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Global STEM Partnerships via Consortium Models for Resilience During a Pandemic

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Background

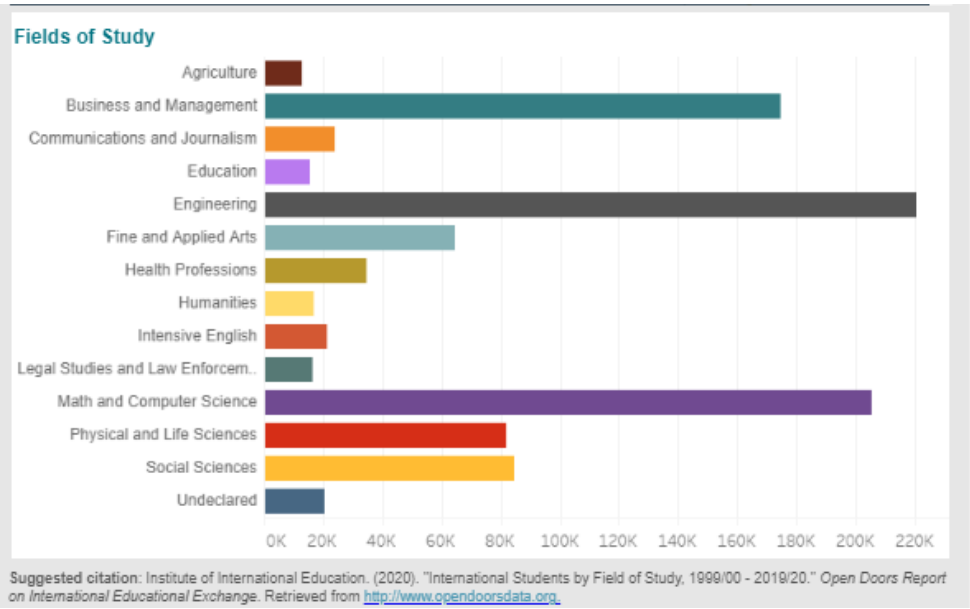
When COVID-19 reached the United States in Spring 2020, the world of international student exchange came to a standstill. Universities pivoted to focus on health and safety protocols to contain the virus, and many institutions shifted to completely virtual instruction and/or a hybrid, for the next year. Meanwhile, the financial stability of institutions also suffered greatly – the impact of Covid-19 led to budget insecurities, and faculty and administrators saw job loss, across the United States. Higher Education institutions, now more than ever, are examining global partnerships and financial models that **do more with less.** An existing annual fee-based consortium partnership model that allows access to 70+ institutions globally has managed to remain fiscally healthy in the wave of the pandemic. It offers an opportunity to re-examine the traditional bilateral partnerships in lieu of a more streamlined consortium model, with benefits beyond student exchange, including an annual meeting of members, networking opportunities, and monthly group discussion on timely topics.

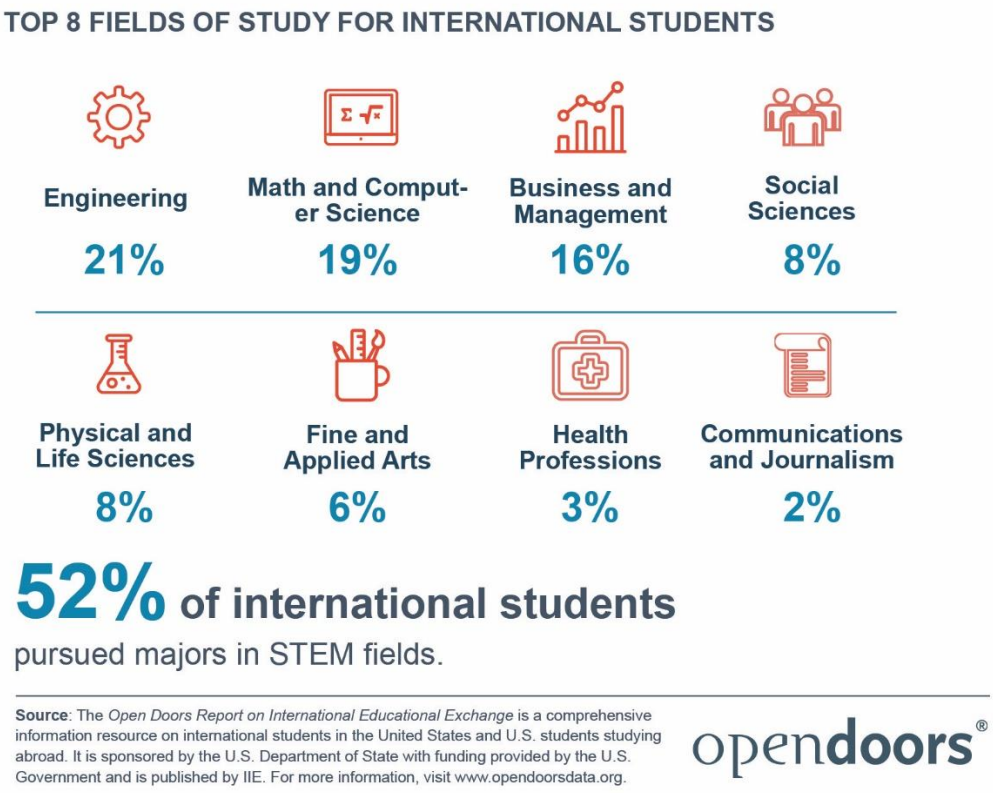
This paper discusses the impact of COVID-19 on study abroad, providing historical pandemic-related global student mobility data, while highlighting one engineering consortium program as an example of an innovative, pandemic-resilient, and cost-effective international engineering partnership model. The paper presents findings from IIE's COVID-19 Impact Survey which examined the effect of COVID-19 on international student mobility, and the measures that U.S. higher education institutions are taking. This paper will present data specific to engineering students, engineering student mobility in the U.S., and how leveraging the consortium model enables institutions to quickly pivot when institutions open their doors to student mobility.

Student Mobility Data

International (non-U.S.) Students

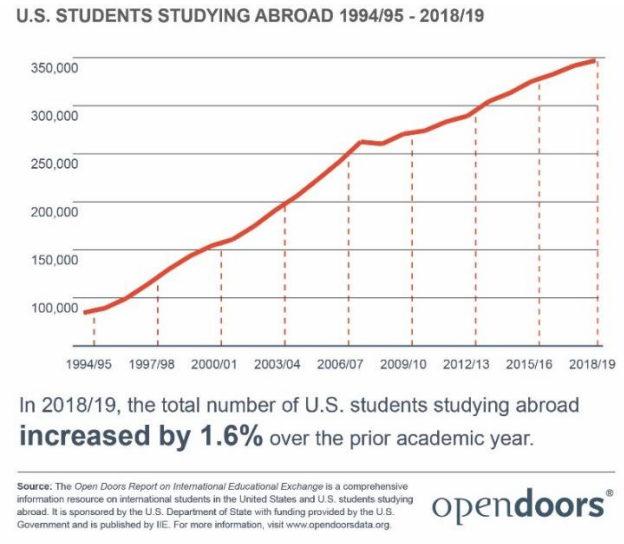
The United States saw an increase of over 80 percent of International Students studying in the United States from 2006 to 2016. Data also shows that student appetite for study abroad in Engineering continues to grow. According to IIE's Open Doors, specific to International Students studying in the U.S., Engineering leads in field of study [1] and 52% of all international students come to the U.S. to study STEM [2].

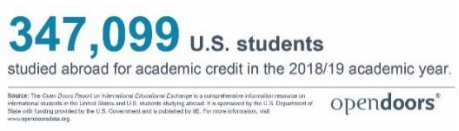




U.S. Students

Study abroad among American students has continued to grow with 347,099 U.S. students studying abroad for academic credit in the 2018/2019 academic year [4]. This represents a one-year growth of 1.6 percent from 2017/2018, or over 5000 additional students. In 2018/2019, 347,099 represents 1.8 percent of all U.S. students enrolled at institutions of higher education in the United States [3].





Consortium-Based Exchange Model

Consortium-based exchange programs can be used for institutions to quickly resume mobility programs as a pandemic subsides. A consortium-based model offers an attractive solution to manage the changing landscape by having a “one stop shop” for the institution and students, instead of managing and keeping track of the situations at each bilateral agreement-based partner.

Consortium Advantages

1. Centralized Administration: streamlined application through which students can simultaneously apply to multiple universities
2. Cost Savings: reduces cost of managing multiple MOUs, unlimited number of student exchanges with one annual consortium membership fee, using tuition swap
3. Provides more options for students to study in countries or fields which existing bilateral agreements may not accommodate
4. Exchange of a flexible number of students with a wide range of partner institutions who provide personalized guidance and support to exchange participants
5. Incoming/outgoing balance achieved over several partners and years
6. Increased visibility for engineering programs among the partner institutions
7. Increased recognition of study abroad opportunities for students on campus
8. Participation in annual consortium meetings to network with partner schools
9. Share and learn best practices from member schools
10. Board that qualifies and votes on admission and mentoring of academic partners
11. Share course equivalencies with other academic partners

Consortium Disadvantages

1. Consortium annual membership fee, to cover centralized administration costs
2. Placement offers determined by consortium administrative staff, taking into account student/home institution preferences. Host campus retains final right of decision whether to accept or decline the student.
3. Limited scholarship opportunities

4. Limited number of slots at high-demand host institutions

Bilateral Advantages

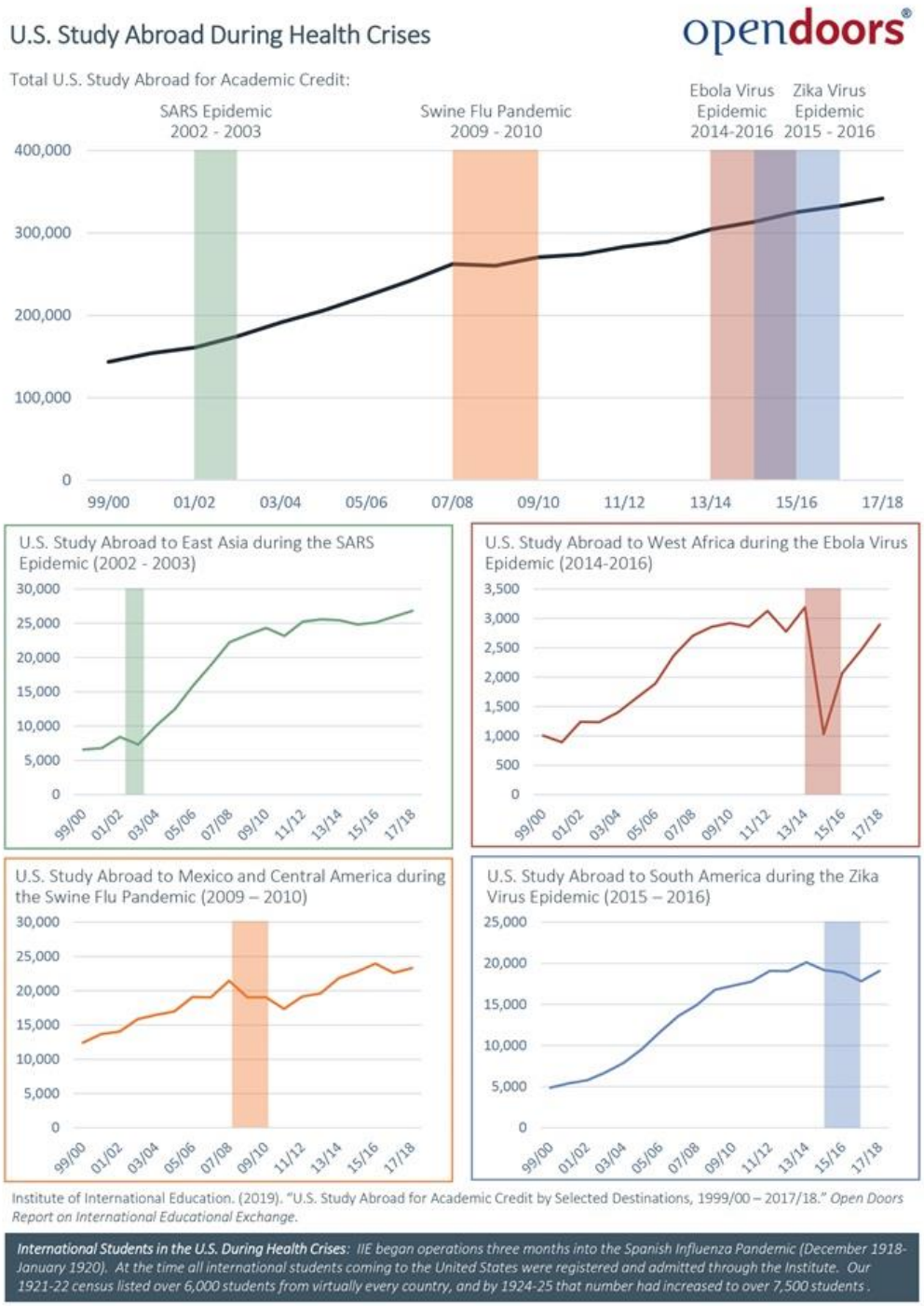
1. Part of a broader relationship with a partner institution: *i.e.*, faculty exchange, joint research, resulting in potential for additional recognition and funding by home campus administration
2. Faculty vet their partners, allowing them to focus the exchange on institutions with which they have ongoing research partnerships
3. Tailored programs based on student and faculty interests
4. More administrative control
5. Course-equivalency and credit-transfer information worked out and specified in detail, often in advance
6. No consortium fee

Bilateral Disadvantages

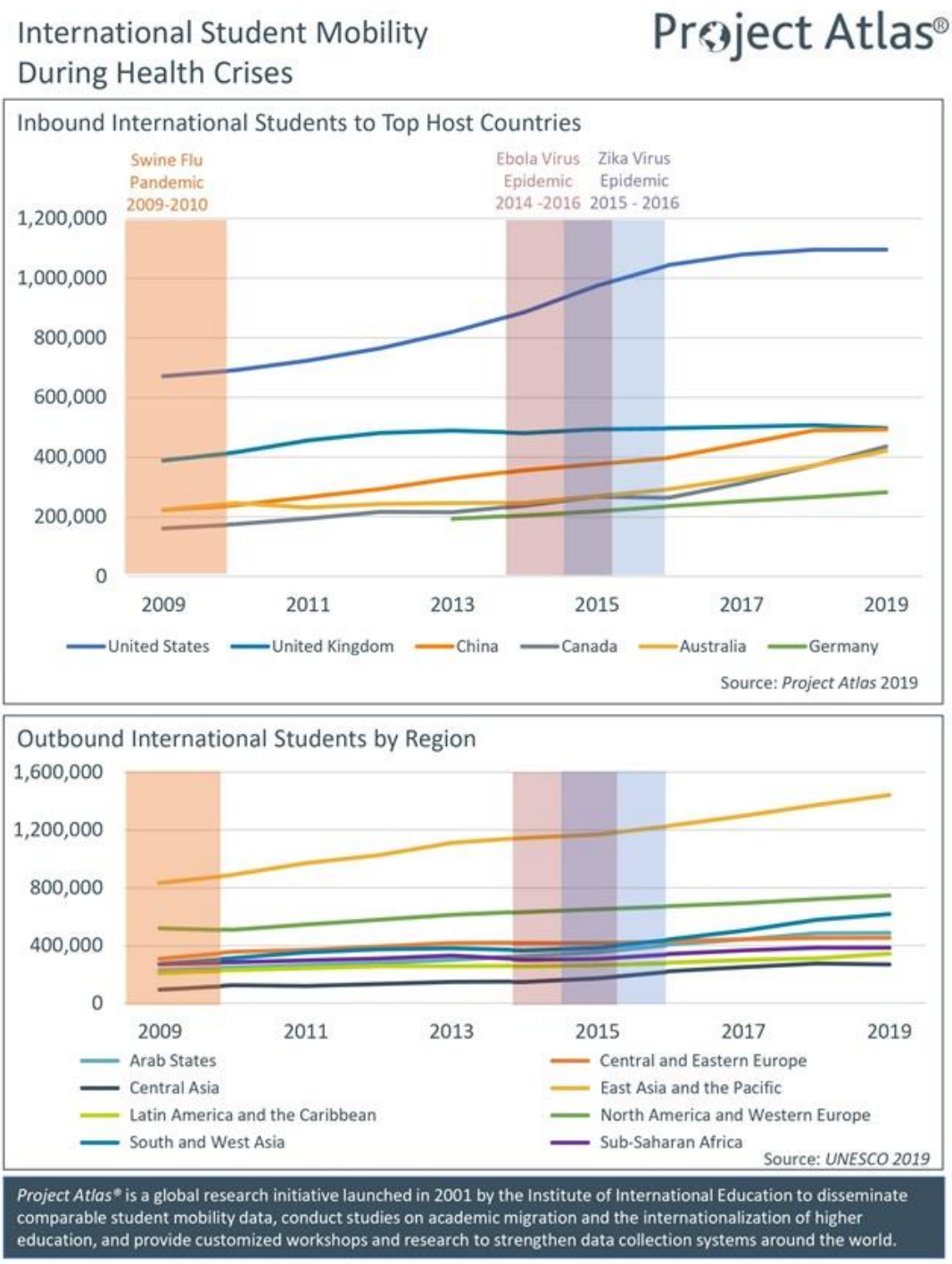
1. Signing separate MOUs with many institutions, not all of which remain active
2. Maintaining relationships with partners, particularly tough as through staff and leadership changes at both institutions
3. Administrative costs of managing exchanges
4. Fewer placement options for students
5. Restrictive in range of courses offered to students
6. Challenge of maintaining a 1:1 ratio of incoming and outgoing students with each partner, even over time

Global Student Mobility Post-Pandemic

The IIE Open Doors report provides data that can be used to predict student mobility after the COVID-19 pandemic subsides. Open Doors is a comprehensive information resource on international students and scholars studying or teaching at higher education institutions in the United States and U.S. students studying abroad for academic credit at their home colleges or universities. Previous pandemic data in Open Doors demonstrates that global student mobility has been quite resilient, and not only recovers to pre-pandemic levels shortly after the pandemic ends but has a positive trajectory in subsequent years [5]. For example, during the 2014 – 2016 Ebola Virus pandemic, U.S. study abroad to West Africa went from over 3,000 Americans abroad (prior to 2014) to roughly 1,000 students during the crisis, and then back up to 3,000 Americans abroad in 2017-2018. Similar to this, during the 2009 - 2010 Swine Flu Pandemic, U,S, study abroad to Mexico and Central America went from over 20,000 students abroad (prior to 2009), to roughly 17,000 in 2009-2012, to close to 25,000 in 2015/16. And while, COVID-19 is unprecedented, there are some past trends that can contribute to our thinking about recovery and provide hope for the future of student mobility.

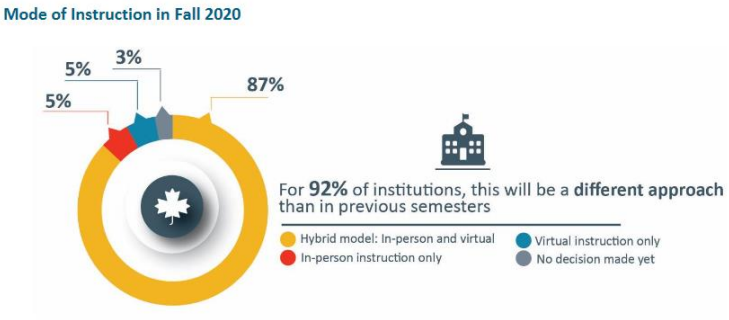


International comparative student mobility paints a similar picture. According to the IIE Project Atlas report, Top Host Countries throughout the world show that globally, student study abroad continues to rise after each major health crisis [6]. Inbound international students to top host countries such as China, have overall, continued to rise from 2009 – 2019, as well as similarly for other top host countries including the United Kingdom, Australia, Germany, and the United States. Despite pandemics, outbound international students have also steadily increased – most remarkably from the Central and Eastern European region from just over 800,000 during the Swine Flu Pandemic in 2009/10 to well over one million in 2015-2016.



The IIE has studied US institutions to gauge how their response to the COVID-19 pandemic. Results from IIE's *2021 COVID-19 Effects on U.S. Higher Education Campus* survey of 520 institutions show institutions continue to prioritize and are actively planning for resumption of study abroad and partnership activities [8]. Of these 520 participating institutions, 94 percent

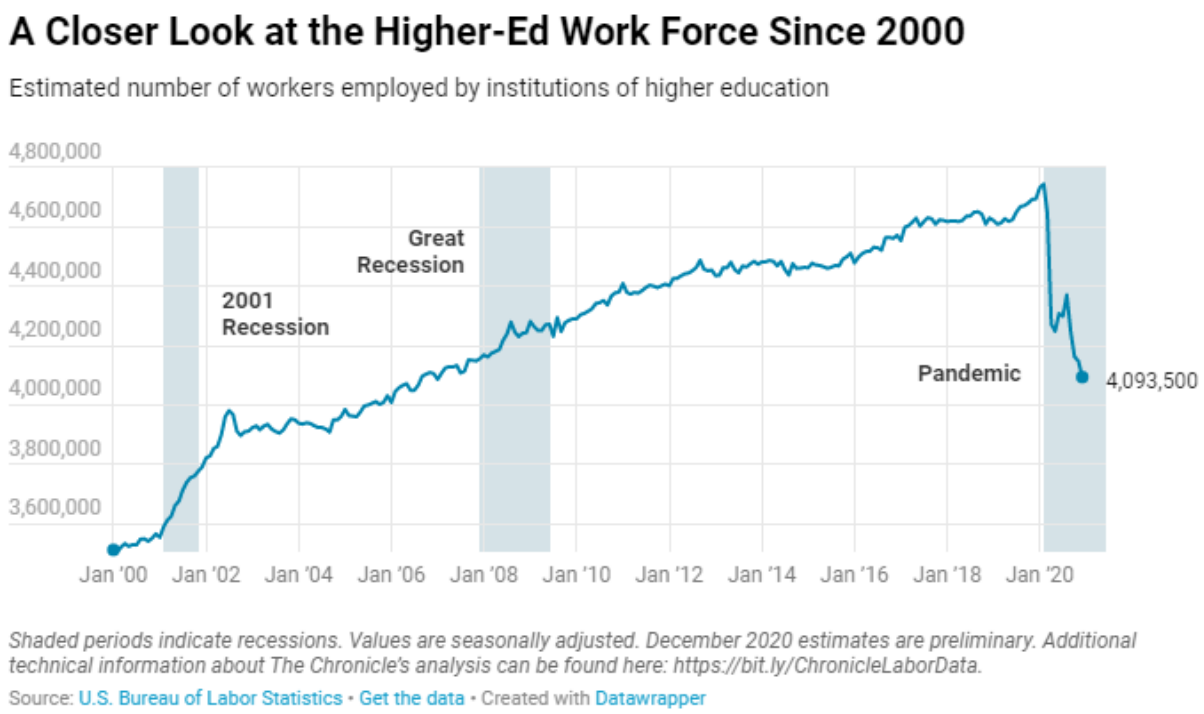
responded to IIE's 2018/2019 *Open Doors Report on International Educational Exchange*. IIE's COVID-19 survey of 550 U.S. higher education institutions showed us how universities and colleges planned to provide courses this past Fall 2020. Ninety-two (92) percent of the respondents noted that the mode of instruction in Fall 2020 was to be different than in previous semesters – with 87 percent providing a hybrid model of both in-person and virtual instruction [8]. In 2019, these 520 institutions combined hosted over 550,000 international students – indicating that these institutions are quite active in international student mobility.



The findings and report [8] found that: (i) the pandemic has offered both new opportunities and challenges in mode of instruction and service delivery; (ii) safety and security are being prioritized when planning for fall; (iii) Fall 2020 international student enrollment will be tied to the flexibility of options offered at institutions – we do know that 40,000 international students remained in the U.S. for summer 2020 courses; and (iv) institutions are planning for the future and prioritizing promotion of programs once it is safe to travel. Flexibility remains critical both for incoming, outgoing and overall global institutional partnership and mobility.

Current Financial Reality

US institutions have been considerably impacted by COVID-19 in many ways, including significant financial stress. According to a recent article in The Chronicle of Education, U.S. institutions lost a total of 650,000 jobs since February 2020 [7]. This is equal to a loss of more than 13 percent of the Higher Education work force.



Financial Models of International Programs

Many U.S. institutions use fee-based models to support international programs and staffing no matter where such programs are housed (*i.e.*, at the central university level or at the college or department level). At many institutions, bilateral exchange agreements between institutions are used as a primary means of mobility, and each of these partnerships must be continuously nurtured and managed.

As the COVID-19 pandemic evolves and conditions change geographically and politically, all higher education institutions will have different responses, scheduling, etc., and the institutions' staff will need to manage the fluid situations. Students will also need to keep abreast of the situation of their intended placement school and have back-up plans.

Using the Consortium Model during and after the Pandemic

One consortium model focused on engineering, the Global Engineering Education Exchange (Global E3) which is administered by the IIE, has proven to be effective and resilient during the pandemic. (See www.globale3.org.) The Global E3 program consists of approximately 70 institutions worldwide, with roughly half of the members in the US. The core activity of the Global E3 is student exchange, and with three student mobility paths: US to International, International to US, and International to International. (In this context "International" means a non-US institution.) Hundreds of engineering students are exchanged each year through the consortium through one portal.

Additionally, since the Global E3 is focused in Engineering, consortium members can readily share best practices, have small-group thematic discussions with membership, and share details

about courses and curricular impacts as they evolve. Further, through membership engagement, the Global E3 facilitates member-to-member initiatives, such as team-taught courses, guest lectures, and research opportunities for students. And, importantly, the Global E3 centrally manages the placement process among all members worldwide to minimize burdens on individual members keeping track of openings, closures, schedule changes, etc.

Global E3 is a membership organization and not a fee-per-student organization. Therefore, the consortium is as strong as its membership and not reliant on the number of actual exchanges or fees based upon the number of exchanged students, nor is it reliant on conferences to generate revenue to support the organization. As a result, during the pandemic, the consortium remained strong and could continue to offer its members engagement and service without cutbacks due to funding or other issues created by the suspension of in-person exchanges.

In fact, through a single IIE portal, the Global E3 was able to consolidate the opening/closing information for the entirety of our membership, and members did not have to engage with each partner as would be required for multiple bilateral relationships. Said another way, the Global E3 program provided single management of the equivalent of about 40 bilateral agreements for each US-based institution. For our International Institutions, the number of effective bilateral agreements approached almost 70 for many of those institutions. (Students cannot exchange with other institutions in the same country.) Given the multitude of changing situations around the world, this was highly beneficial for the Global E3 members.

During the COVID-19 pandemic, the consortium engaged members in a variety of ways, including information sharing with monthly newsletters, strategic planning taskforces, and webinar engagement series. The paradigm shift for virtual meetings during COVID-19 actually facilitated the work and engagement of our members, with significant attendance – often 1/3 of our membership at any given meeting – in spite of time zone differences.

Since the Global E3 is a membership-driven organization, many of our member representatives have developed personal relationships with their counterparts at institutions worldwide. The virtual meetings have given a venue for folks to interact and reconnect, as well as have someone to reach out to if they need advice or ideas. The power of interpersonal relationships has proven to be very important to weather the pandemic storm, and the consortium model of the right size has proven invaluable to facilitate this. Since all the MOUs are in place, the Global E3 will be able to resume student placement very quickly as the pandemic subsides.

The Global E3 application cycle is open twice per year, in April and October, and the IIE manages the applications and placements via a single “one-stop-shop” portal. Student applications are significantly increased for the Fall/Winter 2021 cycle, with many students who had deferred their study abroad are already in the queue for the next open cycle, in addition to those who are ready to go for the first time. Since students indicate preferences for placement, and not just one school, the Global E3 consortium model will enable ease of placement of these students at schools that have opened up even if others have not resumed normal operations.

Conclusion

Over a year later, as the Spring 2021 semester ends in the United States, we are all looking toward the future with the confidence that study abroad will grow stronger based on previous trends related to health crises. That being said, we know that institutions have suffered significant loss in workforce and it is more important than ever to identify cost-saving models that still allow our students to have an international experience once it is safe to do so.

The IIE Open Doors reports have indicated a quick rebound of student international mobility in each previous case of global pandemic. The COVID-19 pandemic is anticipated to be no different. Since so many mobility programs are fee-based, serious cutbacks have occurred across the board, including at higher-education institutions themselves as well as providers. Institutions that send students via bilateral agreements needed to maintain and track each of their partners throughout the pandemic and will spend significant effort to track their partners' situations.

A consortium model, particularly one that is not per-student fee-based, offers considerable advantages during a pandemic situation, by having financial stability during the downturn and engagement in multitude of members via a single organization. The IIE Global E3 program is one example of a consortium that has thrived during the pandemic, and is poised to enable large numbers of engineering exchange students to be placed immediately as institutions and countries open their doors for international students.

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