ensure efficient use of resources and management of information.<sup>213</sup> The centralized department can be responsible for maintaining an export control program and developing a policy for the university.<sup>214</sup> This department can also focus on educating

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<sup>209</sup> See, e.g., OHIO STATE UNIV., EXPORT CONTROL UNIVERSITY POLICY (Apr. 15, 2018), <http://orc.osu.edu/files/Export-Control-Policy.pdf>; VA. POLYTECHNICAL INST. AND STATE UNIV., EXPORT AND SANCTIONS COMPLIANCE POLICY (Jan. 21, 2015), <https://policies.vt.edu/13045.pdf>.

<sup>210</sup> OHIO STATE UNIV., *supra* note 209.

<sup>211</sup> *Id.*

<sup>212</sup> *Id.*

<sup>213</sup> *Student Visa Integrity*, *supra* note 1 (statement of Dr. Kevin Gamache, Chief Research Security Officer, The Texas A&M University System).

<sup>214</sup> Rowena Rege, *Universities Should Implement Internal Control Programs to Monitor Compliance with Export Control Laws*, 35 J.L. & EDUC. 199, 220 (2006).

university researchers and performing audits as necessary.<sup>215</sup> The benefits of having one centralized program is a focus on information and protecting assets.<sup>216</sup>

In addition to centralizing oversight, physical separation of export control and non-export control research may be advantageous specifically at large research universities. For example, Georgia Institute of Technology (“Georgia Tech”) has a separate nonprofit, research institute called the Georgia Tech Research Institute (“GTRI”).<sup>217</sup> Unlike Georgia Tech, GTRI focuses more in depth on certain core competencies, such as cybersecurity information, electromagnetics, and threat systems research and development.<sup>218</sup> The Georgia Tech Office of Research Integrity Assurance developed a specific training in order to better administer the required export control information to those at the GTRI.<sup>219</sup> Although the same federal regulations apply to everyone, providing this separate training can ensure those whose research may be most susceptible to export controls fully understands the regulations and their applicability.

Similarly, Johns Hopkins University has a separate applied physics laboratory.<sup>220</sup> The Johns Hopkins Applied Physics Laboratory (“APL”) is the largest university affiliated research center, and much like GTRI, the center is a nonprofit organization.<sup>221</sup> APL was founded in 1942 to find solutions to national security, scientific, and engineering challenges facing the United States.<sup>222</sup>

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<sup>215</sup> *Id.*

<sup>216</sup> *Student Visa Integrity*, *supra* note 1 (statement of Dr. Kevin Gamache, Chief Research Security Officer, The Texas A&M University System.).

<sup>217</sup> *About Us*, GA. TECH. RES. INST., <https://www.gtri.gatech.edu/about> (last visited Apr. 4, 2019).

<sup>218</sup> *Core Competencies*, GA. TECH. RES. INST., <https://www.gtri.gatech.edu/core-competencies> (last visited Apr. 4, 2019).

<sup>219</sup> *GTRI Training - FAQs & Links*, GA. TECH. OFF. OF RES. INTEGRITY ASSURANCE, <http://researchintegrity.gatech.edu/about-export/for-gtri> (last visited Apr. 4, 2019).

<sup>220</sup> JOHNS HOPKINS APPLIED PHYSICS LABORATORY, <https://www.jhuapl.edu> (last visited Apr. 4, 2019).

<sup>221</sup> *About APL*, JOHNS HOPKINS APPLIED PHYSICS LABORATORY, <https://www.jhuapl.edu/About> (last visited Apr. 4, 2019).

<sup>222</sup> *Id.*

APL continues to provide United States government agencies expertise and support in issues of national priority and to develop technology.<sup>223</sup> Oftentimes, these types of research institutes are physically separated from the main campus of a university, and have different security measures than a standard university would in order to ensure export control protection. Separating these types of facilities is one way to ensure compliance with federal export control regulations and protect against academic espionage; however, it is not warranted at all universities, it depends on the type of research the university performs.

## VI. CONCLUSION

The conversation around academic espionage and export controls continues to be discussed at various levels of the federal government. A key issue in academic espionage that remains unresolved is that of emerging technologies. The Export Control Reform Act expands technology applicable to export control regulations to include emerging and foundational technologies.<sup>224</sup> The issue with emerging technologies is the technology is in such early stages it is not clear what exactly it can be used for, and, thus, it is not clear which export control regulations, if any, apply. The ECRA provides for an interagency process to determine what these emerging and foundational technologies may be and how to implement controls.<sup>225</sup> This will likely impact university research and may expand the scope of what may be subject to export controls.

A precarious balance exists between remaining a global leader in academic research and technological advancements while ensuring intellectual property is not improperly obtained and taken outside of the country. Export control regulations remain the strongest safeguard against this academic espionage threat. Continued implementation, guidance, and policies at the federal and university level will be vital to ensuring open and collaborative environments at universities can continue to thrive, while protecting national security.

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<sup>223</sup> JOHNS HOPKINS APPLIED PHYSICS LABORATORY, *supra* note 220.

<sup>224</sup> Barker et al., *supra* note 137.

<sup>225</sup> *Id.*