

**U.S.-Israel**

**Academic  
Collaboration**

## **Final Report**

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## Executive Summary

The internalization of higher education can take different forms. This research explores two of these forms in the context of U.S.-Israel academic collaboration: research collaboration and student mobility. The first part of the research presents data and analyzes U.S.-Israel research collaboration over the past decade as it is manifested in joint academic publications, using bibliometric tools. The second part of the research presents changes and trends in U.S.-Israel student mobility.

### 1. Changes and Trends in U.S.-Israel Joint Publications, 2006-2015<sup>1</sup>

- The number of joint U.S.-Israel publications, where at least one collaborating researcher is affiliated with a U.S. institute and at least one collaborating researcher is affiliated with an Israeli institute went up from 3,439 joint U.S.-Israel publications in 2006 to 4,979 publications in 2015, a marginal increase of 45%. (The marginal increase in the total number of U.S. globally joint publications was 69% in the same period).
- Some of the top rated research institutes in the U.S. [according to academic ranking of world universities (Shanghai Ranking), 2015] such as Massachusetts Institute of Technology, UC Berkeley, Columbia University of the City of New York, Harvard University, Stanford University and others collaborate with Israeli research institutes. In many of these institutes the number of joint U.S.-Israel publications has increased in 2006-2015. For example:
  - › The number of Stanford University-Israel joint publications has increased from 79 in 2006 to 176 in 2014. Since 2008 the number of annual joint publications was relatively constant, with an average of 169 joint Stanford-Israel publications per year. In 2015 the number of joint publications increased to 263, mainly due to an increase in the number of joint publications in the scientific field of Physics and Astronomy.
  - › The Number of Princeton University-Israel joint publication has increased from 81 in 2006 to 104 in 2015, with an average of 99 joint publications per year in that period.
  - › The number of Joint NYU-Israel publications steadily increased during the period 2006-2015, with a peak of 234 joint publications in 2012. The five-year average increased from 83 joint publications per year in 2006-2010 to 191 joint publications per year in 2011-2015.

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<sup>1</sup> Data source: data retrieved from Elsevier databases, Scopus and SciVal. Unless otherwise stated, the term publications refers to all scholarly output covered by these databases

- The number of UCLA-Israel Joint publication rose dramatically over the years 2006-2008 and declined in 2009. The number of joint publications remained relatively steady since 2010, with an average of 89 joint publications per year over the period 2011-2015.
- The highest number of joint U.S.-Israel publications during 2006-2015 was in the field of Medicine, followed by Physics and Astronomy, Biochemistry, Genetics and Molecular Biology, Computer Sciences, Mathematics, Engineering, Agriculture and Biological Sciences, Social Sciences, Neuroscience and Material Sciences.
- In the field of Social Sciences, the number of U.S.-Israel joint publications has grown from 189 in 2006 to 359 in 2015.

## 2. Changes and Trends in U.S.-Israel Student Mobility in the Past Decade

Student mobility between the U.S. and Israel is an important part of the academic collaboration between the two countries. In order to portray an in depth picture of the changes and trends in U.S.-Israel student mobility in the last decade, we conducted interviews with heads and members of international schools in leading Israeli higher education institutes and with other experts in the field of student mobility in Israel and in the United States. We also gathered data from various public databases.

Our main findings are:

### 2.1. Global Changes and Trends in Student Mobility

- Over the past three decades, the number of students enrolled outside their country of citizenship has risen dramatically, from 0.8 million worldwide in 1975 to 4.5 million in 2012.
- International students' preferences changed during the years, especially in the last decade, and universities worldwide adjusted their international programs accordingly. For example: ten years ago international students were typically enrolled in one-year programs. Over time there was a significant decrease in the duration of international students' programs, from one-year programs to six-month programs and to semester programs. Today it is not uncommon to find students in few weeks or even in few days long programs.

### 2.2. Changes in Number and Profile of U.S. Students in Israel

- According to the Institute of International Education (IIE) the number of U.S. students who studies in Israel increased from 1,981 in 2005/2006 to 3,317 in 2014/2015.
- Some of our interviewees noted that the numbers of U.S. students who studied in Israel in the 90's was considerably higher than the numbers of U.S. students who studied in Israel in the following decade.

- During the years 2005/06-2014/15, Israel's position among top destinations for international U.S. students remained relatively constant.
- The profile of U.S. students who chose to study in Israel changed over the years:
  - less Jewish students are looking for an in-depth experience of the Israeli culture.
  - Many U.S. students who choose to study in Israel are no longer interested in Judaism and no longer incline toward Social Sciences and Humanities.
  - U.S. students (like many other international students) put more emphasis on gaining credit toward their majors and on non-credit activities such as volunteer work and non-credit internships than on specific countries or destinations.
  - First degree U.S. students are looking for shorter programs than in the past (mostly semester or shorter programs), which fit into their academic calendar and grant easily transferable credit. There is also a new tendency among second degree students to prefer one year (3 semesters) full MA programs.
  - Although a large number of U.S. students are interested in study abroad shorter programs, there is a developing trend of U.S. students who are looking for full first degree programs abroad.
- Israeli universities and colleges have made changes in the international programs they offer in order to accommodate the changing requirements of U.S. and other international students as described above. For example: Israeli universities and colleges are offering a larger variety of semester programs and 4-8 weeks short programs; Many Israeli universities and colleges have integrated internship or volunteer work periods into their international programs; Efforts have been made to adjust programs' schedule to the U.S. academic calendar; Some Israeli universities and colleges recognized a demand for international experience in specific study niches, and begun offering special interest study abroad programs; Some universities increased the number and the range of courses in Science, Technology, Engineering and Mathematics (STEM).

### **2.3. Changes in the factors that influence U.S. students' choice to study in Israel**

- Many of the U.S. students who choose to study in Israel still do so because they want to strengthen their Jewish identity and become familiar with their own Jewish heritage.
- However, in recent years the ideas of "exploring Jewish identity" or "exploring Israel" are not sufficient reasons for choosing Israel as a study abroad destination. Many U.S. students who choose to study in Israel do so because:

- Some Israeli universities are highly ranked in international university ranking schemes such as the Academic Ranking of World Universities (Shanghai Ranking) and are known for academic excellence. This is a major consideration for students who are interested in full degree programs, especially advanced degrees' programs.
- Tuition in Israeli universities and colleges is much lower than in similarly ranked U.S. universities, and costs of living are relatively low.
- It is possible (in some cases) to integrate an internship or volunteer work period into the study abroad program.
- Other reasons that were mentioned for choosing Israel as a study abroad destination are: The possibility of receiving credit and scholarships and the possibility of speeding up graduation time (in some programs few weeks courses receive full credit); The presence of prominent Israeli lecturers on U.S. campuses (including cases of connections created between Israeli lecturers or researchers and U.S. research students); The large concentration of Israeli higher institutes graduates in U.S. High-tech companies.
- It is important to note that a student's decision to study in Israel is influenced by his or her home university policy, and on whether that university actively advances study abroad programs with Israeli universities and grants credit and scholarships to participants in such programs. Some students do not choose Israel as their study abroad destination because their home universities do not allow student participation in study abroad programs in Israel.

#### **2.4. Barriers that Influence U.S. Students' Choice to Study in Israel**

- Escalations in the security situation in Israel raises students' (and their family members') concerns for their own security and safety, and make students more reluctant to the idea of traveling to Israel. This is mostly true for first degree students who are usually younger and more influenced by their families' concerns, and for students who are interested in short programs. Advanced degree students or students in longer programs, are usually more interested in the academic level of the program and are less influenced by the security situation.
- In the beginning of the previous decade, the U.S. State Department renewed its travel warning to Israel. As a result, a significant number of North American colleges and universities have placed limitations on Israel study and research options for students and faculty due to security fears and insurance implications. Some U.S. universities still ban their students from studying in Israel and others require students to sign waiver forms (usually required by legal and risk-management departments). Students from such universities are less likely to choose Israel as their study abroad destination.

- Other barriers that were mentioned as influencing U.S. students' choice to study in Israel are:
  - A limited variety of courses taught in English
  - A limited number of student exchange programs with U.S. universities.
  - A limited number of courses that enable U.S. students to make study progress toward their degrees in subjects other than Jewish Studies, Conflict Resolution etc.
  - The fact that the resources and facilities available to graduate research students in Israel are no match to the resources and facilities available in the U.S.
  - The need to issue student visa before coming to study in Israel [a barrier for students who are already in Israel (for example as Ulpan students) and wish to continue studying]
- For many years, student mobility was not one of the Israeli higher education system's main priorities. The focus was always on internalization of research (for example joint research projects or hosting foreign third degree or post doctorate students). Under such conditions it was hard to compete with countries that are attractive in terms of language, culture, campus atmosphere etc. and that also spend significant resources on marketing and promotion (like some European countries).

#### **2.5. Factors that Influence Israeli Students' Choice to Study in the U.S.**

- The relatively small number of student exchange agreements with U.S. universities means that most Israeli students interested in studying in the U.S. are required to pay a much higher tuition than in Israel.
- Even students who do have the opportunity to participate in student exchange programs can't always afford the higher costs of living in the U.S.
- Israeli students are typically older than their U.S. peers due to the years spent on military service. Some of them already have job and family commitments (especially advanced degree students) and find it difficult to leave Israel for a few months. Students who don't have such commitments sometimes prefer not to study with much younger students.

## Introduction

The internalization of higher education can take different forms. The American Council on Education (ACE) specifies five broad categories of policies and programs of higher education internationalization: Student Mobility, Scholar Mobility and Research Collaboration, Cross-Border Education (such as campuses abroad), Internationalization at Home (such as internationalization of the curriculum) and Comprehensive Internationalization Strategies (such as strategies with a specific geographic focus) (Helms, Rumbley, Brajkovic, & Mihut, 2015)

Our current research explores two categories of internalization in the context of U.S.-Israel academic collaboration: research collaboration and student mobility. Section 1 presents data and analyzes U.S.-Israel research collaboration over the years 2006-2015 as it is manifested in joint academic publications, using bibliometric tools. Section 2 presents changes and trends in U.S.-Israel student mobility.

## 1. Changes and Trends in U.S.-Israel Joint Publications, 2006-2015

### 2.1. U.S. International Collaboration

The share of U.S. joint publications<sup>2</sup> with other countries<sup>3</sup> out of all U.S. publications has increased by 10% in the years 2006-2015, as presented in Figure 1. However, according to the National Science Foundation<sup>4</sup> (2014), the U.S. share of internationally coauthored publications (of all U.S. publications) is still substantially lower than that of many other smaller countries. The NSF report states two main reasons for the country's lower rate of international scientific collaboration:

1. The U.S. has more diversified scientific establishments and a high level of infrastructure and personnel, allowing opportunities for collaborative scientific groups within its own borders.
2. Unlike their European peers, U.S. researchers do not participate in mega-scale programs such as the EU's Framework Programmes for Research and Technological Development which boost international collaboration between member countries.

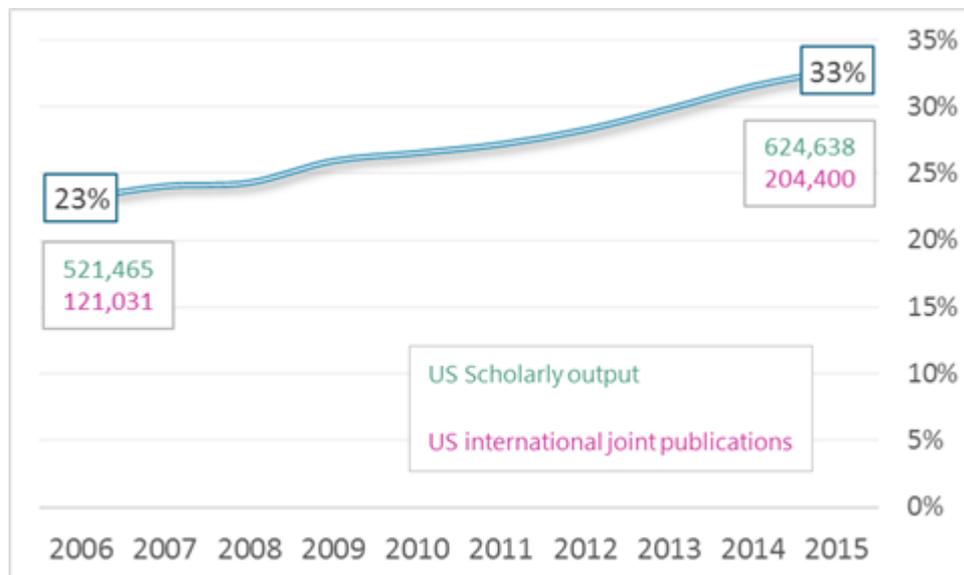
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<sup>2</sup> Data source: data retrieved from Elsevier databases, Scopus and SciVal. Unless otherwise stated, the term publications refers to all scholarly output covered by these databases

<sup>3</sup> A U.S. joint publication with another country has at least one collaborating researcher affiliated with a U.S. institute and at least one collaborating researcher affiliated with an institute from a different country at the time of publication

<sup>4</sup> National Science Board. 2014. Science and Engineering Indicators 2014. Arlington VA: National Science Foundation (NSB 14-01) ([website](#))

Figure 1: The share of U.S. international joint publications out of all U.S. publications, 2006-2015



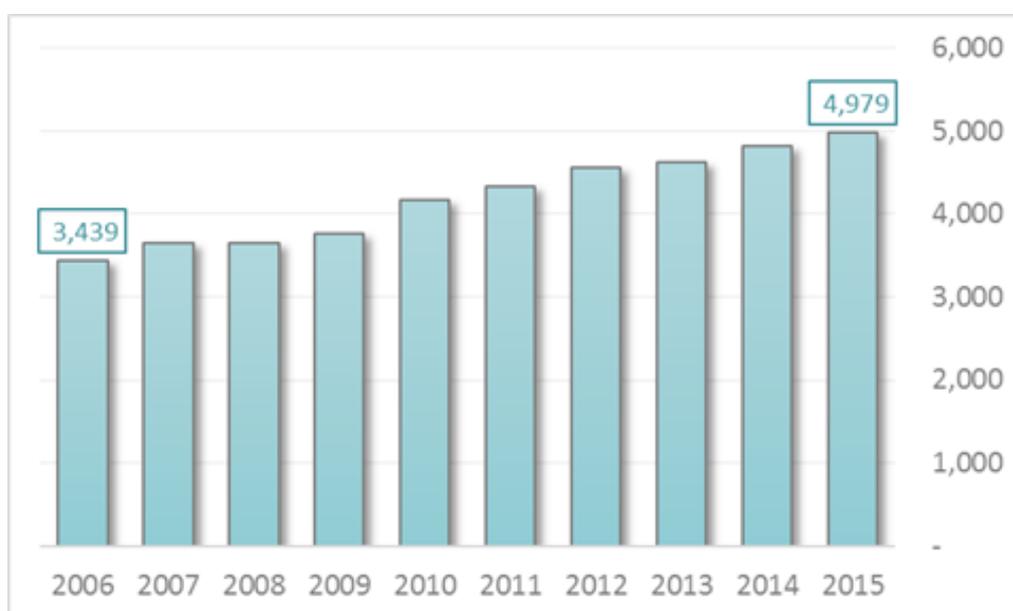
The countries with which U.S. scientists published the highest number of joint publications in 2006-2015 are China, United Kingdom, Germany, Canada, France, Italy, Japan, Australia, South Korea and Spain. The growth rate of joint publications with these countries varied during the period. Japan, for example, demonstrated a relatively modest growth in the number of joint publications with the U.S. (6% growth, from 10,005 joint publications in 2006 to 10,578 publications in 2015). The joint publications growth rate for most other countries mentioned above ranged from 50% to 118%. However, the number of U.S.-China joint publications has grown from 9,062 in 2006 to 40,905 in 2015, an increase of about 350%.

## 2.2. The Extent of U.S.-Israel Academic Collaboration

Although the growth rate of U.S.-Israel joint publications increased less than the growth rate of U.S. joint publications with countries like India, Brazil, Sweden and Taiwan in 2006-2015, Israel is still a preferred collaboration partner for U.S. researchers.

The number of joint U.S.-Israel publications, where at least one collaborating researcher is affiliated with a U.S. institute and at least one collaborating researcher is affiliated with an Israeli institute went up from 3,439 joint U.S.-Israel publications in 2006 to 4,979 publications in 2015, a marginal increase of 45%. (The marginal increase in the total number of U.S. globally joint publications was 69% in the same period, see Figure 1).

Figure 2: Annual change in number of joint U.S.-Israel publications, 2006-2015



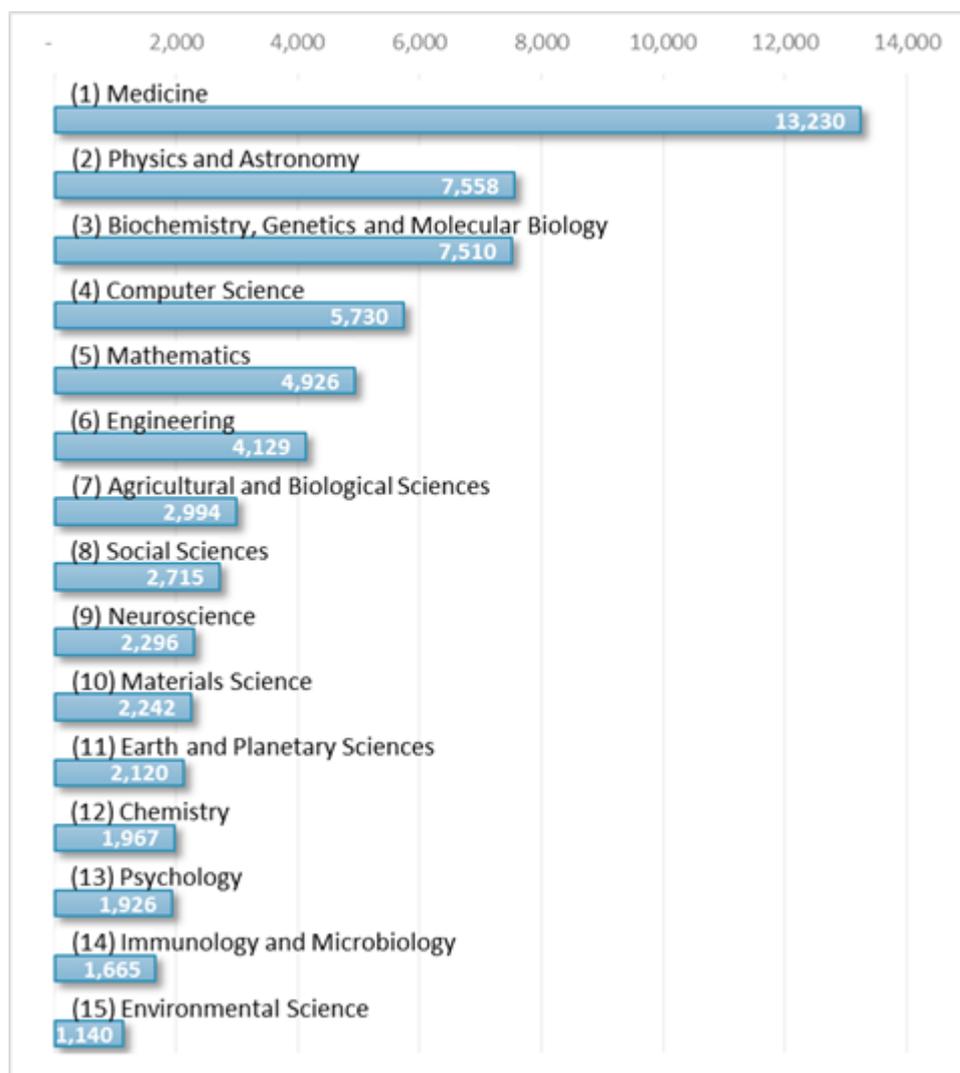
Joint U.S.-Israel publications are publications in which at least one collaborating researcher is affiliated with a U.S. institute and at least one collaborating researcher is affiliated with an Israeli institute at the time of publication.

Joint U.S.-Israel publications might include collaborating researchers from other countries as well. The average rate of joint U.S.-Israel publications that do not include any collaborating researchers from other countries is over 60% of all U.S.-Israel joint publications.

## 2.3. U.S.-Israel Academic Collaboration by Scientific Fields and by Institutes

The highest number of joint U.S.-Israel publications in 2006-2015 was in the field of Medicine, followed by Physics and Astronomy, Biochemistry, Genetics and Molecular Biology, Computer Sciences, Mathematics, Engineering, Agriculture and Biological Sciences, Social Sciences, Neuroscience and Material Sciences. Figure 3 presents Joint U.S.-Israel publications by scientific fields:

Figure 3: Joint U.S.-Israel publications by scientific fields, 2006-2015

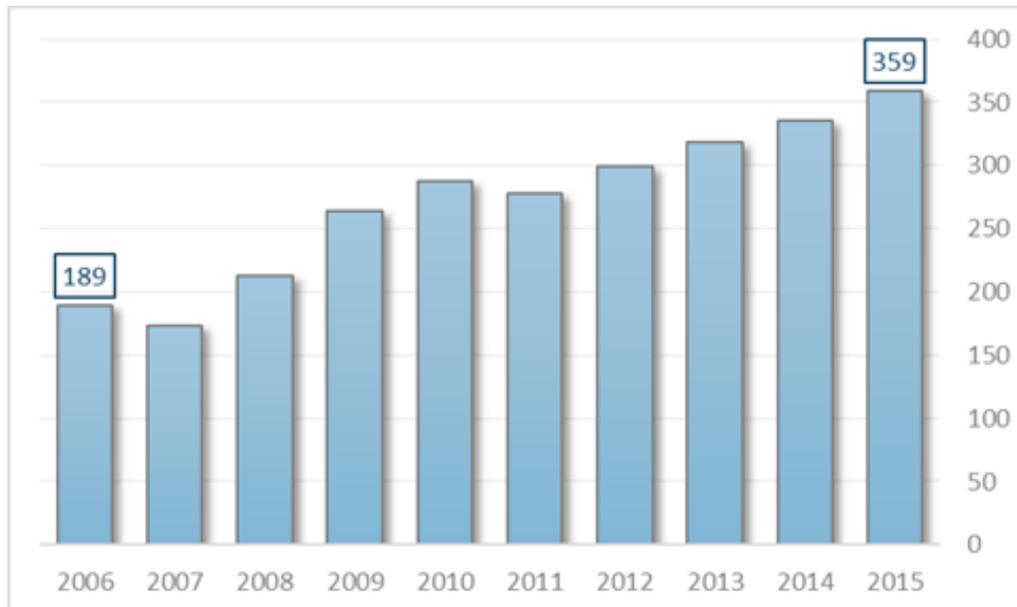


Joint U.S.-Israel publications are publications in which at least one collaborating researcher is affiliated with a U.S. institute and at least one collaborating researcher is affiliated with an Israeli institute at the time of publication.

Publications might be assigned to more than one field.

During the period of 2006-2015, the number of joint U.S.-Israel publications increased in many of the scientific fields. In the field of Social Sciences, for example, the number of U.S.-Israel joint publications has grown from 189 in 2006 to 359 in 2015:

Figure 4: Joint U.S.-Israel publications in the field of Social Sciences, 2006-2015



Joint U.S.-Israel publications are publications in which at least one collaborating researcher is affiliated with a U.S. institute and at least one collaborating researcher is affiliated with an Israeli institute at the time of publication

### Box 1: U.S.-Israel collaboration in the field of Social Sciences

Although the field of Social Sciences is not within the top five scientific fields with the highest rate of joint U.S.-Israel publications, vibrant collaboration does exist between researchers from the two countries. Kristensen (2015) found, for example, that most authors in the subfield of International Relations are based in the United States and Europe and most co-authorship links accrue within these regions or between them, with the exception of Israel. Israel's co-authorship linkages in this subfield place her in the same social (if not physical) space as the United States. The following map illustrates the co-authorship linkages discussed by Kristensen:



Figure 5: The global distribution of research articles in 10 top international relations journal, 2010

Source: Revisiting the “American Social Science”—Mapping the Geography of International Relations<sup>5</sup>

Harzing and Giroud<sup>6</sup> (2014) found bibliometric indicators which place Israel in a group of countries which have their main Revealed Comparative Advantage in the Social Sciences, together with the United States, UK, Canada and the Netherlands.

Some of the collaborative research in the field of Social Sciences can be attributed to such initiatives as the Israel Institute for Advanced Studies (IIAS) of Jerusalem<sup>7</sup> and other Israeli initiatives and to different departments of Israel studies in US institutes such as the Schusterman Center for Israel Studies in Brandeis University<sup>8</sup> and the Berkley Institute for Jewish Law and Israel Studies in Berkley University<sup>9</sup>.

Funding programs, such as the United State-Israel Binational science foundation (BSF)<sup>10</sup>, also support collaborative research in areas such as Psychology and Sociology.

Such initiatives contribute to U.S.-Israel collaboration in Social Sciences and demonstrate the effect of targeted actions on realizing more of the existing potential for collaboration in this field.

Some of the top rated research institutes in the U.S. [according to Academic Ranking of World Universities (Shanghai Ranking<sup>11</sup>), 2015] such as Massachusetts Institute of

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<sup>5</sup> Kristensen, Peter Marcus. (2015) Revisiting the “American Social Science”—Mapping the Geography of International Relations. *International Studies Perspectives* ([website](#))

<sup>6</sup> Harzing, A. W., & Giroud, A. (2014). The competitive advantage of nations: An application to academia. *Journal of Informetrics*, 8(1), 29-42 ([website](#))

<sup>7</sup> Israel Institute for Advanced Studies (IIAS) of Jerusalem ([website](#))

<sup>8</sup> Schusterman Center for Israel Studies in Brandeis University ([website](#))

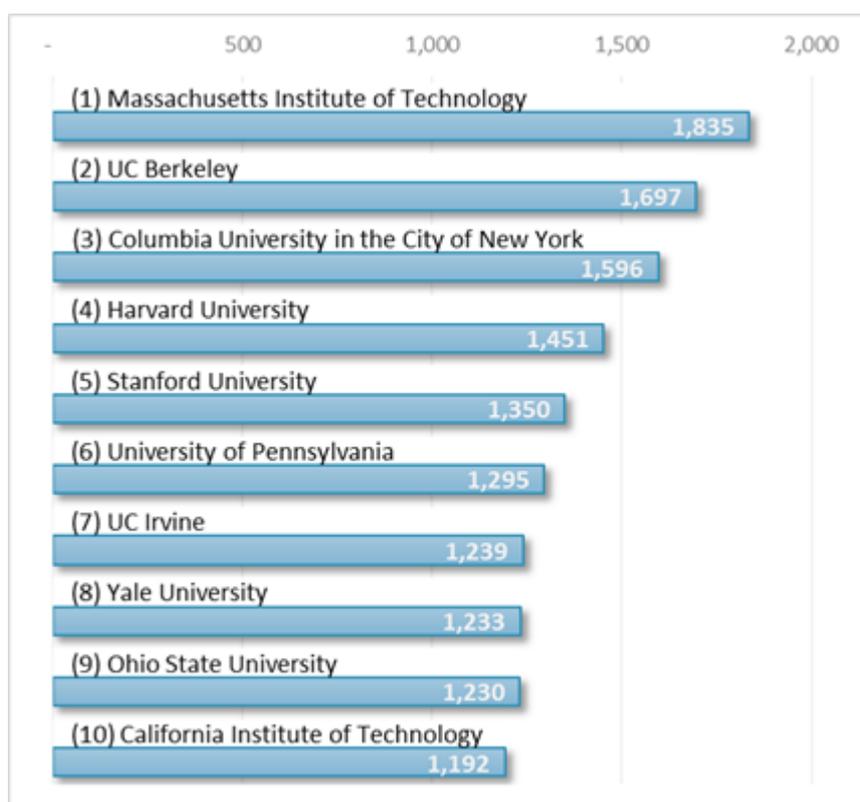
<sup>9</sup> Berkley Institute for Jewish Law and Israel Studies in Berkley University ([website](#))

<sup>10</sup> United State-Israel Binational science foundation (BSF) ([website](#))

<sup>11</sup> Academic Ranking of World Universities 2015 ([website](#))

Technology, UC Berkeley, Columbia University of the City of New York, Harvard University, Stanford University and others collaborate with Israeli research institutes. Figure 6 presents the ten U.S. universities which had the highest number of joint publications with Israel during the period of 2006-2015.

Figure 6: U.S. ten leading universities in number of joint U.S.-Israel publications, 2006-2015



Joint U.S.-Israel publications are publications in which at least one collaborating researcher is affiliated with a U.S. institute and at least one collaborating researcher is affiliated with an Israeli institute at the time of publication

The average share of joint publications with Israel out of the total publications of each U.S. institute in Figure 6 is 2% to 4%.

Table 1 presents the U.S. institutes with which six Israeli universities shared the highest number of U.S.-Israel publications in 2006-2015:

Table 1: Joint U.S.-Israel publications by Israeli universities and U.S. institutes, 2006-2015

Israeli University	U.S. Institute	No. of Joint Publications
	Massachusetts Institute of Technology	1,056
	Ohio State University	940
	UC Berkeley	859
	Harvard University	850
	UC Berkeley	294
	Rutgers, The State University of New Jersey	233
	Stanford University	174
	University of California, Los Angeles	174
	Massachusetts Institute of Technology	737
	University of Chicago	572
	Columbia University in the City of New York	568
	Yale University	563
	Columbia University in the City of New York	834
	Harvard University	661
	Massachusetts Institute of Technology	648
	Stony Brook University State University of New York	637
	Stanford University	122
	University of Connecticut	91
	Harvard University	86
	Massachusetts Institute of Technology	86
	Boston University	134
	University of Maryland	129
	Johns Hopkins University	70
	Columbia University in the City of New York	63
	New York University	66
	Columbia University in the City of New York	61
	UC Davis	50
	University of Pennsylvania	40

Joint U.S.-Israel publications are publications in which at least one collaborating researcher is affiliated with a U.S. institute and at least one collaborating researcher is affiliated with an Israeli institute at the time of publication

Sorted by institutes with the highest number of joint publications with U.S. institutes.

The leading Israeli institute in number of joint publications with U.S. institutes is Tel Aviv University with more than 10,000 joint publications with U.S. institutes from 2006 to 2015.

Table 2 ranks the scientific fields with the highest rate of joint publications between Tel Aviv University and three leading U.S. institutes: Harvard University, Massachusetts Institute of Technology (MIT) and University of California, Berkeley:

Table 2: Scientific fields with the highest rate of joint publications between Tel Aviv University and three leading U.S. institutes, 2006-2015

Rank	MIT	Ohio State University	UC Berkeley
1	Physics and Astronomy	Physics and Astronomy	Physics and Astronomy
2	Engineering	Engineering	Earth and Planetary Sciences
3	Computer Science	Earth and Planetary Sciences	Computer Science
4	Mathematics	Medicine	Mathematics

Many of the Joint publications in Physics and Astronomy are an outcome of global collaboration led by the European Council for Nuclear Research (CERN), the European Laboratory for Particle Physics at Switzerland. Typically, such publications are co-authored by multiple researchers from multiple countries.

## 2. Changes and trends in U.S.-Israel Student Mobility in the Past Decade

### **Terminology and methodology:**

International student mobility can be viewed as a form of communication between countries (Chen & Barnett, 2000). Student mobility between the U.S. and Israel is an important part of the academic collaboration between the two countries.

Before specifying our findings on U.S.-Israel student mobility, it is important to clarify two basic terms we use in our research:

**Study Abroad** is defined by the Forum of Education Abroad<sup>12</sup> as a "subtype of Education Abroad that results in progress toward an academic degree at a student's home institution". In this research we take a broader view of the term "study abroad", and incorporate both studying toward a full degree (excluded from the Forum of Education Abroad's original definition) and also non-credit activities such as work, volunteering and non-credit internships which are driven by learning goals<sup>13</sup>

**Student Exchange** is defined by the Forum of Education Abroad as a "reciprocal agreement whose participants are students. Exchanges often involve some system of "banking" tuition (and sometimes other fees) collected from outgoing students for use by incoming students". The Forum of Education Abroad indicates that the term "student exchange" is sometimes used erroneously as a synonym for study abroad. In this research we use the term "Study Abroad program" to indicate programs which do not fall under agreement which involve such "system of banking". We do so in order to differentiate study abroad programs from student exchange programs, a differentiation which is important in the context of U.S.-Israel student mobility schemes.

In order to portray an in depth picture of the changes and trends in U.S.-Israel student mobility in the last decade, we conducted interviews with heads and members of international schools in leading Israeli higher education institutes and with other experts in the field of student mobility in Israel and in the United States. (see a list of interviewees in annex 3). We also gathered data from various public databases such as

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<sup>12</sup> The Forum of Education Abroad is a non-profit, membership association recognized by the U.S. Department of Justice and the Federal Trade Commission as the Standards Development Organization (SDO) for the field of education abroad.: [forumea](http://forumea.org)

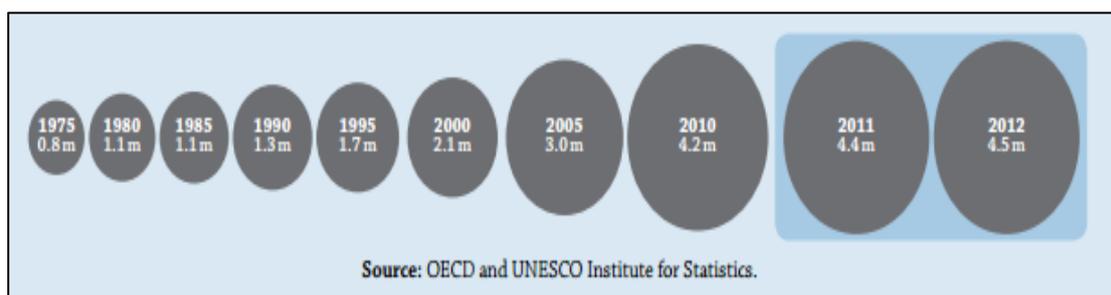
<sup>13</sup> This definition is also used by the Institute of International education's program "[Generation Study Abroad](#)"

the OECD Education at a Glance 2015 database<sup>14</sup> and the Institute of International Education (IIE) Open Doors database<sup>15</sup>.

## 2.4. Global Changes and Trends in Student Mobility

Over the past three decades, the number of students enrolled outside their country of citizenship has risen dramatically, from 0.8 million worldwide in 1975 to 4.5 million in 2012 (OECD, 2014).

Figure 7: Growth in internationalisation of tertiary education (1975-2012, in millions)



The world's leading country in the number of international students in tertiary education is the United States, which attracted about 19% of all international students in the world in 2013. Other leading countries in number of international students are the United Kingdom (10% of all international students in 2013), Australia (6% of all international students in 2013), France (6% of all international students in 2013) and Germany (5% of all international students in 2013) (OECD, 2015).

Most of our interviewees indicated that apart from the evident change in global student mobility scope, international students' preferences also changed during the years, especially in the last decade, and universities worldwide adjusted their international programs accordingly. For example: ten years ago international students were typically enrolled in one-year programs. Over time there was a significant decrease in the duration of international students' programs from one-year programs to six-months programs and to semester programs. Today it is not uncommon to find students in few weeks or even few days long programs.

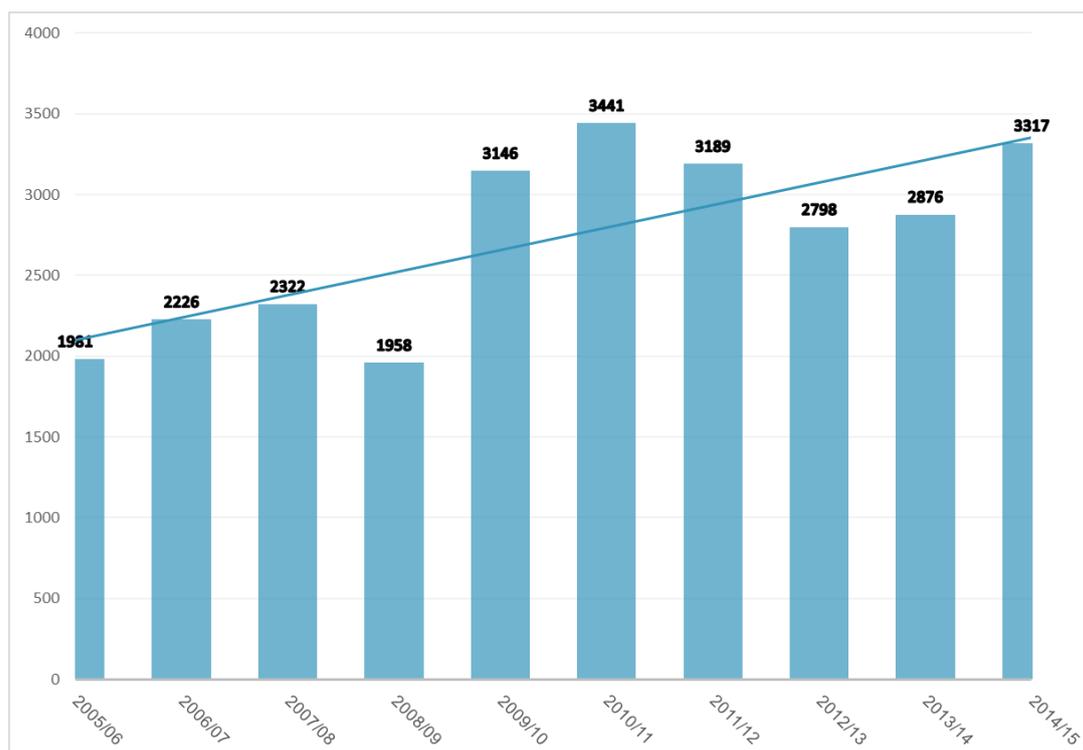
<sup>14</sup>OECD education at a Glance 2015 database; [oecd-ilibrary](#)

<sup>15</sup>Institute of International Education (IIE) Open Doors database : [iie-Research and publication](#)

## 2.5. Changes in the Number and Profile of U.S. Students in Israel

According to the Institute of International Education (IIE) the number of U.S. students who studies in Israel<sup>16</sup> increased from 1,981 in 2005/06 to 3,317 in 2014/15 as can be seen in Figure 8:

Figure 8: Annual number of U.S. students studying in Israel, 2005/06-2014/15



Source: Analysis of IIE data by Samuel Neaman Institute.

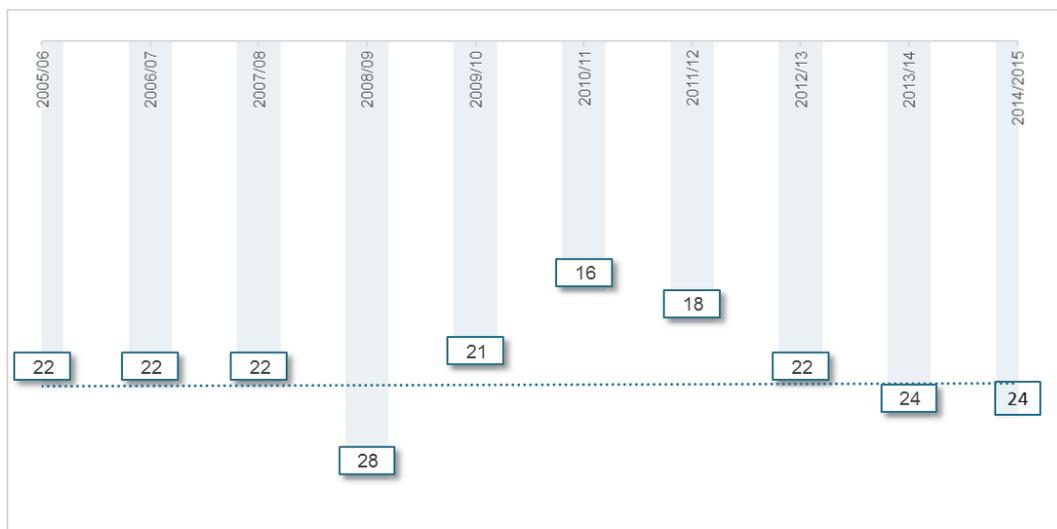
A possible explanation for the decrease in the number of U.S. student who chose Israel as their study abroad destination in 2008/09 could be the influence of the 2008 global financial crisis combined with an escalation in the security situation in Israel.

During the years 2005/06-2014/15 Israel's position among top destinations for international U.S. students remained relatively constant (except for the years 2008/2009 and 2010/2011) as can be seen in Figure 9:

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<sup>16</sup> Students who received credit from U.S. universities for programs taken in Israel

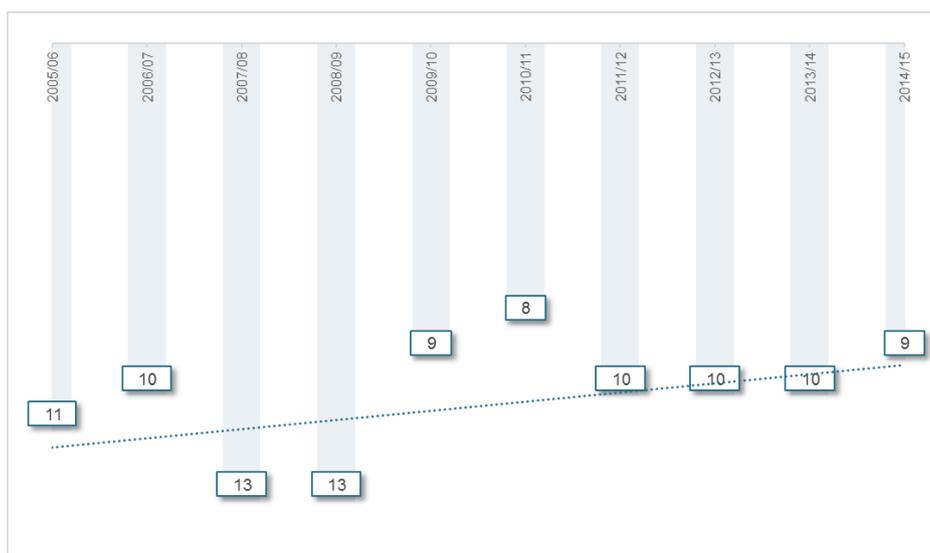
Figure 9: Israel's location among top destinations for U.S. international students, 2005/06-2014/15



Source: Analysis of IIE data by Samuel Neaman Institute.

In most years during the relevant decade, Israel was among the top ten U.S. international students' destinations<sup>17</sup> with highest U.S. student to local population ratio, as can be seen in Figure 10:

Figure 10: Israel's location among U.S. international students' destinations with highest U.S. student to local population ratio, 2005/06-2014/15



<sup>17</sup> Destinations with at least 1,000 U.S. students per year.

Source: Analysis of IIE data by Samuel Neaman Institute. Population according to the World Bank Data<sup>18</sup>.

It can be concluded from Figure 8 and Figure 10 that there was a moderate trend of increase in the number of U.S. international students studying in Israel from 2005/06 to 2014/15. However, it is important to note that some of our interviewees said that the numbers of U.S. students who studied in Israel in the 90's was considerably higher than the numbers of U.S. students who studied in Israel in the following decade. This claim is supported by the IIE data, according to which the number of international U.S. students who studied in Israel in 1999/2000 was 3,898.

The profile of U.S. students who chose to study in Israel also changed over the years. One of the interviewees summarized the main changes:

*"In the past, young Jews used to come to Israel before or during their college years. Many came for a whole year after they finished high school or during their third year of college. This used to be a life changing experience for many. But not anymore. In recent years less and less Jewish students are looking for an in-depth experience of the Israeli culture. They find it is too "expensive" [to spend a long period of time in Israel] and they are more interested in advancing their carriers through internship positions that will improve their resumes"*

Another interviewee said that U.S. students who choose to study in Israel today are:

*"no longer interested in Judaism, and [no longer] incline toward Social Sciences and Humanities"*

The phenomena described by the interviewees is in line with the growing tendency of international students to put greater emphasis on gaining credit toward their majors and on non-credit activities such as work, volunteering and non-credit internships and not on specific destinations or countries. Programs that combine credit and non-credit activities are one of the best ways students can acquire global skills and open up personal and professional opportunities. As one of the interviewees said:

*"In the past students used to choose "cool" places like Berlin, Barcelona or Tel-Aviv as their study abroad destination. Today the students ask 'what's in it for me?'. They want to know how will a specific program advance their majors, help them get a better job or look on their resumes."*

Even "Gap Year" students (Students who spend abroad the year before going to college or university and after finishing high school) are now looking for a 'freshman year abroad' in which they can gain credit toward their future first degree, rather than the classic 'junior year abroad' where students spend a full academic year immersed in another culture and language.

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<sup>18</sup> [data-worldbank](#) retrieved at 02.4.2016.

Many of the interviewees agreed that U.S. international first degree students visiting Israel are looking for shorter programs than in the past, and are mostly interested in semester or shorter programs. One of the interviewees said that:

*"In the past, most study abroad students came for a one-year program and very few came for a semester. Today only 3% of all study abroad students come to Israel for a whole year. About one third of the students come for a semester, and most of the rest come for a few weeks in the summer or during semester break".* This trend is also true for second degree students who recently show a preference to one year (3 semesters) full MA programs.

The tendency to prefer shorter program is not unique to U.S. students who study in Israel. According to the IIE, in 2003/04 to 2013/14 only 3% of all U.S. study abroad students studied in long term programs (academic or calendar year). 35% of all U.S. study abroad students studied in mid-length programs (one-two quarter/s or one semester) and 62% of all U.S. study abroad students studied in short-length programs (summer or up to 8 weeks).

Some of our interviewees noted that although a large number of U.S. students are interested in study abroad shorter programs, which easily grant transferable credits toward their majors and can fit into their academic calendar, there is a developing trend of U.S. students who are looking for full first degree programs abroad.

Israeli universities and colleges have made changes in the international programs they offer in order to accommodate the changing requirements of U.S. and other international students as described above. For example:

- Israeli universities and colleges are offering today a larger variety of semester programs and 4-8 weeks short programs than a decade ago.
- Many Israeli universities and colleges have integrated internship or volunteer work periods into their international programs.
- Efforts have been made to adjust the programs' schedule to the U.S. academic calendar to make sure U.S. students lose as little time as possible in their home universities. (U.S. students in semester or shorter study abroad programs usually arrive to Israel during spring break or during the summer).

- Some Israeli universities and colleges recognized a demand for international experience in specific study niches, and begun offering special interest study abroad programs such as DanceJerusalem<sup>19</sup> and ArtJerusalem<sup>20</sup>.
- Some universities increased the number and the range of courses in the STEM fields in order to appeal to students who are interested in STEM programs in the highly ranked universities of Israel (such as the Technion, Tel-Aviv University and the Hebrew University). One example is the Technion, which opened its international school in 2008, and is currently offering an Engineering and Science track, an Introduction to Medicine track and an Entrepreneurship and Innovation track.
- Some universities (such as the Technion, the Tel-Aviv University and the Interdisciplinary Center Herzliya) has developed full first degree programs in English, in order to attract international students who are interested in such programs.
- Some Israeli universities have opened one year full second degree international programs. For example: The Hebrew University of Jerusalem offers one-year MA programs in Entrepreneurship and Innovation, Israel Studies, Politics and Society, Nonprofit Management and Leadership, Islamic and Middle Eastern Studies, and Jewish Education.
- Some Israeli universities and colleges began addressing the issue of ease of credit transfer in their program planning.

## 2.6. Changes in the Factors that Influence U.S. students' Choice to Study in Israel

According to the OECD, the factors that influence students' choice of a country of study are: 1) language of instruction; 2) quality of programs; 3) tuition fees; 4) immigration policy; and 5) other factors such as the academic reputation of particular institutions

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<sup>19</sup> DanceJerusalem is the program for modern dance in the Hebrew university of Jerusalem. This unique year program, initiated jointly by the Hebrew University of Jerusalem's Rothberg International School and the Jerusalem Academy of Music and Dance, combines artistic training in dance skills and technique with academic exposure to Israel's challenging social, historical and cultural environment. Upon completion of the program, students receive academic transcripts from each institution. Source: [overseas-dance](#)

<sup>20</sup> ArtJerusalem is a joint initiative of the Bezalel Academy of Arts and Design, Jerusalem and the Hebrew University of Jerusalem, Rothberg International School (RIS) that combines artistic training, university study and first-hand exposure to Israel's challenging social, historical and cultural environment. Studies include a wide variety of art courses in such areas as Painting, Sculpture, Drawing and Screen Printing. Students also choose from a broad selection of university courses in Israel and Middle Eastern Studies, Religion, Behavioral Sciences and Environmental Studies, as well as Hebrew Language. Source: [overseas-art](#)

or programs, the flexibility of programs in counting time spent abroad towards degree requirements, recognition of foreign degrees, the limitations of tertiary education in the home country, future job opportunities, cultural aspirations and government policies to facilitate the transfer of credits between home and host institutions. (OECD, 2015). These factors have always influenced U.S. students' choice to study in Israel, but over the past decades there has been a shift in the weight assigned to each of the factors.

Many of the Jewish U.S. students who choose to study in Israel still do so because they want to "strengthen their Jewish identity and become familiar with their own Jewish heritage" with studying Hebrew as a secondary aim (Donitsa-Schmidt & Vadish, 2004).

One of our interviewees noted that non-Jewish U.S. students might choose Israel as their study abroad destination because of similar interest in exploring their own religion and heritage. Other students, both Jewish and non-Jewish might be

*"interested in the middle east conflict. These students might be interested in having careers in diplomacy or conflict resolution. Their interest is more vocational, [they want to] get an understanding and learn about things they might want to spend their career on"*

Many of our interviewees agreed that in recent years the ideas of "exploring Jewish identity" or "exploring Israel" are not sufficient reasons for choosing Israel as a study abroad destination<sup>21</sup>. According to these interviewees, the many U.S. students who choose to study in Israel do so because:

- Some Israeli universities are highly ranked in international university ranking schemes such as the Academic Ranking of World Universities (Shanghai Ranking) and are known for academic excellence. Many of our interviewees agreed that this is a major consideration for students who are interested in full degree programs, especially advanced degrees' programs.
- Tuition in Israeli universities and colleges is much lower than in similarly ranked U.S. universities, and costs of living are relatively low.
- It is possible (in some cases) to integrate an internship or volunteer work period into the study abroad program. As said earlier, many students prefer programs that combine academic studies with non-credit activities such as work, volunteering and non-credit internships because employers value study abroad experiences in the

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<sup>21</sup> In this regard it is important to note that some of our interviewees said that the Taglit-Birthright Israel program, who offers young Jews from around the world free 'educational Israel experiences', fully answers young Jews' need to visit Israel. Young Jews who participate in the Taglit-Birthright Israel program sometimes tend to choose other destinations as their study abroad destinations because they had "already been to Israel" and are looking for new experiences. Other interviewees however, said that visiting Israel within the Taglit-Birthright Israel framework actually encourages young Jews to choose Israel as their study abroad destination, especially when they are interested in longer programs or advanced degrees.

workplace, and because such program increase future employability, earnings potential and economic well-being of students.

Other reasons that were mentioned for choosing Israel as a study abroad destination are the possibility of receiving credit and scholarships and the possibility of speeding up graduation time (in some programs few weeks courses receive full credit); The presence of prominent Israeli lecturers on campus might also inspire students to choose Israel as their study abroad destination (including cases of connections created between Israeli lecturers or researchers and U.S. research students); The large concentration of Israeli higher institutes graduates in U.S. High-tech companies was also mentioned as a factor that might influence U.S. students to choose Israel as their study abroad destination; Interestingly, while some interviewees said that Israel's branding as the "startup nation" also influences U.S. students' choice to study in Israel, one interviewee said that since the U.S. is the world's leading country in high-tech and innovation, U.S. students are less attracted by the "startup nation" branding.

It is important to note that the students' decision to study in Israel is influenced by his or her home university policy, and on whether that university actively advances study abroad programs with Israeli universities and grants credit and scholarships to participants in such programs. Some students do not choose Israel as their study abroad destination because their home universities do not allow student participation in study abroad programs in Israel (see section 2.7)

## 2.7. Barriers that Influence U.S. Students' Choice to Study in Israel

Many of our interviewees mentioned the security situation in Israel since the year 2000 (and the first Intifada) as the single most influential factor that deters U.S. students from coming to Israel. The security situation influences students' decision to come to Israel in two ways:

- Escalations in the security situation in Israel raises students' (and their family members') concerns for their own security and safety, and make students more reluctant to the idea of traveling to Israel. This is mostly true for first degree students who are usually younger and more influenced by their families' concerns, and for students who are interested in short programs. Advanced degree students or students in longer programs (such as the international medicine program in Ben-Gurion University and graduate studies in the Technion) are usually more interested in the academic level of the program and are less influenced by the security situation.

Some representatives of international schools in Israeli universities said that there is an evident decrease in number of U.S. students right after major security events in Israel. One representative said that the number of U.S. students tend to climb

back in the years following such events, (sometimes even as soon as the following semester) but he feels that since the 2014 Israel–Gaza conflict (operation Protective Edge) the number of U.S. students in Israel has not gone back to normal, possibly due to the ongoing security tension in Israel.

- In the beginning of the previous decade the U.S. State Department renewed its travel warning to Israel. As a result, a significant number of North American colleges and universities have placed limitations on Israel study and research options for students and faculty due to security fears and insurance implications. Some U.S. universities still ban their students from studying in Israel and others require students to sign waiver forms (usually required by legal and risk-management departments). Students from such universities are less likely to choose Israel as their study abroad destination.

There are many other barriers which prevent U.S. students from choosing Israel as their study abroad destination:

- Many U.S. students (especially non-Jewish) are interested in academic courses taught in English. Today the variety of courses taught in English is limited. Israeli institutes are putting a lot of effort in recent years into developing more courses in English, especially in Israel's unique value propositions such as Education, MBA programs, Diplomacy, Archeology, Security and STEM studies.
- Israel has very few student exchange programs with U.S. universities. This has at least three reasons:
  - › Every incoming student from Israel in a student exchange program takes the place of a local U.S. student who would have paid a higher tuition. For this reason, U.S. universities are less interested in student exchange with Israel (as well as other countries).
  - › Israeli Higher education institutes benefit financially more from international students who pay international students' tuition.
  - › U.S. students in top U.S. universities are usually not interested in student exchange programs, because they feel that they are already receiving the best value for the high tuition they pay in their home universities.
- According to one of our interviewees, for a long time there was some rigidity in the programming by Israeli universities in terms of the course options that were available for international students. The general thought was that there was a value added or a special advantage in subjects such as Jewish history, Arab–Jewish relations, Religion and similar areas, and there wasn't an accompanying thought that it would be useful that students have choices that will enable them to take courses that count in their own programs, and enable them to make study progress toward their degrees. Students are less likely to study abroad when they are simply pursuing an

interest and taking courses that don't count in their programs. Another interviewee said that Israel is branded as world leader in Jewish studies and conflict resolution studies, but doesn't have the same reputation in other fields that interest U.S. students such as environmental studies, gender studies and science and technology.

- One of our interviewees said that the fact that "*students are required to issue their visa before coming to study in Israel is a major barrier for students who are already in Israel (for example as Ulpan students) and wish to continue studying*". These students need to go back to their countries to issue the visa. The same interviewee also said that the fact that international students are not allowed to work in Israel<sup>22</sup> presents a problem for second degree students, some of whom have families and are interested in working during their studies.
- The resources and facilities available to graduate research students in Israel are no match to the resources and facilities available in the U.S.
- Several interviewees said that for many years, student mobility was not one of the Israeli higher education system's main priorities. The focus was always on internalization of research (for example joint research projects or hosting foreign third degree or post doctorate students). Under such conditions it was hard to compete with countries that are attractive in terms of language, culture, campus atmosphere etc. and that also spend significant resources on marketing and promotion (like some European countries).

## 2.8. Factors that Influence Israeli Students' Choice to Study in the U.S.

According to the Institute of International Education, there has been a constant decrease in the number of Israeli students studying in the U.S. Some of our interviewees referred to the reasons for the relatively small number of Israeli international students in U.S. universities:

- The relatively small number of student exchange agreements with U.S. universities (see section 2.7) means that most Israeli students interested in studying in the U.S. are required to pay a much higher tuition than in Israel.
- Even students who do have the opportunity to participate in student exchange programs can't always afford the higher costs of living in the U.S.

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<sup>22</sup> Foreign students who hold a Student Visa are not allowed to work with this visa. However, foreign students who are also "Zakaey Shvut" – persons eligible under the Law of Return, are allowed to work during their stay on a part time job which enables them to continue studying. Source: DC Law Offices: <http://www.visa-law.co.il/student-visa-to-israel/>

- Israeli students are typically older than their U.S. peers due to the years spent on military service. Some of them already have job and family commitments (especially advanced degree students) and find it difficult to leave Israel for a few months. Students who don't have such commitments sometimes prefer not to study with much younger students.

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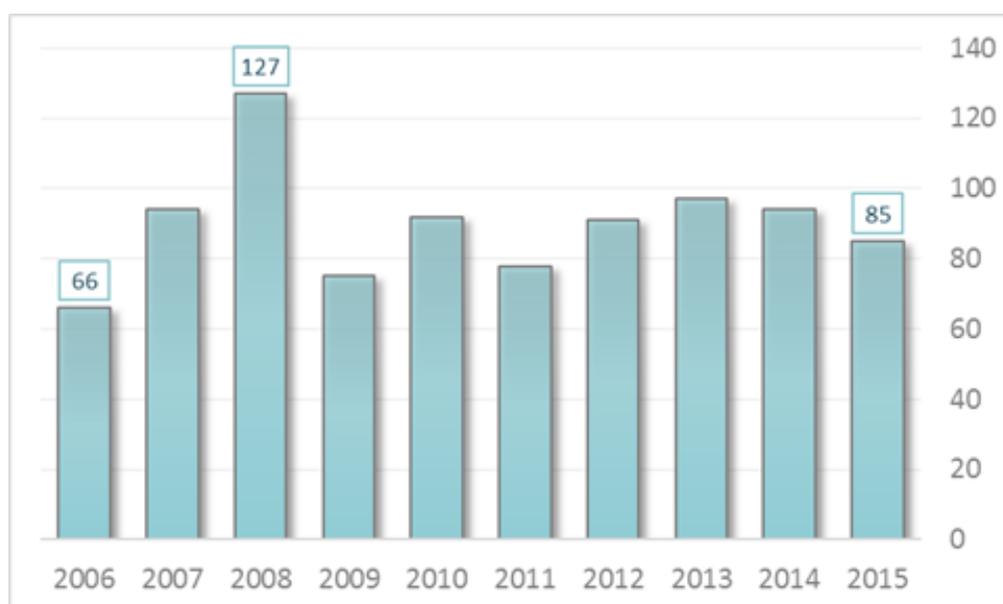
## Annex 1: Collaboration of Four Selected U.S. Universities with Israeli Universities

This annex presents data on the collaboration of four U.S. universities with Israeli universities as an example of U.S.-Israel collaboration:

### ▶ University of California Los Angeles (UCLA)

The number of UCLA-Israel Joint publication rose dramatically over the years 2006-2008 and declined in 2009. The number of joint publications remained relatively steady since 2010, with an average of 89 joint publications over the years 2010-2015 as can be seen in Figure 11:

Figure 11: Number of joint UCLA-Israel publications, 2006-2015



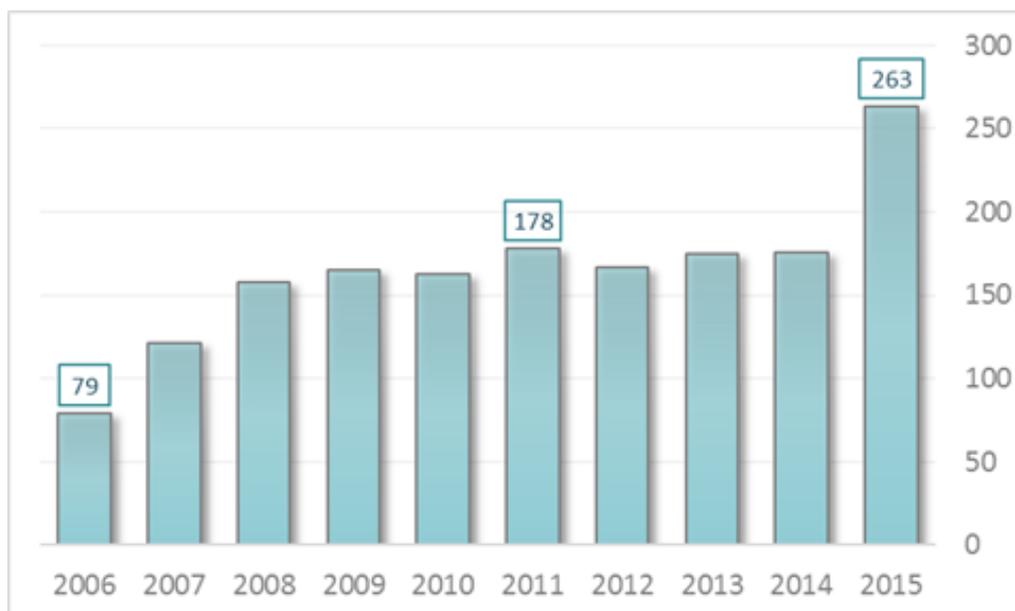
Joint UCLA-Israel publications are publications in which at least one collaborating researcher is affiliated with UCLA and at least one collaborating researcher is affiliated with an Israeli institute at the time of publication

The data might not include all institutes affiliated with the university.

## ▷ Stanford University

The number of Stanford University-Israel joint publications has increased from 79 in 2006 to 176 in 2014. From 2008-2014 the number of annual joint publications was relatively constant, with an average of 169 joint Stanford-Israel publications per year. In 2015 the number of joint publications increased to 263, mainly due to an increase in the number of joint publications in the scientific field of Physics and Astronomy.

Figure 12: Number of joint Stanford University-Israel publications, 2006-2015



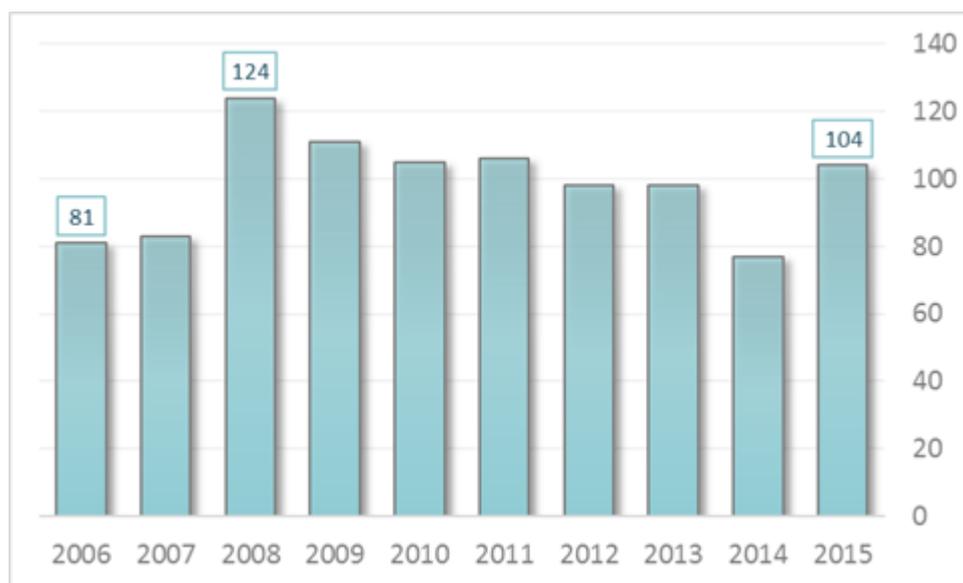
Joint Stanford University-Israel publications are publications in which at least one collaborating researcher is affiliated with Stanford University and at least one collaborating researcher is affiliated with an Israeli institute at the time of publication

The data might not include all institutes affiliated with the university.

## ▷ Princeton University

The Number of Princeton University-Israel joint publication has increased from 81 in 2006 to 104 in 2015, with an average of 99 joint publications per year in that period, as can be seen in Figure 13:

Figure 13: Number of Joint Princeton university-Israel publications by Israeli Universities, 2006-2015



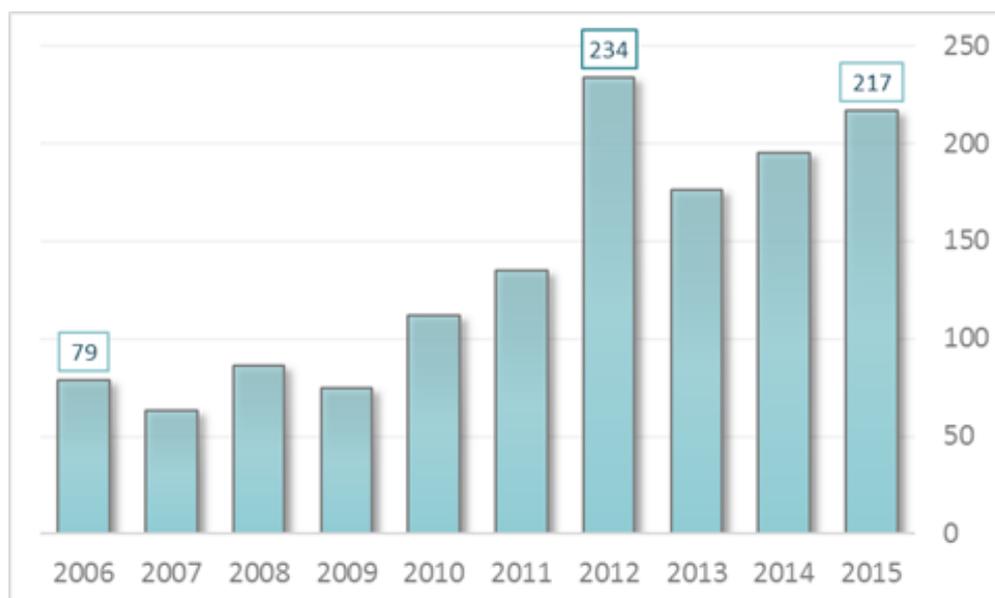
Joint Princeton University-Israel publications are publications in which at least one collaborating researcher is affiliated with Princeton University and at least one collaborating researcher is affiliated with an Israeli institute at the time of publication.

The data might not include all institutes affiliated with the university.

## ▷ New York University (NYU)

The number of Joint NYU-Israel publications steadily increased during the period 2006-2015, with a peak of 234 joint publications in 2012. The five-year average increased from 83 joint publications in 2006-2010 to 191 joint publications in 2011-2015, as can be seen in Figure 14:

Figure 14: Number of Joint New York University-Israel publications by Israeli Universities, 2006-2015



Joint New York University-Israel publications are publications in which at least one collaborating researcher is affiliated with New York University and at least one collaborating researcher is affiliated with an Israeli institute at the time of publication.

The data might not include all institutes affiliated with the university.

## Annex 2: List of Interviewees

From November 2015 to March 2016 we interviewed 16 experts in the subject of student mobility on the changes and trends in U.S. student mobility in the past decade. Some of the interviews were face to face interviews and others were phone interviews (one interviewee sent us a written response). Please see Annex 3 for the questionnaire we used for the interviews.

Table 3 presents the interviewees' details:

Table 3: List of interviewees

Name	Job Title	Institute
Jonathan Kaplan	Vice Provost, Rothberg International School	The Hebrew University of Jerusalem
Dr. Eric Zimmerman	Director of Research and Academic Secretary	Interdisciplinary Center Herzliya
Prof. Arnon Bentur	Former Vice President and Director General; Vice President for Research; Founder and first Head of the Technion International School.	Technion, Israel Institute of Technology.
Hadas Shafir-Shekhter	Marketing Director, Technion International	Technion, Israel Institute of Technology
Gabriela Laufmann	International Students Advisor, The Irwin and Joan Jacobs Graduate School	Technion, Israel Institute of Technology
Yael Cohen	Head of Registration and Admission, The Irwin and Joan Jacobs Graduate School	Technion, Israel Institute of Technology
Prof. Hanan Alexander	Head of University of Haifa International School	Haifa University
Tzameret Zohar	Managing Director, University of Haifa International School	Haifa University

<b>Name</b>	<b>Job Title</b>	<b>Institute</b>
Michal Morgenstern	Director of Study Abroad, University of Haifa International School	Haifa University
Rachel Ben-Eli	Interim Director of International Partnerships, University of Haifa International School	Haifa University
Dr. Stavi Baram	Director of the Office for International Academic Affairs	Ben-Gurion University of the Negev
Prof. Kenneth Waltzer	Director of Jewish Studies	Michigan State University
Yonatan Barkan	Director of Academic Affairs	Masa Israel Journey
Maya Cohen	National Director of Academic Affairs	Embassy of Israel in the United States
Monika Lev -Cohen	CEO at BioAbroad, previously Director of Academic Affairs at Embassy of Israel in the United States	BioAbroad
Dr. Kathleen Sideli (via email)	Associate Vice President for Overseas Study	Indiana University

We also had conversations regarding different aspects of the research subject with following people: Dr. Nir Bomaz, Prof. Zvi Ziegler, Amir Ofek.

### Annex 3: Student Mobility Questionnaire

1. Were there any changes in the worldwide state of foreign students in recent years? What are the changes?
2. Can you describe the main differences in numbers and in general profile of U.S. students attending different student exchange programs in Israel between now and ten years ago? Five years ago? Two years ago?
3. How did the changes in student mobility trends (with emphasis on U.S. students) affect academic institutions in Israel, in terms of:
  - Type of programs (study abroad programs, student exchange programs and transfer credit programs)
  - Nature of programs
  - Number of programs
  - Duration of each program
  - Number of attendees in each program
  - Can you refer to one specific successful program (as a case study) and to the reasons for the program's success?

Please refer also to differences between first, second and third degree.

4. What are the motivations of **U.S. students** to study in Israel, and have they changed over the past decade?
5. What are the motivations of **Israeli students** to study in the U.S. and have they changed over the past decade?
6. What are the main barriers that influence **U.S. student's** choice to come to Israel? Has there been a change in these barriers in the past decade?
7. What are the main barriers that influence **Israeli student's** choice to come to the U.S.? Has there been a change in these barriers in the past decade?
8. How is the marketing and promotion campaign of Israeli academic institutes to American students done?
9. What is the effect of the security situation in Israel on the number of incoming U.S. students?
10. How attractive is Israel to U.S. students and how could Israel increase its attractiveness?
11. Do you think the BDS movement had any influence on U.S. students' choice to come to Israel?
12. What is your opinion on the general state of U.S.-Israel academic collaboration? Are there any other directions of research that are worth following?