UNIVERSITÄT BASEL

VirginiaTech

GLOBAL PERSPECTIVES

Comparative views of the Swiss and US higher education systems with the central theme of access to & within higher education.

GPP Global Perspectives Programme
Preparing Future Academic Leaders

2012

UNI BASEL

GLOBAL PERSPECTIVES

2012

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INTRODUCTION

Global Perspectives Programme

A US-Swiss Programme for future academic leaders

A partnership between Virginia Tech in the US and the University of Basel in Switzerland, the Global Perspectives Programme (GPP) is aimed at preparing future academic leaders for the challenges of an increasingly diverse and globally focused higher education (HE) sector. Through exchange and first hand experience, GPP offers doctoral and post doctoral students the opportunity for reflective comparison of the two countries' HE sectors and the chance for individuals to develop global competencies and inter-cultural communications skills.

Global Perspectives Manual

Themes 2012: Access To and Within Higher Education

Contributions in the form of written reports from both Swiss and US participants have been brought together in this Global Perspectives manual. The publication is a useful resource for those wishing to explore differences and commonalities in academic organisations and practices in these two countries. In 2012, the central theme of GPP was *Access To and Within Higher Education*. The topic proved broad and the issues explored ranged from diversity, equity, knowledge dissemination, academic careers to teaching for tomorrow's learners. Participants could elect to report on this theme or select another topic that was of interest to them.

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FOREWORD

Erich Thaler

Head Global Affairs,
University of Basel

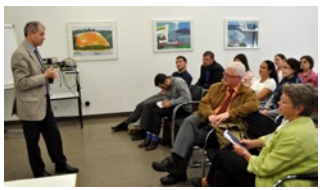
The request for equal access to higher education is not an invention of our times. Stephanie Leinhardt, one of the contributors to this present manual, makes reference to a conference that was held in 1966 and was asking for access on the basis of capacity and requesting the progressive introduction of free education. Other authors investigate the shift from paper-based traditional learning environments to digital classrooms and the global impact of such change. Additional contributors focus on the complex issues of First Year Experience and the solid basis a university can create in terms of integration and overall success of study when first-year students are literally taken by the hand when arriving in higher education.

Once again, I invite friends of the Global Perspectives Programme (GPP) and other readers to delve into articles that reflect the experiences of a whole GPP year – from the Input Seminar in spring to the Alumni Meeting in December. They tell about doctoral students in the US and Switzerland that not only are following their disciplinary learning and research curriculum but who are eager to engage in today's discussion about higher education and its changing global landscape. By doing that, these young academicians not only contribute to a multifaceted and multidisciplinary academic discussion but, by looking beyond borders and thinking out of the box, reaffirm their appetites for leadership already assumed within academia or which they are about to take up.

GPP AT THE UNIVERSITY OF BASEL

Presentation from GPP alumnus, Cédric Scheidegger Lämmle at the March Input Seminar

Rector Loprieno addressing the Virginia Tech students during their visit to the University of Basel



Group work session at the Joint Seminar in Riva San Vitale

At Northeastern University, one of the institutions visited while in the US

The programme incorporates five components; an input seminar on the HE systems of Switzerland and the US, the hosting of the Virginia Tech delegation in Basel, a joint seminar in Riva San Vitale, Ticino, visits to HE institutions in the US and a conference held at the Swiss Embassy in Washington at the programme's close.

While in the US it is a goal of the programme to visit a broad range of HE institution types. US HE institutions visited by Swiss participants in 2012 included: Northeastern University, MIT, Tufts University, University of Virgina, New River Community College and our programme partners, Virginia Tech.

As a mixed-disciplinary programme, GPP enables a vibrant inter-faculty dialogue. In 2012, programme participants represented the Department of Biomedicine, the Faculty of Law, the Faculty Philosophy and History, the Department of Ancient Studies and the Department of Mathematics and Computer Science.

Further details can be found on the **Global Affairs website: www.globalaffairs.unibas.ch/gpp**

GPP AT VIRGINIA TECH

Addressed by university president Professor Alain Beretz at the *Collège des écoles doctorales* at the University of Strasbourg, France

Signing the GPP declaration at the joint seminar, Center for European Studies and Architecture (CESA), Riva San Vitale, Switzerland

President Steger accepts a copy of the Global Perspectives manual, President's residence, Virginia Tech

Global Perspectives conference, Embassy of Switzerland, Washington

The Virginia Tech Future Professoriate Global Perspectives Program was developed to provide VT graduate students with an opportunity to gain knowledge and understanding of global higher education, especially in Europe. In order to be selected to participate in the summer program, graduate students must have completed two courses taught through the Graduate School: GRAD 5104 Preparing the Future Professoriate and GRAD 5114 Contemporary Pedagogy. After selection for the highly competitive program, participants meet monthly during the spring semester to increase their understanding of higher education in Europe, the Bologna Process, and global graduate education and research with a focus on Switzerland, France and Italy.

The 2012 global experience included visits to selected universities in Switzerland, France and Italy. In addition to these visits, the trip included daily seminars, cultural visits in the region, and a joint seminar with UniBasel participants at VT's facility in Riva San Vitale,Ticino. The experience concluded with the Global Perspectives conference held at the Swiss Embassy in Washington DC in June.

Further details can be found on the Virginia Tech Graduate School website: http://graduateschool.vt.edu/graduate_school/gpp/

or follow the Global Perspectives Switzerland blog at: https://blogs.lt.vt.edu/pfpswitzerland/

ACCESS TO AND WITHIN HE

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Access to higher education: applying the land-grant perspective

Amy L. Carrozzino-Lyon
Virginia Tech

The Morrill Act of 1862[1] established land-grant institutions in the United States. President Abraham Lincoln signed this legislation on July 2, 1862 at a formative time in U.S. history, when turmoil within our country often took precedence over many other concerns of a developing nation. Yet in light of the challenges, Justin Smith Morrill, Congressional representative from the State of Vermont, saw a need for providing practical education in the agricultural and industrial fields in addition to a unique extension/outreach component that was unheard of at most other higher education institutions at the time, at least in a formal capacity. According to the text of the Morrill Act and Senator Morrill's comments about the legislation, the purpose was threefold: (1) to recognize and address the dominance of the classics in higher education, (2) develop practical education in an agricultural and industrial society, and (3) provide access to education and profession preparation to those within the industrial classes.[2] Most early higher education institutions in the U.S. focused on classical education and access was limited to those with the means to attend college or university (i.e., the elite classes only). In the then-agrarian U.S. society, there existed a real need for agricultural and mechanical research and demonstrations to improve products, technologies, and practices and make that university-derived knowledge accessible and available to the public.

Land-grant institutions have a three-part mission of research, teaching, and service or engagement. Community engagement, which involves disseminating knowledge and providing services to the community, became the characteristic that set land-grants apart from other traditional institutions of higher education. Access to knowledge inside the university was important, but so was sharing research results with the community and engaging them in the process of conducting practical research. While land-grant engagement had its

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foundation in agricultural and mechanical research and demonstrations, the content and issues relevant to society have undoubtedly changed over the last 150 years. These areas are still an important component of extension today; however, topic areas have broadened over time beyond agriculture and mechanics to meet the changing needs of community members.

Many universities we visited in Switzerland, Italy, and France interacted with the community through a variety of science days, research evenings, public lectures, events with high school students to help them explore opportunities in higher education, and the incorporation of public participants in studies that impact their lives. At the Universität Zürich, we heard about how community members are the students and constituents of universities since they often attend university in their local community. Alternatively, many students in the U.S. attend university in a different community, or even in a different state, creating more of a visiting population rather than serving community members primarily. At the Universität Basel Institüt fur Sport and Sportwissenshaften, we heard about how many recreational facilities are open to the public and students (in comparison, similar facilities at many U.S. universities are reserved for student athletes). Several programs we visited also mentioned the importance of maintaining relations with politicians to initiate social change through policy and legislation. We often heard of social responsibility at higher education institutions in Europe, which is defined as the idea that an organization or individual has an obligation to act to benefit society at large.[3] The concept of social responsibility has close ties with community engagement at U.S. land-grant universities.

Another characteristic of land-grant institutions involves collaborating with other agencies, universities, and industry partners to answer practical research questions. Interestingly enough, we learned at Universität Basel that "CH," commonly used to represent Switzerland in a variety of contexts, stands for a Latin phrase *confoederatio helvetica*, which means, "working together." This motto embodies the cultural sense of collaboration that extends well beyond higher education. During our visit, we heard about the European Confederation of Upper Rhine Universities (EUCOR), founded by Université de Strasbourg in 1989 and includes Universität Basel (Switzerland), Universität Freiburg (Germany), Universität Karlsruhe (Germany), and Université de Mulhouse-Colmar (France). This collaboration focuses on preserving the regional culture of the Upper Rhine Region and strengthening connectivity and networking trans-nationally. As part of the collaboration, students are able to participate in courses at partner universities to broaden and enhance their educational experience without additional fees. Strong collaborative relationships within EUCOR made possible our visit to Université de Strasbourg for the first time during the Global Perspectives Program in 2012.

Partnerships among universities appear to be very common in both Europe and the U.S. In Europe, a sense of equality among universities existed rather than the competitive nature of higher education often observed in the U.S. Alain Beretz, President of Université de Strasbourg, described this collaborative relationship among universities as an "ecosystem" that functions as a singular unit rather than individual institutions. As a student of environmental sciences, this analogy certainly resonates with me; an ecosystem functions as a singular unit that is stronger than each of its parts, but relies on every part of the system to retain functionality and health of the ecosystem. During our visit, many institutions mentioned joint or interdisciplinary academic programs among universities, collaborative research efforts, and relationships that foster

exchanges of students and information. The notion of working together rather than competing against each other was clearly apparent during our visits; this approach serves to enhance the knowledge and resources of universities, countries, and society collectively.

Land-grant institutions were established in the U.S. to facilitate applied research that benefits society and answers important and relevant research questions. This applied research orientation was readily apparent at the European institutions that hosted our group. Every research program we visited mentioned industry or government partners and product-based research. This orientation was particularly clear at Scuola universitaria professionale della Svizzera italiana (SUPSI), and plays a strong role in the mission of universities of applied sciences and arts in the Swiss system. SUPSI also offers consulting services directly to companies, public institutions and organizations. Spin-off companies were common as a result of research programs, and university programs existed that were designed to help researchers with this endeavor. For example, the Technology Transfer Office at Politecnico di Milano[4] provided aid to spin-off companies for several years during start-up. Applied research was very common and highly encouraged and valued at the institutions we visited.

The higher education institutions we visited in Switzerland, Italy, and France during the Global Perspectives Program 2012 shared many characteristics with land-grant institutions of the U.S., even if those similarities were subtle at times. European institutions focused on research, teaching, and service, but more so from the perspective of social responsibility rather than the "engagement" perspective adopted by the U.S. land-grants. Extension can and does occur in different forms depending on audience, cultures, and temporal needs. Many institutions that we visited maintained relationships with varied partners and collaborators, and interacted with the community through research involvement and/or outreach efforts. Applied research to benefit society was prevalent at European institutions of higher education, and has a clear relationship with the practical education strongly emphasized at U.S. land-grants. However, many institutions we visited had more focused academic areas of study as compared to most U.S. land-grant universities. For example, Politecnico di Milano focuses solely on the fields of architecture, design, and engineering, whereas Virginia Tech offers programs in those areas, plus a wide variety of humanities and the sciences (e.g., perhaps comparable to areas pursued at both Universität Zurich [humanities focus] and ETH Zurich [science and technology focus]).

In 2012, we are celebrating the 150th anniversary of the establishment of land-grant universities in the U.S. This sesquicentennial milestone has encouraged us look back to the historical context surrounding the role of land-grants and recognize the continued need for community engagement and open access for all students. Land-grants were established in part to provide education to the masses, not just to the elite. This perspective has parallels with the European system today; Rector Loprieno[5] described a similar concept of "entitlement"- that all students completing a matura (somewhat similar to a high school diploma in the U.S.) have relatively open access to higher education. Alternatively, U.S. students must apply for the opportunity for higher education, and even so, may not have the opportunity to enter their desired field at their desired institution. Financial and socio-economic constraints along with the ever-rising cost of higher education also prevent access to higher education for a growing number of students in the U.S. These constraints challenge land-grant institutions to remain accessible to the masses and

continue with outreach efforts in a difficult economic climate.

The land-grant perspective provides a framework for scholarship, learning, and engagement; however, institutions of higher education around the world continue to face diverse challenges associated with diverse responsibilities. Land-grants in the U.S. and many institutions of higher education abroad work to maintain well-funded and respected research programs, educate the ever-changing learners of today, and involve the public in producing and disseminating knowledge, among other responsibilities. Providing access to and within higher education continues to be a challenge for institutions, an important topic for continued discussion in academe, and an opportunity for constructive collaboration with our colleagues on a global front.

NOTES

1. The Morrill Act was passed by the 37th Congress of the U.S. on July 2, 1862: http://www.ourdocuments.gov/doc.php?flash=true&doc=33

2. National Association of State Universities and Land-Grant Colleges. 2008. The Land-Grant Tradition. 27 pp. Available online at: http://www.aplu.org/document.doc?id=780

3. Wikipedia, "social responsibility": http://en.wikipedia.org/wiki/Social_responsibility

4. The Technology Transfer Office at Politecnico di Milano aids researchers in linking their university research with commercial enterprises: http://www.english.polimi.it/scientific-research/

5. Rector Prof. Dr. Antonio Loprieno is Rector and Full Professor of Egyptology at Universität Basel: http://www.unibas.ch/index.cfm?uuid=628FBA0DBBA6E09A35ACD2D934EAB201&o_lang_id=2

Regarding Service and a More Global Access

Sean Conaway
Virginia Tech

At the Swiss Embassy, we proposed several initiatives that we felt would improve access to and within higher education. We were charged with reinventing the academy, and in many ways, we did. Offering up a range of proposals including a free-to-all database containing all the research and inventions generated within higher education, open-access, web-transmitted courses, among other ideas all geared towards creating a learning environment where education isn't valued by price tags so much as by how many people are benefitted. After our presentations, we were applauded for our efforts and ideas, and then asked a series of questions, each one circling closer to the big question: who's going to pay for all this?

In fact, the closing question posited was closer to this: how will you convince the public that higher education benefits the populace at large instead of merely improving the future spending power of the degree-holding student? A tough question, and one that pointed to a very large omission from our foci: we travelling students of Global Perspectives had focused on teaching and research, and didn't even bother to pay lip-service to the third other transatlantic mission of higher education, service. I believe the omission of Service in our presentation is telling of larger, more systematic trends in higher education, one fueled by the rat race to secure outside funding to maintain labs and technicians, by large undergraduate student bodies to subsidize graduate research, and, finally, a not-so-outdated perception of higher education as an ivory tower untouchable by the masses. Perhaps the most important endeavor higher education, on a global scale, should undertake is figuring out how to most directly benefit the populace and the calamities (health and nutrition, environment and energy) it faces. If the public receives tangible benefits directly from university innovations, they'll more readily embrace footing a larger portion of the bill. Yet, for the public to receive those

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tangible benefits (in the forms of, say, medicines, more sustainable and nutritious food systems, and energy-efficient products), the university needs to pay attention to their licensing structures, streamlining and economizing the innovation-to-production-to-distribution models so that the public wins, not private enterprise (although, I hope I'll be able to argue, this isn't the end of enterprise, simply a new definition of wealth…).

This leads to a discussion of global licensing, a framework being implemented in many universities in the U.S. and Canada, and with movements catching on in parts of Europe, as well. I'm not arguing that the system is perfect, or foolproof, or that it's produced many tangible benefits, but global licensing of university patents and licenses *can* pave the way for innovations created in the university to (more) directly benefit the populace at large. Below I'll quickly relay how global licensing works, using medicine as an example, although the framework is certainly applicable for other public-benefitting innovations, such as water purification and energy production.

By accepting a Global Licensing Framework, as put forth by UAEM (United Allies of Essential Medicine), a university provides access to innovations in public health, as well as ensuring access to final products such as pills and vaccines. Intellectual property rights cannot act as a barrier to further research (be it in the university setting or elsewhere). That is, global access is maintained and further research encouraged. To put these goals to use and into the hands of populations who need them, either generic production of products is legally allowed, or, in the event a particular community is unable to produce the products themselves, the products are provided at-cost. Licensing language includes further innovations on the products, so that communities who need it receive the latest and most effective products. With this in mind, universities need to be completely transparent in their global licensing for *all* relevant innovations.

If we can agree that research universities exist to teach, research, and serve, then we must continually ask, whom are they meant to serve—their local communities, regions, nations, the world? Practically speaking, the answer to this question comes down to: where's the money coming from? Of course, all research universities require outside funding for research. Government money is a large source of income, and the move toward open access of research funded by government should be a cut-and-dry decision: if the populace foots the bill, then the populace reaps the benefits. Many of the European institutions we visited already have much of this in place, and all research being conducted is available to peruse directly from the university homepages. The US, unfortunately, is far behind the curve on this, although that too is changing. This summer, a petition for this open access made its way around the country, and supposing Obama remains in office, a bill should be put before Congress addressing this very thing.

Of course, it isn't only federal money getting pumped into universities—private funding is just as, if not more, important—and access to a patent isn't the same as being able to produce, disseminate, and utilize the patented products. For that we need the private sector, and for the private sector we need profits, and for that we need global licensing frameworks that allow companies to use a patent for profit in communities that can afford to pay a premium, while underprivileged communities can produce it themselves or have it provided at cost.

I'm not suggesting this is a simple solution, or even elegant, and as I said before, there have yet to be any roaring success stories. Although, the

University of British Columbia, global licensing's flagship institution, has made several patents globally accessible and these are in production. Global licensing, and the principles behind it, *is* a definite step in the right direction. The more inventions that fall under global licensing principles, the more practice the universities will gain in licensing their patents under the new principles; the more companies and organizations that become involved in development, production, and distribution, the more fluid the entire process will become. More effective models will be found and improved upon, and hopefully the public in need of these innovations will begin to experience the benefits of university innovation more directly. If higher education is able to point to tangible services, physical outcomes directly bettering their lives, the populace will more readily allow the "re-invented" university we proposed at the Swiss Embassy. Perhaps, then, international databases and streaming web-classes wouldn't be *only* laudable, but attainable.

Diversity in Higher Education: New Frontiers

Mintewab Gebre Woldesenbet
University of Basel

Introduction

The need for diversity in higher education has long been recognized by policy makers and higher education (HE) institutions in most parts of the world. The approaches taken and the types of diversity sought vary in different places. Countries with a relatively more diverse population, such as the United States, pursue diversity on several bases, race being one among them; whereas countries with a relatively more homogenous population focus on fewer bases.

This essay tries to draw attention to the different bases on which diversity is pursued in different systems and the limitations to these traditional bases. It also forwards further ground for diversity promotion. The make-up of a country's population does not remain constant over time. Immigration, emigration, trans-national adoptions, war, etc. are all factors that may contribute to the changing of a country's demographics. The consequent evolution of the structure and make up of societies needs to be recognized in the making of diversity promoting policies.

Purposes of Diversity

Promoting diversity in higher education institutions serves various purposes. The primary and most essential of these goals is that of providing equal opportunity for everyone with a special focus on those that were historically denied these opportunities and in some cases continue to face various prejudices that hinder them from attaining higher education.

Addressing historical injustices has been done in various ways including the offer of affirmative action for persons with disadvantaged backgrounds. The support given to individuals from disadvantaged groups may constitute a special consideration of that factor in admissions decisions; or in some cases, a provision of continued support throughout their stay at a HE

institution.

Promotion of diversity does not necessarily need to be linked to disadvantaged groups. An ultimate goal for the promotion of diversity in HE is to make sure that every member of a society gets equal opportunity to an essential socio-economic good, higher education. Therefore, efforts towards ensuring that the student body in HE institutions resembles, as much as possible, the general population constitute one form of pursuing equity.

This particular goal of promoting diversity is very important both in terms of social justice and also in terms of economic considerations, as the exclusion of a specific portion of a population from HE means underdevelopment of the concerned country's potentials. It is also a goal that still needs continued effort to achieve as there still exist high rates of discrepancies in the attendance and completion rates of different groups within societies.

Another goal of promoting diversity gets less attention compared to the previous one. An interesting research conducted by a group of researchers in the University of Michigan established, with empirical evidence, that diversity augments educational outcomes.[1] In this paper, the authors highlight the benefits of diversity in classrooms and informal interactions among different racial and ethnic groups on learning and democracy outcomes. The theoretical foundation for this finding predates the empirical studies.

HE is more than just for learning a special skill; it is also an institutional framework for the shaping and promotion of late adolescent development. It is also the place where students grow in character and as productive citizens. As such, HE institutions must provide students with an environment where they get confronted with diversity, both as training for the diverse real world and as a training to actively think and make decisions informed by new and more complex perspectives and relationships.[2]

The end game in promoting diversity is not just having a student body that looks different in composition. The promotion of diversity has as a goal the ensuring of equal opportunity. It is ensuring that all members of a society have the same opportunities to attend and complete higher education. It is also to reap the benefits that the consequent diverse student bodies provide, which is the best possible educational environment for students. Diversity efforts in HE institutions are important not only as means of increasing access to higher education for greater numbers of students, but also as a means of fostering student's academic and social growth.

Different Bases of Diversity

HE was for the elite for much of its history, excluding persons on various bases such as race/ethnicity, gender, religion and social class. That has changed since; and is replaced by an active pursuit of diversity in the student bodies of HE institutions. As multiple were the bases for exclusion so are the bases on which diversity is now promoted. HE institutions put positive effort into making sure their student body is as diverse as the general population. The bases on which this is done are loosely categorized as traditional bases and the new for the purposes of this essay.

i. Traditional Bases of Diversity

The traditional bases on which diversity is promoted are a reflection of those on which prejudices and exclusions occurred historically. Race/ethnicity, gender, religion are amongst them. While the practice in the United States covers most of these grounds and more, the same cannot be said about Switzerland. Switzerland has a relatively

more homogenous population compared to the United States. As such, the only basis on which diversity efforts are made is gender.

These traditional bases are linked with mainly addressing historical injustices and the denial of opportunity to certain groups on the above-mentioned bases. Depending on the history of a country, which of these or other bases are relevant to addressing the said disadvantages vary. Switzerland does not have the vast and multi-layered racial history that the US has. It is, therefore, understandable that race is not considered as a basis of diversity in Switzerland.

As pointed out above, diversity also serves the slightly varied goal of addressing currently existing prejudices. This usually overlaps with the historical ones. Here again, the situation in every country and every system varies. The effectiveness of anti-discrimination laws and the level of awareness of a population are but two factors that determine how prevalent prejudices can be and hence, how much of an active policy initiative is needed at HE institutions to counter them.

ii. New Basis of Diversity

Aside from those discussed above, there have also emerged, over recent years, various bases of diversity. These include physical ability/disability, sexual orientation, socio-economic status, etc. It is extremely important that diversity promotion policies and approaches stay current with the evolving shape and structure of society and prejudice patterns.

For instance, Switzerland, like many other European countries, has a growing immigrant community. One of the most important factors that determine a person's likelihood to attend HE is economic capacity. When economic capacity corresponds to categories of society, it is only reasonable to consider a person's background in an economically disadvantaged group. Therefore, it is important that such developments as a growing immigrant community with limited economic capacity get recognized in diversity discussions.

Going forward with Diversity

As discussed above, diversity has various goals and is pursued on various bases. The struggle to making sure that groups previously denied access or were given only limited access to HE are given equal access is an ongoing battle not yet won. And it deserves to be given high priority. However, these efforts do not limit the pursuit of diversity on other bases.

In addition to serving as an instrument of equal opportunity, diversity-promotion in HE also has a desirable effect on learning outcomes. Based on this proven thesis, it can be argued that the more the bases of diversity, the more the educational benefits. Accordingly, the bases on which diversity is pursued can be divorced from historical and/or current disadvantages and prejudices and can be expanded to cover most other bases on which people categorize themselves.[3] These factors could be language (dialects or completely different), regions within a country, etc.

For instance, Switzerland's language based grouping can be a diversity basis that can be considered in its HE institutions. Universities in the different language speaking parts of Switzerland could promote diversity on that basis by putting some effort into attracting students from parts of Switzerland speaking a different language. The primary goal of promoting diversity on this basis is for the learning benefits to students.

It is also important to recognize the effect of promoting diversity on the cultural identity of students. This is a large topic on its own and

cannot possibly be sufficiently addressed in this essay. However, it can be said that it will have an impact on mutual understanding and sensitization to differences.

Conclusions

This essay draws on the well-recognized benefits of diversity in HE and tries to expand on them. Diversity in HE represents not only equal opportunity but also a conducive learning environment for students. It is therefore in recognition of this benefit that expanding the bases of diversity is argued for. This being mostly a reflection, limitations to the argument are recognized. The largely up-hill battle of addressing effects of historical injustices and countering present prejudices through the promotion of diversity should remain a priority in terms of resource allocation and effort. This does not mean that there is no room for ideas that contribute to the development of the quality of HE. After all, the discussion of how to improve HE is not only about solving current problems but also about bettering the good.

NOTES

1. Patricia Gurin, et al., Diversity and Higher Education: Theory and Impact on Educational Outcomes, 72 Harvard Educational Review 330 -366 (2002).

2. Ibid. at 334.

3. Of course, some form of a reasonable and conventional understanding would be necessary.

Choice of University

Tomie Keller
University of Basel

Every student has once to face the question: "Where do I want to study?" During the *Global Perspectives Programme (GPP)* I learned from the participants from Virginia Tech about the crucial time of finishing school and entering university in the United States. In the U.S. the choice of university comes along with a tough and elaborate application procedure, whereas in Switzerland a comparable procedure does not really exist.

In this report the question of the choice of university and related restrictions in the United States and Switzerland will be discussed by comparing the accessibility to universities in these two countries. This report will however reflect only few aspects and issues of this complex matter and primarily focus on experiences made during this year's *Global Perspectives Programme (GPP)*.

United States – Application Procedure

The United States is a country with a large number of higher education institutions and admission to them is increasing in diversity and complexity. The process of leaving high school and applying to colleges and universities requires considerable time, planning and strategies. It involves research, visits of campuses, interviews, deadlines, well thought considerations and choices and final decisions to implement.

"What do you offer?"

Good marks are often not enough when applying for a university. At **Tufts University** we – the GPP participants from University of Basel – were told that even being the best of the school would not be an assurance for a place when applying. Much value is given to further aspects such as social skills like volunteer work, out-of-school education or sporting activity. Many high schools therefore offer mentoring programs to help future university students towards compiling their curricula.

Do you have a "back-up plan"?

During a discussion at the *Global Perspectives Programme (GPP)* the question of choosing one's university came up and one of the GPP participants from Virginia Tech told me the following about U.S. students strategically planning the application procedure: A common approach is to first choose a highly ranked university that will be a challenge to gain admittance to. Second, to choose a "good but realistic" university and finally, to choose at least one university that one can be sure will accept you, the "back-up" university.

In the wave of an increasing trend towards the "academisation" of society, the U.S. student population is growing rapidly. The uncertainty of admission to a college of choice has significantly increased the numbers of applications in consequence, a trend the **University of Virginia** has also observed. According to their information, many students apply to up to 30-40 different colleges and universities, leading both, students and respective universities, to serious problems of dealing with the growing number of applications.

Community College as a "financial bridge" to college or university

An omnipresent issue in the U.S. academic world is high tuition and fees. During our visits to higher education institutions in United States we were often confronted with the impact of high costs restricting the choice for a university. Several possibilities of financial aid, such as grants, loans, deductions or scholarships from either colleges and universities or from the state or private sources are in place. However, the financial aid offered is often not sufficient or the student does not fulfill the requirements to such financial aid entitlement. It became evident that one of the main decision factors for choosing a university in the U.S. lie on the costs and what a university is willing to provide in terms of financial aid.

One possibility to overcome these high costs is to first study at a community college, a far less expensive option than a college or a university. An example would be the **New River Community College** which offers transfer programs designed for students who plan to complete baccalaureate degree program at a college or university.

Switzerland – Open access, free choice?

In Switzerland all universities are open to students holding a valid maturity certificate. Only study programs in medicine and for some universities[1] in sport science, may have entrance examinations depending on the number of applicants for admission in any given year.

"We hide a rather selective system under a veneer of open access."

A special factor of the Swiss education is its dual system. At the age of 15 or 16, roughly two-thirds of students enter a vocational education and training program (apprenticeship). The remaining one-third of Swiss students attend upper-secondary level general education which normally leads to the maturity certificate. In fact only approximately 20% of nineteen years old Swiss students (average age of graduating high school) hold a maturity certificate and are therefore allowed admission to university.[2] Hence, the relevant selection of students for higher education occurs in an earlier point of time compared to the United States.

"Swiss students study where their parents live"

The factors influencing the choice of university in Switzerland are different to those in the United States. One main difference are the costs of higher education. All universities in Switzerland have extremely low tuition fees for Swiss students compared to those costs of attending college or university in the United States. Hence, the factor

cost does not have the same impact on the choice of university in Switzerland.

Furthermore, in Switzerland universities are all of high quality. Most of the Swiss universities do offer about the same range of subjects to study. Only few higher education institutions, such as the ETH, which is known as a leading university for technology and natural sciences, distinguish by their characteristic profile. Rather than quality size and place play a role in the final choice for a given university. Many students make their choice depending on whether they want to study in a small but nice or in a big and more anonymous university.

Other than in the U.S. in Switzerland freshmen do not have to live on campus. Since starting University in Switzerland is not necessarily bound to moving out of the parent's home, many Swiss students just decide to go for the option closest to where they already live.

Conclusion

When choosing a university the major difference between the Swiss and U.S. system is the accessibility of universities. In the United States students have to apply to universities and colleges. This system already limits the choice. In Switzerland all universities are open to all students as long as they have a valid maturity certificate. Only about 20% of Swiss students actually have a maturity certificate, they, however, can freely choose their university.

NOTES

1. University of Basel, University of Bern and University of Freiburg.

2. "Gymnasiale Maturitätsquote", Bundesamt für Statistik, http://www.bfs.admin.ch/bfs/portal/de/index/themen/15/06/dos/blank/05/01.html.

Socioeconomic Diversity: Envisaging a Socially Sustainable Higher Education Environment

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Higher Education (HE) is becoming increasingly important in recent years due to the expanding number of students seeking to be more competitive on the labor market by undertaking a HE degree after graduating from high-school.[1] When, however, a HE degree becomes more valuable in a meritocratic society, do tuition fees necessarily need to increase due to the willing buyer – willing seller reality? And if current trends seem to herald the start of HE becoming a commodity, how does one deal with the negative externalities that accompany market forces and the efficiency requirements that are common to most goods markets? If Excellency is to remain the goal so as to figure in top positions in rankings, how does one ensure that Excellency can be achieved by diverse human capital? And consequently, how does one ensure the socioeconomic diversity of the HE student body if tuition fees continue to skyrocket?

The present essay tries to address some of these questions. Firstly, it will sketch out an understanding of what is meant by socioeconomic diversity, before looking at the U.S. and the Swiss HE systems, and how they currently deal with these challenges. Finally, from this discussion, a number of questions shall be formulated as to how we could envisage a future, socially sustainable HE system, in the light of *Global Perspectives Programme* 2012's motto of 'dreaming big'.

As the *Global Perspectives Programme* reminds us, diversity is a multi-faceted concept that is difficult to reduce to a single definition. Accepting this challenge, though, one could begin with the most obvious – the ordinary meaning of the term. Diversity may be seen as a variety of factual, as well as normative, differences.[2] As we learned from the distinguished speakers at the various U.S. HE institutions we visited, such differences can consist, for example, of race/ethnicity, gender and socioeconomic status. Socioeconomic diversity

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would signify that students come from different family backgrounds – ranging from high-income to poor households, descending from highly educated families to others with limited or no education, and representing different positions in society.

Putting socioeconomic diversity in relation to high postsecondary costs, the element of social sustainability of the so-called 'higher education bubble'[3] becomes important too. One could say that tuition and fees for HE are socially sustainable as long as they do not put students from low and middle income families at a disadvantage.[4] Accordingly, if HE becomes accessible only to the wealthy elite, then the system is at risk of becoming unsustainable and of perpetuating inequality.

This crucial understanding that HE should be open to everybody without distinction has, for example, already been expressed by the 1966 International Covenant on Economic, Social and Cultural Rights. This pivotal human rights treaty embeds central values of our international community and acknowledges that '[h]igher education shall be made equally accessible to all, on the basis of capacity, by every appropriate means, and in particular by the progressive introduction of free education'[5].

In the last few decades, the U.S. has witnessed a general increase in tuition fees including private universities, public universities and community colleges alike.[6] Some of the most prestigious US universities are offering their high-ranking services to students on a tuition basis up to and more than USD 45'000 per academic year.[7] On the other hand, the University of Virginia, for example, as a state university, offers its education services for Virginians for about USD 12'000 per academic year at the undergraduate level. For students coming from outside Virginia, tuition and fees are about three times higher.[8] Finally, the New River Community College offers its courses for in-state students at a rate of about USD 130 per credit point and for outside-state students for approximately USD 330.[9] Accordingly, the US HE market does not only consist of highly elevated tuition and fees that are oftentimes demanded by prestigious Ivies or Little Ivies.

Furthermore, the U.S. has financial aid systems in place to support students from low and middle income classes and provide them with access to HE that also guarantees a more socioeconomically diverse student body, over the long term. A substantial number of U.S. students receive some sort of financial aid such as loans or grants. However, the large majority of assistance seems to consist of loans that need to be repaid after graduation. A recent NY Times article even suggested that currently, a whole generation of new graduates would be highly indebted and would hardly manage to pay these sums back.[10] As regards grants awarded, for example, the Pell Grant that focuses in particular on ensuring that low income students can attend college, recent trends show that such grants nowadays only cover part of postsecondary costs, whereas students still need to bear a significant part of the rising tuition and fees on their own.[11] Accordingly, the numbers of low-income and working-class students enrolling in HE institutions is likely to decrease in coming years.

Although the increase in costs for a HE degree affects predominantly the most vulnerable students coming from low-income backgrounds, students of middle class backgrounds also now seem to be affected by skyrocketing postsecondary costs. Accordingly, one may doubt whether such a HE system will ever be socially sustainable in the long run, if changes are not envisaged in order to make HE institutions more accessible to low and middle income persons beyond a limited wealthy elite.

Turning now to the Swiss HE system, it seems, at least at first glance, to be one that is strongly characterized by a culture embedded in the central values achieved by the French Revolution of 'liberté, fraternité et égalité' as well as the post-World Wars' shaped understanding that the individual has rights that the state needs to at least respect if not even protect and fulfill. HE in Switzerland, consequently, shows a deep devotion to egalitarianism and offers at least at first sight, open access to everybody qualifying for HE – that is, for instance, those students having graduated from a Swiss high school. Reflecting this devotion to egalitarianism, the average tuition fee of about 1'500 Swiss Francs per academic year at a Swiss postsecondary institution, is relatively low.[12]

Accordingly, the prospect of postsecondary education becoming commoditized seems, at least for the moment, unlikely to be realized in Switzerland's HE institutions. However, it is questionable as to whether it will not follow suit so as to remain competitive on a global scale. Such tendencies may be reflected in ongoing discussions as to whether to increase tuition fees at Swiss HE institutions. When several of Switzerland's universities tried to raise their tuition fees, students protested against such changes – saying that this would preclude students from lower income families.[13]

If considered in the context of the recent developments in the U.S., these fears seem not to be entirely baseless. This is even more important for Switzerland as it tries to guarantee open-access to HE. As we can learn, however, from one distinguished Professor of the University of Basel – Switzerland may 'hide a rather elitist system under a veneer of open access.'[14] Although this elitism may not derive from high tuition fees, it is nevertheless important to keep this relatively doubtful open access – most likely based on high selectivity beginning early on in an individual's education pathway – in mind when reasoning about the elevation of postsecondary costs. If Switzerland's open access is not as open in reality as we might think, what should at least be considered are the wider implications that increasing tuition and fees for postsecondary education could bring about. If the pipe leading to HE has several leakages along the way that, *inter alia*, are result from strong selectivity – then costs should not worsen this relatively selective access to HE, that may disproportionately affect individuals from low-income backgrounds. However, this should not hinder a reasonable increase in tuition fees that would better reflect the value and costs of the services provided by HE institutions in Switzerland.

Having such possible negative effects on socioeconomic diversity in mind when commoditizing HE, however, we may want to finally remind ourselves of the value that HE brings to society. Accordingly, Excellency should not only be determined by high ranking results based predominantly on the research strengths etc. of an institution, but also by its diverse pool of students and faculty derived from different socioeconomic backgrounds. Therefore, if we insist on competing on the global HE market – shouldn't we try to distinguish our institutions by their socially sustainable policies? And accordingly, shouldn't our institutions be devoted to the goal of educating people regardless of their socioeconomic status – taking in mind that the 'real wealth of a nation is its people'[15]?

NOTES

1. See, e.g., regarding Switzerland: Education System Scenarios – Analysis: 2011-2020 University Scenarios – Students and Graduates, <http://www.bfs.admin.ch/bfs/portal/en/index/themen/15/08/dos/blank/15/07.html> (visited on Sept. 11, 2012).

2. According to the Oxford online Dictionaries, diversity is defined as 'state of being diverse' and diverse as 'showing a great deal of variety; very different'. See <http://oxforddictionaries.com/definition/english/diverse> (visited on Sept. 8, 2012).

3. See, e.g., The College-Cost Calamity: Many American Universities Are in Financial Trouble, The Economist (Aug. 4, 2012), <http://www.economist.com/node/21559936> (visited on Sept. 11, 2012).

4. Lukas Messmer, Wildwuchs bei Studiengebühren – Die Beträge der Universität St. Gallen sind nach einer Studie nicht mehr «sozialverträglich», No. 21 Der Sonntag (May 27, 2012).

5. International Covenant on Economic, Social and Cultural Rights art. 13(2)(c), G.A. Res. 2200A, U.N. GAOR Supp. (No. 16) at 49, 21st Sess., U.N. Doc. A/6316 (Dec. 16, 1966) (entered into force Jan. 3, 1976).

6. Andrew Martin & Andrew W. Lehren, A Generation Hobbled by the Soaring Cost of College, NY Times (May 12, 2012), <http://www.nytimes.com/2012/05/13/business/student-loans-weighing-down-a-generation-with-heavy-debt.html?pagewanted=all> (visited on Sept. 9, 2012).

7. See, e.g., Tufts University, Tuition & Fees, <http://uss.tufts.edu/bursar/tuitionFees/> (visited on Sept. 9, 2012) ($43'688 tuition during the 2012-2013 academic year).

8. University of Virginia, Tuition, Fees & Estimated Cost of Attendance: Undergraduate Students 2011-2012, <http://www.virginia.edu/Facts/Glance_Tuition.html> (visited on Sept. 9, 2012).

9. New River Community College, Your Tuition Calculation for Fall 2012, <http://www.nr.vccs.edu/tuition/index.php> (visited on Sept. 9, 2012).

10. Martin & Lehren, op. cit.

11. Institute for Higher Education Policy, Window of Opportunity: Targeting Federal Grant Aid to Students with the Lowest Incomes (Feb. 2008), at 5-6, ?http://www.ihep.org/assets/files/publications/s-z/Window_of_Opportunity.pdf?.

12. Die Kosten von höheren Studiengebühren – Studie ermittelt Lastenverschiebung unter den Kantonen bei sozialer Abfederung, www.nzz.ch (March 25, 2011), ?http://www.nzz.ch/aktuell/startseite/die-

kosten-von-hoeheren-studiengebuehren-1.10018568? (visited on Sept. 10, 2012).

13. Lukas Messmer, Wildwuchs bei Studiengebühren – Die Beträge der Universität St. Gallen sind nach einer Studie nicht mehr «sozialverträglich», No. 21 Der Sonntag (May 27, 2012).

14. Comment made by the University of Basel's Rector at the meeting with the Swiss delegation of the GPP 2012 at the University of Basel on June 29, 2012.

15. See Martha C. Nussbaum, Creating Capabilities – The Human Development Approach 1 (2011) (citing Mahbub ul Haq, the Pakistani economist that inaugurated the Human Development Reports of the United Nations Development Programme in 1990).

Access to and within higher education: Diversity

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Within the framework of the Global Perspectives Program (GPP), I had the interesting opportunity to learn more about the challenging issues in higher education (HE), to share and compare my experience as a scholar and PhD student with my colleagues from Virginia Tech, and to visit U.S. higher education institutions, namely Northeastern University, Massachusetts Institute of Technology, TUFTS University, University of Virginia, Virginia Tech, New River Community College. Also interesting was our visit to *Swissnex Boston* and meeting people from the organization *Jobs for the Future*.

The theme that was discussed at the final panel presentation at the Swiss Embassy in Washington was *Access to and within Higher Education* (HE). On the basis of this discussion, as well as the information gained during the brief visits, and my own experience, I will share my observations on the issue of access to and within higher education, the topic of *Diversity* plus other points of interest.

Access

What does it mean "Access to HE"? Historically access to higher education has been limited by gender, race or ethnicity, socioeconomic status and more. The importance of equal access to higher education was emphasized repeatedly in the declarations that emerged from the 1998 World Conference on Higher Education. UNESCO reaffirmed Article 26(1) of the Universal Declaration of Human Rights proclaiming, "Everyone has the right to education. Higher education shall be equally accessible to all on the basis of merit."[1] Increasing the participation and role of women in higher education was also emphasized. The movement from elite higher education (where up to 15 percent of the graduates of secondary education go on to higher education) to mass higher education (16 to 50 percent) is so evident that today it is hardly noticeable as a

defining concept.[2] However we could see that relevant problems still occur.

Michael Lawrence Collins, associate vice president on Jobs for the Future's (JFF) Policy team introduced us this organization, which develops policy solutions and new pathways leading from college readiness to career advancement for struggling and low-income populations in USA. The main goal for them is doubling the number of low-income youth and adults who attain postsecondary credentials.

In his report "JFF`s education agenda" Mr. Collins pointed out some problems of education in the USA. The usual way for an individual to the labor market includes entering high school, achieving college, entering postsecondary and finally attaining credentials or degree with the appropriate for the labor market value. There is a strong correlation between education and employment. However 30% of low income young people drop out of high school, 77% of low income high school grads are not college ready, 38% of low income high school grads do not enter college, 86% of adults needing remediation drop out. Only 21% of low income young people and 14% of low skilled adults attain a postsecondary credential or degree. A main reason for this problem is that their education during high school is not sufficient enough to reach the required level needed to enroll college.

Community colleges have made tertiary education more accessible but whether community college students will continue on to a four-year degree is largely determined by the socioeconomic status of the student's family.

Cost remains a serious barrier to access. Even where tuition is free, students have to bear indirect costs such as living expenses and often loss of income. Student borrowing keep growing, and individuals from lower-income families, on average, get smaller grants from the colleges they attend than students from more affluent families. Scholarships, and/or grant programs are demonstrating a degree of success but the number of them is limited.

Diversity

A topic that came up many times during our discussions with professors, scholars and students from US universities was diversity. During our tour through the U.S. universities we tried to find out the meaning of diversity. Within the framework of our discussion at Tufts University diversity could be understood as a combination of different components: age, ability, race, socioeconomic, gender and more.

The importance of internationality was emphasized. Students from different countries bring fresh ideas and new knowledge to the university. "There is no excellence without diversity" stressed Prof. Joanne Berger-Sweeney, Tufts University. This sentence in my opinion, perfectly reflects the importance of this issue in the modern world.

International Education

On example of MIT I would point out, that U.S. institutions continue their efforts to train and educate foreign students. Many U.S. colleges and universities are making a concerted effort to make their institutions and curricula more international and to provide experiences for students that broaden and deepen their understanding of other cultures.

In particular, I would like to refer to our discussion with MIT PhD students and scholars. They mentioned university gives a direct path to the

global scientific world and that they can easily find a job at the best tech or pharmaceutical companies after finishing their research. Somehow I've got the impression that many universities try to make access easier for international students, but also send their own students abroad for exchange studies or work experiences.

The program "cooperative education" (Co-op) from the Northeastern University provides students with experiences abroad and locally, which helps them develop knowledge, awareness, perspective and confidence to transform their lives.

Institutional diversity

Higher education in the United States is known for its institutional diversity. We had a great possibility get to know some of them.

New River Community College is a public, 2-year school. Students can apply for financial aid and loans. During the campus tour, the system of technical, chemical labs, college TV studio, college theater, Art studio, auto mechanic and a satellite labs, were introduced to us. I was impressed by variety of activities and projects provided at the New River Community College in order to discover a path that fits students skills and interests.

Northeastern University (NU), is a private, secular, coeducational research university. Students have good chances to receive a grant due to the number of university scholarships.

Tufts University is a private institution and the number of scholarships and grants are limited, but they quite succeed in the way of gaining federal financial support.

Massachusetts Institute of Technology (MIT), also known as a private, research university has a multi-channel sales and grant system, special for international students.

Integration

I would like to mention here a couple of programs that provide integration of students in to the education environment and support undergraduates' transition to university. Examples are the BEST program, a six-week summer bridge program in the School of Engineering and another similar bridge program in the School of Arts and Sciences at Tufts University. The transition from high school to college can be stressful and intimidating, so this program aims to help students successfully integrate in college.

One main difference from European university facilities is that in the USA students live on campus not less than two years. This type of program provides ways to get involved in campus life, help students make friends and make the transition to education environment easier.

The students can get involved in college while learning to interact with a very diverse group of people and by learning "code of ethics" of their college. One example of this *code*: "As a member of the New River Community College student body , I will act in a responsible manner at all times. I will not cheat, lie, or steal. I will obey all school rules & regulations. I will respect the right and privileges of others".

Conclusion

To summarize, I would like to note the very interesting and informative experience of one-week visit in the United States. This visit gave me the opportunity to look inside U.S. education, to enrich my knowledge about the meaning of access to higher education and the education pipeline. I

think each of us will keep thinking about certain questions: in what ways have we experienced diversity or in what ways might each of us act in the future to promote a greater understanding of diversity?

NOTES

1. Report Prepared for the UNESCO 2009 World Conference on Higher Education Philip G. Altbach, Liz Reisberg Laura E. Rumbley Global Higher Education: Tracking an Academic Revolution. S.37

2. This Ratio was officially determined by Martin Trow in his report about understanding large-scale, worldwide changes in higher education, presented to the Organisation for Economic Co-operation and Development (OECD in 1974.

Role of Women in Academia: an outlook from a scientific point of view

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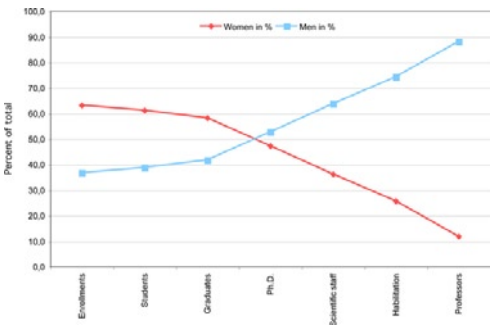
The proportion of leading women in academia is very small according to studies conducted by the Massachusetts Institute of Technology, Johns Hopkins and Berkeley University. In 2001, women held an average of 8.9% of senior academic research positions in 17 EU and associated countries. In particular, at the University of Basel only 16% of the professor positions are held by women. In the United States the situation is slightly better, women outnumber men both among college students and among professional and technical workers. Despite this, women lag far behind men in holding full professor and academic leadership positions. Indeed, at Virginia Tech women held only 28% of the professorship positions. These data are the proof of an existing worldwide gender inequality.

Gender equality means that individuals have equal chances of succeeding independently from their sex. In life sciences, almost 50% of the graduate students in Europe and the US are women. The pattern is very different if looking at the group leader and professor positions. This is well illustrated in the following graph representing the German situation in the year 2003.



Gender Distribution within Career Stages in Biological Sciences at German Universities (2003)

Where does this gender inequality come from? Several cultural studies have been conducted aiming to identify the causes of this gender gap.

These investigations shed light on the fact that factors which may contribute to the less rapid advance of women in their scientific careers are multiple. Certainly the main problem is the difficulty to balance family and work responsibilities since the family care taking for children and aging parents continue to fall disproportionately on women. Several studies revealed that young mothers tend to be less integrated in the work market compared to women without children. Moreover, a cultural or hormonal component plays a role in this vertical segregation. Indeed, female candidates are less competitive, less confident and more risk averse than their male counterparts. In Academia, the selection for candidate jobs favours predominantly male characteristics such as self confidence and aggression over cooperation. As a consequence, finding a position in this environment is quite challenging for women. Another factor that might play a role in this gender gap is the lack of leadership role models and mentors that could encourage women in academia. Last but not least, research agendas might not be easy to handle for women's lifestyle. Women usually enter research career at a later stage and they are also more likely to work on temporary work contracts and on a part-time basis.

The achievement of a more equal system is certainly of great importance and could lead to a global improvement in different aspects. For example top research jobs need the combination of different skills, which can be reached best only with the mix of men and women. Moreover, a more abundant presence of women in the leadership positions could function as a role model and encouragement for young female scientists.

To overcome this vertical segregation, countries have adopted policies and programs to increase the participation of women in academia. This approach includes a large variety of possibilities ranging from grants to support senior positions for women at universities to recruitment strategies towards equally qualified women candidates. On the employment side, flexible working hours, childcare facilities and parental leave are fundamental to support women to pursued research careers in public and private environment.

In Switzerland, The Swiss National Science Foundation (SNSF) provides support for female researchers through the Marie Heim-Vögtlin (MHV) grants. This kind of support is made for women with a non-linear career path who have had to interrupt or reduce their scientific activities for family reasons. The grants enable them to restart or continue their research at a Swiss higher education institution and to improve their scientific profile. The aim of MHV is to facilitate the integration of grantees at a Swiss higher education institution and to enable them to pursue a long-term scientific career.

Switzerland is also involved in a major national research program about gender equality called NRP60. This study aims to identify the causes of gender inequalities, review equality policy and come up with recommendations for sustainable policy and practices. In the project, much interest has been focused in women in engineer studies since in Switzerland is below the European Union average regarding the proportion of female students in this field.

Since 2001, the University of Basel together with Novartis established a unique mentoring program called Women into Industry (WIN). This program is made to support young female academics from all fields and to offer them the opportunity to explore

their professional options in the private sector. The program lasts one year in which the mentees are supervised by an experienced specialist or manager from Novartis and individually coached. Mentors are in charge to develop the networking and the career planning of the mentees.

Despite real progress to promote gender equality in Switzerland, discrimination at work and in the legal system still make Swiss women's conditions worse than the one of their European neighbours. The labour market needs to be reformed and wage discrepancies are still a reason for concern. As Etiennette Verrey, the president of the Swiss Federal Commission for Women's Issues, affirms: "In Switzerland there's still this idea that the mother has to stay with the child. And for a scientific career this is impossible. Because if a woman leaves her professional life for one to two years, she virtually cannot return to it again. The reconciliation of work and family life is a very big problem".

From our GPP visit in USA we found out that in American universities the gender bias is not felt as strong as the race and cultural background issues. Probably this is due to the fact that the concept of diversity in US is not limited to gender but includes also different ethnies and social status. The problem still remains since the Global Gender Gap Report ranked US as 31st country far below most European and industrialized countries (report of 2009). The source of the problem is always the same: women don't run because they have a different relationship to family than men do. Also in US, researchers have shown that women generally have greater obligations to childcare and household work than men. Furthermore, high achieving women are far more likely to be married to similarly career-minded spouses than are high-achieving men.

Zena Werb, president of the American Society for Cell Biology (ASCB), noticed that "we are seeing a trend in which women scientists seek, take, or are offered less challenging positions, as well as a continuing trend in which women rise through the ranks less efficiently".

For this purpose, scientific organizations such as the ASCB can do a lot. The ASCB has been at the forefront of promoting gender equality in the molecular life sciences in the US, having established Women in Cell Biology in the 1970s. Their website provides information and important links for women seeking for a job. Moreover, specific fellowships to support women in career have been established. An example is the L'Oréal USA fellowships for women in science program. The L'Oréal USA Fellowships for Women in Science program is a national awards program that annually recognizes and rewards five U.S.-based women researchers at the beginning of their scientific careers. These fellowships aim to strength the contribution of women to the science and to identify a exceptional female researchers to serve as role models for younger generations.

Despite gains in the training of women scientists and the implementation of programs to help women overcome their barriers, the career path of most women scientists at universities remains a difficult trek. As we mention before the gender bias is a global problem that is perceived in Switzerland as well as in USA. In both context, studies and possible solutions have been formulated to overcome this discrimination. Both women and men have to accept that they are different, but these diverse qualities should be used as a resource and not as a hidden discrimination tool to exclude women from top leader positions. A step forward has already been made since the gender issue has emerged in the academic field. The discussion about the problem is the starting point to open up opportunity for women.

Competition in Higher Education: Build It and They Will Come or You Have to Spend Money to Make Money

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Virginia Tech

As a former undergraduate recruiter, I began this program fascinated by how different the U.S. and European systems, particularly the Swiss system, handle the concept of enrollment management and competition for students. The systems in general are so different in terms of admissions and funding sources that I expected obvious differences in the way they seek out students, especially at the undergraduate level. I was not prepared, however, to see how connected those differences are to the basic approaches our two educational systems and cultures take to higher education.

Here, I argue that the core difference between U.S. and European approaches to enrollment management comes down to the current conception of competition within higher education. The European system of higher education takes a "build it and they will come" approach to higher education. Education is something that all their citizens are entitled to, if they can succeed at it. Universities do not have to carve out a "niche" for themselves or compete with other universities for students. Students will come because the university offers a public service that students need. Competition may be beginning to manifest itself within the European system, but it is currently focused within the realm of research funding, not that of student enrollment.

The U.S. system, on the other hand, takes an approach that is more aptly represented by the aphorism, "you have to spend money to make money." Education has become much more commercialized in the U.S., due to increasing competition, which has its roots in the growth of community colleges, the introduction and growth of for-profit universities, and an increased demand for higher education in general. The U.S. system may, at one time, have had a "build it and they will come attitude" but these factors and others—such as the concern for rankings and decreases in public

funding—have put universities on the defensive in recent years (Carlson, 2009; Lauer 2009). Now, universities must invest in marketing, recruitment, and scholarship programs that establish their own unique institutional identities, attract students, and encourage increases in enrollment (and tuition revenue) just to survive in the current market.

Enrollment Management in Practice

These differences in the approach to competition are at the core of the significant differences in enrollment management practices. In the U.S., universities employ entire units dedicated to attending college fairs around the country, visiting high schools, planning telemarketing campaigns, and creating on-campus programming for potential students, not to mention producing electronic and printed materials to persuade students that each university is the right choice for them. Significant amounts of money are poured into these programs. In fact, for 2011, Noel-Levitz, a higher education consulting firm, found that the median cost for recruiting a single undergraduate student to a public institution of higher education in the United States was $457, including salaries for staff, travel, publications, advertising, and other costs (2011).

In Europe, however, these types of standalone units are rare. From the universities we visited during Global Perspectives 2012, I only found one university with such a unit. Eidgenössische Technische Hochschule Zürich (ETH) has a department for Orientation and Coaching, which runs the ETH "On the Road" program as well as Study Weeks and Information Days for prospective students to visit the university and learn more about it. Most of the other universities I spoke with noted that they did attend college fairs and visit high schools, but that more often than not, professors were asked to attend those events because they have no dedicated recruitment staff. Furthermore, all the universities we visited seemed to focus much more heavily on regional recruitment activities, only visiting high schools and actively recruiting students within their own supporting cantons. Again, ETH seems to be the only exception, given that it is a federal university, rather than a cantonal one.

These differences were not necessarily surprising; however, as I learned more about the European systems that we visited and their basic approaches to higher education, I began understanding the reasons for those differences.

Practical and Philosophical Origins of Difference

While I argue that the core reason for these differences is the different approaches to the concept of competition within the U.S. and European systems of higher education, it really is not that simple. That core difference exists for a number of reasons.

First, one of the most obvious differences is between the funding models of each system. Most of the universities we visited in Europe were typically 70-80 percent publicly funded. By far, the largest portion of their operating budgets was provided by federal and state governments. Therefore, European universities do not have the financial need to bring in more students in order to charge more tuition so they can stay afloat like many universities in the U.S. Furthermore, that funding is guaranteed by law, so universities do not have to compete with each other for that funding source. They may compete for research funding and the like, but they do not have to compete for their largest source of funding. In the U.S., on the other hand, funding from state sources has been steadily on the decline. In fact, the percentage of Virginia Tech's budget covered by the state was only 28 percent for the 2011-2012 academic year (Virginia Tech, 2011). In situations like this, universities in the U.S. have little choice but to continue raising

tuition and fee levels, which further complicates a competitive environment where the affordability of higher education is a major issue. The low tuition of most universities in Switzerland, however, means that affordability is rarely a factor in students' decisions on where to go to school, so there is no race to see which university can offer the best education at the lowest price.

Secondly, another obvious difference between the two systems is their models of admission. The universities we visited were required by law to have a very open admissions model where if a student successfully graduated from high school with a maturity certificate or the equivalent, they could attend any university they wanted. In the U.S., this kind of open admission model is often interpreted as a sign that a university lacks rigor. Universities seem to pride themselves on the numbers of applicants they deny admission to each year, based on the idea that the better universities are more difficult to get into. European universities, however, are seen as national or regional services to society. If students have the appropriate qualifications, which are set by the federal or state governments, then nothing can stop them from enrolling in the university of their choice. Alain Beretz, President of the University of Strasbourg, said that the of the university is not perpetual, unending growthto the point of "crushing the competition" and stealing the best students. Rather, all universities cooperate in what he termed a balanced for the good of the nation. This ecosystem of universities, then, works to offer the best services each university can in order to serve the students of their individual regions in an effort to benefit the nation as a whole.

This leads into the third reason why the two systems have such different approaches to competition in higher education—the underlying perception that all universities are equal. Frankly, I did not consider this possible until Rector Prof. Dr. Antonio Loprieno of the University of Basel mentioned it in his talk. Even after he mentioned it, I still did not understand how it could be true. In the U.S., nothing is further from the truth. Loprieno conceded that some universities are "more equal" than others because of the research funding they have access to, but at a basic level, there does, in fact, seem to be a conception that one university is just as good as another. So, if one university is just as good as the next one, and there is little difference in affordability, students seem most likely to attend the university that is closest to home.

Furthermore, since Swiss students attend universities that are closer to home, they are not necessarily forced to form new social groups when they go to university; therefore, they do not identify with the university as much as students do in the U.S. That is the fourth reason the two systems approach competition differently. Students do not seem to identity with their alma maters in Europe as much they do in the U.S. In fact, the concept of the "alma mater" was just beginning to develop at many of the universities we visited. Where people go to college is less important to them than what they studied while they were there. According to Rector Loprieno, universities in Europe are focused on training an individual for their future work, rather than educating an entire, informed citizen, like the U.S. system. A former GPP participant writes that the concept of educating the whole student, particularly in the U.S., includes "the intellectual development of the student along with his/her development as a person" (Simonius 2011). This approach makes attending university part of a student's development into adulthood and citizenship. It is perceived much more as a rite of passage for students in the U.S., where it is simply a step toward a career in the European system.The university is therefore less a part of a student's identity than the field or discipline the student is entering. Hence, students in the European systems

we visited would likely be more concerned that their chosen field of study is a right fit than that their university is the right fit. The opposite seems to be true in the U.S. Students are most concerned that the university they choose is the best fit. After all, they are likely to change their major anyway.

Finally, the last reason why the two systems have such different approaches to competition for students at the undergraduate level is that the value of the bachelor's degree is still somewhat in flux in Europe after the adoption of the Bologna Accords. Throughout our visits, we heard many times that the master's degree is the professionally qualifying degree and that students really are not ready to enter the job market after the three-year bachelor's. While some may argue that the same trend exists in the U.S., it has not reached that level yet. Many students are still able to successfully find employment in their chosen fields with a bachelor's degree, even within the current job market. In Europe, however, the bachelor's was virtually created by Bologna in an effort to create an international standard system of degrees, but the master's degree is still the degree that most employers seem to desire. Therefore, if the bachelor's degree is only a step toward the master's degree, and every university is fairly equal in the educational rigor (as noted above), then it does not necessarily matter where students receive their bachelor's. It only matters that they do, so they can move on to the master's and into their chosen career. If where a degree comes from does not matter as much in the European system and culture, then there is obviously very little basis a competitive environment between degree-granting institutions.

Final Thoughts

Throughout the GPP experience, I have tried to determine if I think one system works better than the other. I realize that is not the explicit purpose of the Global Perspectives Program, but these additional perspectives make me question the efficacy of the U.S. process. I was an undergraduate recruiter for my own alma mater for nearly seven years, but I still wonder: Does it make sense for universities to compete at this level? Is it healthy competition, and does it drive universities to be better? Or is it capitalism run amok?

I don't have the answer, but what I can say is that both systems have room for improvement (Doesn't everything?). Perhaps the tentative answer is that we should start moving toward each other. Maybe a little more competition would drive even more innovation and improvements in the European system, and maybe a little less would drive more collaboration and the development of a U.S. ecosystem of universities that works for the betterment of the nation rather than the unbalanced improvement of a institutions.

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Digging into the Differences: Exploring Diversity Valuation in US and Swiss Higher Education

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In the United States, the past few decades have resulted in an explosion of concerns over the presence of "diversity" in higher education. Although the specifics of what diversity entails are still intensely debated, there is a general consensus about the benefits that its existence provides. At all levels of higher education, from undergraduate students to university presidents, diversity increases the quality of academic dialogue, bringing together viewpoints and ideologies that otherwise may not be included in the discussion. Perspectives of those who grew up in economically disadvantaged situations can challenge those folks who grew up with the "world at their fingertips", just as experiences of prejudice or discrimination can personalize the conversation surrounding privilege.

The presence of diversity among university and college higher-ups (faculty, administrators, etc.) also provides a valuable addition to the higher education experience for students. Having role models from similar backgrounds or demographics demonstrates to students that prestigious positions are available to them and may even inspire students to strive harder.

In the United States, the conversation regarding diversity tends to center around historically underrepresented populations in higher education. Racial diversity is always high on the list of concerns, often followed by gender considerations. Groups in these categories (primarily blacks and women) were historically, and categorically, denied access to universities and colleges. Scholarships, fellowships, admission targets, and other tools are used today to try and entice students from these groups into higher education, in an effort not only to achieve the benefits previously discussed, but also to "right the wrongs of history".

Only more recently have other aspects of diversity ranging from diversity in age or dis/ability

attributes to sexual orientation or economic status been recognized and embraced. Many of these diversity traits are, of course, also linked together – race has historically been linked with economic status much as dis/ability attributes can affect employment opportunities. Regardless of the specific characteristics in question, however, an embracement of diversity is highly present in almost all US higher education institutions. Universities and colleges constantly collect and evaluate data, and strive to increase representation and access.

In Switzerland, the history of the country has created a different conception of diversity today. Due to its geographic characteristics, Switzerland presents a much more explicit diversity than the US. The presence of four distinct languages requires the average Swiss citizen to deal with diversity head on – simply traveling to another part of the country requires the adoption of a new language and some difference in cultural norms or expectations. This creates a unique situation for Swiss institutions of higher education, simply by determining the language(s) that courses are taught in, to implicitly include or exclude Swiss students. The difficulty present in such a task may explain the lack of emphasis on other forms of diversity.

The only other national priority when it comes to diversity for Swiss institutions may also relate to recent historical events – in one canton (Appenzell Innerrhoden) the federal law granting women the right to vote was passed as recently as 1990. Since then, the federal government has identified the recruitment of women into the higher education system as a national priority, and additionally encourages female recruitment into STEM fields (Reichert 2009). However, even with the national prioritization in place, female recruitment into some universities has remained both low and fairly stable in the 21st century (Eidgenössische Technische Hochschule Zürich [ETH Zürich] being a prime example). Some universities, such as Scuola universitaria professionale della Svizzera italiana (SUPSI), are attempting to increase recruitment by providing women's centers ("gender service") that help with family-work balance.

Additionally, the low cost of attending higher education in Switzerland has resulted in essentially zero emphasis placed on economic status as a diversity indicator. Conversations with students and faculty alike made clear the near-universal feeling that there were no economic barriers present for Swiss students who wanted to attend higher education. However, the rising cost of institutions such as Università della Svizzera italiana (USI) and the slow, but growing, population growth rate may result in economic status becoming a true barrier to access. Even as the picture exists now, many Swiss students spoke of the need to live with families or of parents fronting the very high living expenses associated with cities (such as Zurich) during higher education studies. In the near future, however, Switzerland is very unlikely to experience any degree of the economic disparity currently present in the United States, and therefore is unlikely to need to account for it in its higher education system.

One true barrier to higher education in the Swiss system is age. Although primarily because of cultural standards, it is extremely rare for any students to enter a bachelor program above the age of 25. There is very little educational mobility after that age, and it is very rare for older individuals to return to higher education to pursue a different career path or training. This is, perhaps, an area in which efforts should be focused. Diversity in life experiences positively benefits the academic conversation for all students.

Overall, the United States and Switzerland both clearly demonstrate their cultural heritage in their valuations of academic diversity. Differing con-

temporary priorities reflect differing historic experiences. Although both countries still have a way to go in order to create truly inclusive higher education environments, both countries would benefit from a look at the other's model. Switzerland exceeds the United States in providing an education to all qualified and interested students, generally at very low cost, while the United States excels as ensuring that the resulting education is both diverse and dynamic. Continued conversation will benefit all players in the higher education arena.

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An examination of tuition in Sweden, Switzerland, and the United States

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The cost of attendance is one of the major hurdles that people face when deciding whether or not to attend post-secondary education. Tuition is the cost to attend a college/university and is distinct from the cost of living expenses a student may incur to support themselves while they attend school. Many times schools have additional mandatory fees in addition to tuition for the use of health facilities and technology. All of these costs can add up quickly for a four year bachelor degree and can limit access to higher education. This paper will examine tuition rates in Sweden, Switzerland, and the United States. For each country it will discuss ways in which students can attempt to pay for higher education. Finally, it illustrates the importance of tuition to schools in Switzerland and the United States by examining the percentage of a budget that comes from tuition and fees for many schools.

Tuition in Sweden and Switzerland

Sweden is a socialist society which grants its citizens free higher education, healthcare, and retirement. Therefore, students in Sweden do not pay any tuition to attend school. However, students are responsible for their own living expenses. Sweden does offer student loans to defray the cost of rent, food, travel, and books. Such loans are expected to be paid back once the student has completed their degree.

Sweden and Switzerland share many commonalities in their educational systems. However, Switzerland does charge a tuition fee, but for most schools in Switzerland the fees are fairly low. Tuition rates are dependent upon the canton (similar to a state in the USA) or the federal government if the university is federally supported. Most rates are fairly low when compared to universities in the United States. Tuition rates for four major universities in Switzerland are below.

University	2012 Yearly Tuition for Swiss Residents (Swiss Franc)
University of Zurich[1]	1,280
ETH[2]	1,160
University of Lugano (USI)[3]	4,000
SUPSI[4]	1,600

In addition to tuition fees, students in Switzerland must also pay for cost of living expenses. In order to pay these expenses, many students have a part time job, or in some cases they will receive support from their parents. Swiss students can also apply for student loans to help cover the costs of attending higher education. It should be noted that while many universities in the United States require students to live on campus and pay housing fees their first year, students in Switzerland and Sweden do not have this requirement. Therefore they must find accommodations near the university on their own and pay 'market rates' for rent. Many students defray some of these costs by having roommates.

Tuition in the United States

Tuition in the United States, compared to Sweden and Switzerland, is on average much higher. Tuition rates for in state residents for a sample of schools in the United States are displayed in the following table.

University	2012 Yearly Tuition for In State Resident (USD)
Virginia Tech[5]	$,9,187
Harvard[6]	$37,576
University of Virginia[7]	$12,224
New York University (NYU)[8]	$43,204
University of Iowa[9]	$7,765
University of Alaska[10]	$11,490

If students do not have parents that can help pay the costs of college, students have some options. Many students take out student loans to pay for school, which can end up totaling more than $100,000 of debt by the time the student has completed their degree. Recent studies have found that student loan debt in the United States is more than automobile loans and credit card loans.[11] Other options entail seeking scholarships within and outside of the university to reduce the cost of attending college. Some wealthier universities have taken the approach to allowing low income students to attend for free. For example Harvard does not expect its students, or their family, to pay any of the costs of college if the family's income is under $60,000.[12] Unfortunately, it is very difficult to attend a wealthy university such as Harvard and this option is not available to all students. Some other options exist for students such as working to save money. However it can be difficult to find a job that pays well enough without a college degree that allows young people to save for school as well as pay for rent, food, and other necessities. Another option for young people in the United States is to enlist in the military in order to get funds for college. Under the GI bill after September 11th, students can have all of their tuition and fees reimbursed.[13] However, such programs normally require at least four years of military service before the student can attend school. This delays the education process, and would grant a student a four year bachelor degree at the age of twenty six at the earliest. Obviously there are some additional options that students have in America that may not be present in Switzerland and Sweden, such as joining the military, but they come with other costs.

Higher Education's Dependence on Tuition

Tuition serves as one means to pay the expenses that are required to operate a university. These expenses include paying staff and faculty, as

well as maintaining buildings, supporting sports programs, and offering extra-curricular activities to the school's students. However, there are some major differences in how universities in Switzerland and the United States are funded. As shown below, income from tuition is generally a much larger part of a university's budget in the United States than in Switzerland.[14] [15] [16] [17] [18] [19] [20].

It should be noted that both Harvard and NYU are private universities in the United States. This means they receive less financial support from their governments. Overall, universities in the United States receive less automatic annual financial support from state and federal governments than universities in Switzerland. Hence, universities in the United States charge tuition to offset the lower levels of government funding.

Further, universities in the United States attempt to increase funding through alumni donations. These alumni donations generally are put into a fund known as an endowment. Endowment size is a source of competition among top schools, with Harvard's endowment being the largest at over 25 billion[21] in 2005. Large endowments allow schools to grow from the interest on the endowment without the need to raise funds from other sources, such as tuition. For example, in 2005 Yale's School of Music received a $100 million donation which allowed it to become tuition-free.[22] Universities in Switzerland rely less on alumni funding than American schools, however there has been a push to seek out alumni support in recent years. However, many graduates of school's in Switzerland owe their academic loyalty more to their field of study than their school. This lowered level of 'school spirit' due to the lack of school level sporting teams and no requirement to live on campus, makes it difficult for Swiss universities to get support from their alumni. Universities in Sweden receive no funding from student tuition, and all of their funding is from the government.

Final Thoughts

The costs of tuition are a barrier to the access to higher education. As evidenced, the barriers of tuition are higher in the United States than in Sweden or Switzerland. However, there are many ways for students seeking to attend higher education in the United States to attend whether that includes obtaining scholarships, joining the military, or accumulating debt. While the costs to attend higher education in Switzerland and Sweden may be lower, the educational environment seems to be much more difficult and more students do not make it through the first year than in the United States. Therefore, while no system is perfect, on average the educational systems in Switzerland and Sweden make it more economically feasible for someone to have access to higher education than in the United States.

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Gender and STEM around the World

Jennifer Tolley
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In the United States, there has been a big push for science, technology, engineering, and mathematics (STEM) education. United States President Barack Obama has even launched the "Educate to Innovate" campaign to improve participation and performance of American students in STEM courses[1]. This push came as a result of the 2006 Programme for International Student Assessment in which American students ranked 21st out of 30 in science literacy and 25th out of 30 in math literacy[2]. In Virginia, the STEM fields have grown. Enrollment in Engineering has grown by 30.1%, Biological Sciences by 12.9%, and Science Technologies by over 100% since 1995. The only discipline that has decreased has been Mathematics, which decreased by 0.1% [3]. In the United States, there are also many national organizations that support women in STEM fields including the Association for Women in Science[4], Sigma Delta Epsilon[5], the Society for Women Engineers[6], and the National Center for Women in Technology[7].

Virginia Tech also strives for gender diversity in STEM Education. At Virginia Tech, women make up 39.7% of the graduate student population and 41.7% of the undergraduate class. In total, Virginia Tech has 41.5% female students[8]. This still falls short of the national average of 56.7% women enrolled in post-secondary education[9]. In STEM fields, Virginia Tech is still a bit under the national average. Of all the females that graduate from Virginia Tech, 15.8% obtain a degree in Engineering while the national average is 17.8%. In the College of Sciences, females receive 53% of degrees, but only 28% of those went on to a Masters degree compared to 51% of males[8]. While Virginia Tech is below the national averages, it does have many student organizations and programs including a student chapter for the Society for Women Engineers as well as the Center for Enhancement of Engineering Diversity.

AdvanceVT is another program that helps Virginia Tech recruit and retain high quality and diverse faculty. This program helps graduate students preparing for employment and new faculty who are just starting out. AdvanceVT reports that 27% of all tenure and tenure-track faculty are women. The highest concentration of women faculty is in the Liberal Arts & Human Sciences at 48%. The lowest, however, are Engineering, with 14%, and Science at 20% [10].

Virginia Tech, and the US in general, has continued to struggle to attract women into STEM fields, especially as STEM faculty, but does this trend extend internationally?

Eidgenössische Technische Hochschule Zürich (ETH Zurich) is one Swiss school visited during the Global Perspectives Program that was very similar to Virginia Tech. Across degree levels, female enrollment represents 29.6% bachelor students, 31.6% masters students, and 31.3% of those seeking a doctorate. Much like the US, the highest concentration of female student is 61.5% in the Faculty of Humanities, Social, and Political Sciences and the lowest is 12% in Mathematics. They do surpass Virginia Tech in the number of female faculty at 31.6% female staff. However, only 8.3% have a full or associate professorship, which is much lower than at Virginia Tech. ETH Zurich does focus on gender and family issues and includes career building programs, awards, and scholarships for female students[11].

The Universität Zürich (University of Zurich), more of a liberal arts college, surpasses its sister school, ETH Zurich, with regard to the number of females enrolled in doctoral programs with 52.2%. However, University of Zurich does show a similar split between STEM fields and humanities. Medicine, Arts, and Veterinary faculties have the highest concentrations at 56.6%, 83.4%, and 65.9% respectively. The lowest concentrations are in science and economics/business at 48.2% and 29.1% respectively. Like ETH Zurich, the University of Zurich also has programs in place (e.g. the Office of Gender Equality) and also provides grants exclusively for women in science fields. They also have a joint childcare program with ETH Zurich[12].

Another Swiss higher education institution, Scuola universitaria professionale della Svizzera italiana (SUPSI), an applied science institute, has a total of 45% enrolled female students. Much like ETH Zurich and University of Zurich, the highest concentration of women are in Social Work, Education, Heath, and Design (77%, 77%, 77%, 71%) and the lowest in technology, informatics, and construction (7%, 8%, 19%). They also promote the presence of female and male students in courses that are traditionally taken by students of the opposite sex as well as the balance between family and professional commitments[13].

Not only do the schools themselves offer programs to encourage women in STEM fields, but there are many national organizations in Switzerland that focuses on such concerns. The Swiss Society of Women Engineers (SVIN) works to improve work conditions as well as represent the interests and promotion of female talent in engineering. Other organizations include Soroptimist and Zonta Club, which have groups in many countries and areas, as well as the Association of Women Farmers from Ticino.

From this short look at three Swiss schools, we can see that Switzerland has similar issues as Virginia Tech and other schools in the United States when it comes to attracting females into STEM fields. Swiss schools also have programs (similar to those in place at Virginia Tech) to support and encourage female students and faculty going into STEM

disciplines and jobs. This shows that women in STEM is an international issue and more research should be done to look into the reasons why this is an international issue.

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Community Service and Higher Education

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During our visit to European higher education institutions I investigated about community service and its linkage (or not) to such institutions. My interest in this topic started a long time ago, during my college experience in Chile (where community service is very popular and strongly linked to universities), continued during my graduate student experience in the US (where community service is big, but not necessarily linked to higher education), and was amplified by the Global Perspectives Program (GPP) 2012 European experience (where community service seems to be not very popular and not linked to higher education). Based on my personal experiences, this essay presents a comparative approach of Chilean, US American, and European community service—higher education relationships. I want to highlight that this analysis is in no way intended as a value judgment of the different social models, as I believe none of them is better than the others, they are just different.

I will start briefly talking about the Chilean experience, because that explains my initial interest in the topic. In Chile, most students participate voluntarily in at least one community service group during their higher education; it is almost seen as an unwritten student duty to help the community. A community service group is understood as a non-profit organized group of volunteers that offers their particular knowledge and skills to other members of the society that are less favored or have fewer resources (generally economic). This is inserted within the concept known as "University Social Responsibility" (USR), that can be defined as the relationship between the role fulfilled by higher education institutions to educate people with interdisciplinary profiles, generate knowledge in its application context, and link itself organically with the environment.[1] Even more, in the last couple of years there has been a tendency to formalize USR by creating social responsibility

"menciones" (something similar to a minor in the US), in order to acknowledge students with high accomplishments in this area. I think this phenomenon is due to several facts:

First, assuming there is a general lack of resources in a developing country, therefore not all needs are covered, especially for the poorest section of the population. This, paradoxically, increases the generosity of people towards other people. Each individual feels it's his/her duty to help the community develop, because if the community is well, individuals belonging to that community will be well, and vice versa. While this might be the result of the Chilean society being somehow collectivistic, it may also have to do with the fact that Chile's development is based on community wellbeing, not just individual wellbeing. The government has social development plans and benefits designed for the fraction of the population with less resources, but because of the mentioned general lack of resources, the government can't reach everybody nor take care of all needs, so each individual within the community assumes the responsibility of giving a hand to the community. This is even reflected in the Chilean Constitution, which says that the State should aim to promote the commonwealth, creating the social conditions that allow to each member of the national community the highest spiritual and material fulfillment.[2]

Second, most community service groups are completely student-created and student-led, but they need to have faculty advisors that supervise group activities. As such, participation in these groups offers students valuable practical experience related to their field of study. Besides the leadership experience usually gained from running these groups, they allow students to have hands-on experience beginning in the 1st (freshman) year under the supervision of a professor. This is highly valued by students, who otherwise would not have hands-on experience until 4th (senior) year, but is not something you would necessarily include in your CV.

Third, student clubs, organizations, societies, fraternities, etc. are not as popular in Chile as in the US, so community service groups serve as a social interaction activity as well, were students go meet new friends and have fun while learning and doing something valuable for the society.

As far as I can tell, community service groups are big in the US as well, but their characteristics and motivations are different than the ones in Chile. In the US these groups are generally not associated with universities or the students field of study, and students seek them mostly as a leadership experience, which can be a positive addition to their CV. I think this is related to the US being a more individualistic society, in which the individual associates success to his/her fulfillment, which is not necessarily linked to the community development as a whole. Also, the US is a developed country with high resources in general, and even though it is certainly affected by poverty, people have relatively more access to services than in a developing country.

About Europe (specifically Switzerland, France, and Italy), I was really astonished to find out that community service groups are not very popular among higher education students, and most people were rather surprised at my question. An explanation some of the students gave me is that they thought their social responsibility was to pay taxes, so the government could take care of the needs of those with fewer resources. After considering it, I think this makes sense in the European context and the centuries of societal and governmental development, where it is possible that citizens rely completely on the government for some responsibilities. Also, most students stay in their cities of

origin during their higher education, so apparently social life doesn't occur as much on campus, and as a consequence there are not as many student-organized or student-led extracurricular activity groups in general.

With such different histories, current situations, societies, and political systems, it is very hard to make a comparison between community service and higher education in Chile, the US, and Europe. In Chile in particular, and in Latin America in general, it is understood that universities have an obligation to contribute to the sustainable development of the society. On one hand this means that their every day actions carry consequences. On the other hand, that they have the power to generate changes in the society.[3] It seems like USR is a Latin American phenomenon that could be explained with the history and development of universities in Latin America, which always have defended their decision-making autonomy in relation to the different governments. This is especially relevant when considering the economical, social, and political contexts that have affected and continue to affect Latin America.

In a nutshell, I believe that community service linked to higher education is a unique and enriching experience characteristic of Latin America, which serves as an efficient instrument to introduce students to real life experiences related to the profession, while interacting with the community and offering services otherwise inaccessible.

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The solution lies beyond imagination

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In a talk in February 2010, creativity expert Sir Ken Robinson cited Abraham Lincoln, the 16th president of the United States: "The dogmas of the quiet past are inadequate to the stormy present (…). As our case is new, so we must think anew and act anew."[1] Robinson admits he does not know much about American history and why the president said those words. Nevertheless, this voice from the past helps him to fight what he considers to be the greatest problem of today's educational systems: Paradigms formed again - in the past. Indeed, public schools and universities as we know them - in Switzerland as well as in the US - were designed by the intellectual culture of the enlightenment and in the circumstances of the industrial revolution. This culture was driven by an economic imperative of the time, and running right through it was an intellectual model of the mind. This was essentially the enlightenment view of intelligence, consistent of manly deductive reasoning and knowledge of the classics.

Until only one or two generations ago, schools based on these ideas allowed children who worked hard and did well to go to college and then find a job. Today, this is not true anymore. Of course, schools in the past also had and produced many problems, and access to education – especially higher education – was just as limited and determined by various factors as it is now. But children and students knew if they were successful within the school system, they will be more or less equally successful in the economic system. In the 21st century, governments still want the students they educate to take their (good!) place in the economy. To reach that goal, school systems have been reformed over the past few years. But these changes are nothing compared to the huge transformations taking place in the economic world. Therefore, instead of being prepared for jobs, a lot of children and students are alienated by the kind of education they get and it seems like societies make very

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poor use of individual talents. Schools prepare to solve standardized tests, and children at the age of 14 still think there is only one answer to most of the questions they are being asked. This might improve at universities – depending on subjects and teachers, but students who have been taught to learn instead of having their own ideas are often unable to cope with the new liberties of thought in higher education.

Facing these problems, Ken Robinson calls for changes in education paradigms, he even wants a "learning revolution". Some thoughts on why access to (higher) education could play a key role in that:

Robinson calls for a revolution, a very specific kind of revolution: Society, governments and last but not least teachers should try to rethink issues they take for granted. Why are mathematics considered as more important than arts? Why do universities still institutionalize the "two- cultures"- model of sciences and arts? And so on. The most crucial problem we are facing here is a lack of alternatives. Those who are in charge of the revolution Robinson and other experts call for, are only powerful within the system. What they can do (and therefore did in the past) is reforming the existing model. But since their position is defined by the old one, it would be much harder for them to create an entirely new system. A revolution can hardly be undertaken by those who represent the old world.

Radical changes (not revolutions, though!) in the academic context were therefore often caused by unforeseen external events like e.g. the first World War that urged researchers and scientists as well as humanists to rethink the relationships between science and technique. This caused a shift in scientific thinking – a new awareness of the potentially destructive force of knowledge arouse – but no revolutionary changes in educational systems. Another big problem is the fact that politicians only really have an influence over regional, maybe national affairs. The economy at the same time acts global for quite a few years now. So even if a government would be able to present good alternative ideas, those would be (nearly) useless as long as they only concern one regional or national education system. In other words: A revolution in the educational sector is necessary, it must be conducted by a new generation and it has to be global.

Now, this kind of global revolution has to start at one point, and it should do so where all education starts: With the question of access to it. Most western epistemologists in the 20th century agreed on one fact: The driving force behind all sciences should be deeply democratic. This seems to have two main consequences:

1. The "world of knowledge" is open to everybody, all knowledge belongs to the public and is constantly controlled by it

2. Scientists must therefore be prepared for criticism and they can (or even have to!) be disabused over and over again

This is very important since sciences form a democratic reality, the reality we live in. But even more important is the ability of sciences to be formed by this reality. Societies have to decide what they consider to be right or wrong, in other words: what kind of knowledge they want to be taught, how they want to do this and most important, who they want to share their knowledge with, who they want to educate.

Every generation has to think about these categories anew and if a majority agrees on a revolution, these are the points we have to start

with. This means mainly, as explained above, to question everything we take for granted, to radically fight against the "tyranny of common sense". Some examples concerning the "who", the "acces"- problem (in Switzerland):

- Why is the age the most important criteria to form classes?
- Why is the nearest school considered to be the best one for a child?
- Why do we have marks?
- Why do good marks open the access to high schools, universities etc.?
- Why do mathematics count more than sports?
- Why is school free (— payed by taxpayers)?
- Why do we physically go to school instead of learning from home?
- Why do we have off on weekends?

The list could (and should) be much longer since asking this kind of questions allows to find the principles, thoughts and ideas behind the system. Many of them arouse out of a specific historic circumstances like e.g. the industrial revolution. Understanding those mechanisms is the best way to get rid of the "dogmas of the past". Still, questioning the common sense is very difficult: "Finding the things we take for granted is not easy – because we take them for granted", says Ken Robinson. The GPP Programme showed one way to cope with this problem: Thanks to the exchange with American students, we realised how different our educational systems are, what could be changed and why. One system does not necessarily have to learn from the other, but finding similarities and especially differences allows to find and define the categories that could be questioned. And more important: the intercultural dialogue not only helps to ask the crucial questions but also show possible alternatives that previously might have been beyond imagination.

NOTES

1. The whole talk by Ken Robinson: http://www.ted.com/talks/sir_ken_robinson_bring_on_the_revolution.html.

Teaching Revolution

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University of Basel

"Every education system in the world is being reformed at the moment and it is not enough. Reform is no use anymore, because that is simply improving a broken model. What we need is not evolution but revolution in education. This has to be transformed into something else."

Sir Ken Robinson, an internationally recognized leader in the development of education, expressed this important thought at the TED Conference in 2010 to stimulate teachers, of the present and of the future, and institutions to think about a new way to make education.

In this sense, we had the chance to think during the GPP experience with our Virginia Tech colleagues about new higher education models and systems that could improve the present ones that are not anymore up to date. Different where the topics that has been highlighted as important points that could drive the revolution in higher education: diversity, gender, tuitions, financial support, mentoring and last but not least digital teaching.

During our first GPP meeting in Basel (Input Seminar), I was fascinated by the talk given by Professor Shelli Fowler that was underlying the importance of making learning more accessible through pedagogy and new technology. Immediately I started thinking at my last years of study at the Universities in Italy and Switzerland and after a comparison I concluded that we definitively have to learn from how the US system is dealing and adapting to new technologies that in Europe are still less present in the daily life of a student. We are still taking notes with pen and papers, we discuss and ask question during lectures, we study on books; whereas in the US the classrooms are full with computers (one per student), discussions are mainly done on blogs, and online courses start to be available on internet.

The student generation that was born in the 80's, I am also part of it, had the chance to see the changing from the "book-era" to the "digital-era" and this is why we have to be the first that drive this change. We experienced both systems and we know their positive and negative aspects. We have to renovate the system and adapt it to the needs of the new student's generation, the "digital natives". They are used to learn and to think digitally and therefore the system has to use new technologies (i.e. computers, internet, blogs, social networks) to improve the teaching process at all levels. I firmly do not think that the "digital teaching" has to overcome the "classroom teaching", but for sure the combination of both could provide a better and deeper knowledge of the field of study. The students have to come to the lecture to have an interaction and discussion about the topics with the professors and the other students, but they can prepare themselves to the lecture watching the basics of the topic in an online course that is like reading a book (even tough the fashion of a book, with its smell and touch, will hopefully not get lost and will be still appreciated by the new generations). Moreover, online courses, which are more and more available for different universities (i.e. Coursera) give the chance to students to listen to the lecture done by experts in the field even if they are not part of the faculty of the University where they are learning. This is the way in which education can get global and maybe more exciting.

However, I hope that the individuality and identity of the Universities will be maintained, otherwise the student travelling will stop and the exchange of culture, thoughts and ideas will stay only online and not anymore real and social. I am sometimes afraid that we will end up in a room with our computer that will be our teacher, friend and mentor and that the new generation will not be anymore able to get in contact with other people. This is the reason why I think that mixing digital with classroom learning is the best way to improve the modern education system. Anyway, from my perspective, we still have to keep on thinking on how to better use the new technologies without having a negative impact on other important social aspect, which always should be preserved and enhanced.

Existence of core curriculums in higher education and their value to society

Margaret Duckson
Virginia Tech

Prior to visiting several universities in Switzerland, Politecnico di Milano in Italy, and Université de Strasbourg in France, I considered how to best research the similarities and differences between the institutions of higher education in Europe compared to those in the United States. More specifically, I wondered if a core curriculum in which students are required to take classes from a variety of disciplines to obtain a well-rounded education exists in European higher education or if students are "channeled" into only taking classes in their own field of study. In other words, are students exposed to an emphasis on interdisciplinary studies or do they never cross paths with other subjects? Secondly, if there is interdisciplinary education, do the sciences and humanities intertwine within it? Although I believe firmly in the fact that people should be highly proficient and knowledgeable in their specific field, I believe they also should be conversant in fundamental disciplines that will aid them in their everyday life and will contribute to them being a productive and well-educated member of society.

According to a 2006 report conducted on behalf of The Association of American Colleges and Universities (AAC&U) based on surveys among employers and recent college graduates, the majority were against a higher education system that narrowly focuses on providing knowledge and skills only in one specific field. Instead, the majority of respondents supported an undergraduate education that provides "a balance of a well-rounded education and knowledge and skills in a specific field" (AAC&U, 2006, p. 1). Many universities in the United States demand their undergraduate students fulfill credits in a broad range of fields to satisfy requirements for their core curriculum. This opportunity allows students to partake in a wide variety of courses in which they might otherwise never have considered taking. A general education can provide opportunities for students to make

connections across disciplines and may even steer them in the direction of their desired career path. As students enter their first year of college, they often do not have a clear idea of what they want to do with the rest of their lives. Taking courses in a variety of subjects allows students to expand their horizons and open new avenues not previously explored. Therefore, a well-rounded education bolstered by a core curriculum can be most beneficial in higher education.

At Virginia Tech, there exists Curriculum for Liberal Education Requirements, formerly known as the University Core Curriculum. These consist of seven distinct areas from across the university wherein students can choose from a variety of courses to complete the requirements towards their bachelor's degree. The areas include: 1) Writing and Discourse, 2) Ideas, Cultural Traditions, and Values, 3) Society and Human Behavior, 4) Scientific Reasoning and Discovery, 5) Quantitative and Symbolic Reasoning, 6) Creativity and Aesthetic Experience, and 7) Critical Issues in a Global Context. It should be noted that within these guidelines each bachelor's program is able to modify how many credits are required to come from specific areas. For example, a student studying Biological Sciences would need to earn eight credits of Scientific Reasoning and Discovery while another student studying History would only need six credits.

After examining the curricula of the visited European universities, it was discovered that Universität Zürich, the largest university in Switzerland, mandates neither a core curriculum nor a general education. Undergraduate students have three options they can choose from for their bachelor's degree, which is dependent on the program they are studying. These three options include: 1) one major subject plus electives, 2) one major subject plus one minor, or 3) one major subject plus two minors. However, some programs of study like Law do not offer a minor subject because the course structure is rigid and very competitive the first two years, during which time coursework is predetermined and students cannot take any electives. Moreover, Universität Zürich has cross-faculty and interdisciplinary research with the aim to promote collaboration within the institution and support the academic career development of young researchers. As such, professors are highly encouraged to be part of an interdisciplinary team in order to receive research funding.

Meanwhile, Eidgenössische Technische Hochschule Zürich (ETH Zürich) tries to integrate the humanities and social sciences into their hard sciences because they want students to have a well-rounded education when they graduate. For example, students enrolled in the Bachelor of Architecture program can take courses in the humanities and social sciences such as Mathematical Thought, Sociology, History of Art and Architecture, Law, Economics, etc. To complement one's studies in both the Bachelor of Civil Engineering and the Bachelor of Environmental Engineering programs, students can take a wide range of interdisciplinary subjects including social studies and the humanities which can be taken at either ETH Zürich or the nearby Universität Zürich. The Bachelor of Mathematics program is supplemented by students freely choosing courses of general education from the humanities, social, and political sciences. In order to obtain a Bachelor's in Materials Science, students must earn a total of four credit points from the humanities, social, and political sciences. Furthermore, for a Master's in Materials Science, a total of eight such credit points is required.

ETH Zürich offers an Interdisciplinary Science Bachelor that integrates the areas of Physical Chemistry, Biophysics, Biochemistry, and Nanotechnology that combine the classical subjects of

Chemistry, Physics, and Biology. Also, students who have earned a Bachelor in Electrical Engineering and Information Technology can enter an interdisciplinary Masters program in collaboration with the Department of Mechanical and Process Engineering such as Biomedical Engineering, Energy Science and Technology, Micro and Nanosystems, or Robotics, Systems, and Control. Lastly, similar to Food Science programs in the United States, the Institute of Food, Nutrition, and Health at ETH Zürich is interdisciplinary because students take classes in Biology, Chemistry, Mathematics, Physics, Economy, and Law. Hence, students obtaining a Bachelor of Food Science receive a somewhat well-rounded education, but they still lack the knowledge offered by courses in the humanities and liberal arts.

Two of the five mission statements of the Université de Strasbourg are "a strong emphasis on interdisciplinary studies" and "the dissemination of culture and scientific information." As stated by university president Alain Beretz, the Université de Strasbourg "strives to attain cross-disciplinarity" in order to foster "new research opportunities and produces courses that meet society's needs." In regards to research, during the time period (1968 to 2009) when three separate universities existed before the formation of the Université de Strasbourg, there was inter-university cooperation with jointly designed and managed projects between the sciences and between the humanities, legal, political, social, and technological fields of study. Likewise, Politecnico di Milano has the Alta Scuola Politecnica which is a joint program with Politecnico di Torino for 150 promising students each year who want to develop their interdisciplinary capability for leading and promoting innovation in the fields of Engineering, Architecture, and Design in the Master of Science programs. Also, at Scuola universitaria professionale della Svizzera italiana (SUPSI), Computer Science, Engineering Management, and Mechanical Engineering overlap in different areas and are considered interdisciplinary programs of study.

The Università della Svizzera italiana (USI) uses an interdisciplinary approach to higher education by combining different fields such as Computation Science with Mathematics and Informatics to create weather forecast simulations, solve joint issues, and dentistry problems. For example, one of the students who spoke to us at USI, Valentina Poletti, a Ph.D. student in the Faculty of Informatics, Computational Science, received her Bachelor's in Computer Science and Economics. On their website, the Faculty of Informatics states that it "aims to train informatics experts that are interdisciplinary in approach with abstract thinking and generalization skills, a sound knowledge in the application fields of information technologies, as wells as project-management and teamwork abilities." Additionally, students enrolled in the Bachelor of Architecture program at USI develop their theoretical and practical skills by taking courses in historical-humanistic and technical-scientific subjects covering the following subject areas: Theory of Arts and Architecture, Culture of the Territory, Philosophy, Construction and Technology, Structures, Ecology, Mathematics, and Computer Science. Both the historical-humanistic courses and the technical-scientific courses count for 25% of the overall coursework while Design Studio counts for the remaining 50%.

At the Universität Basel we learned that one of the major events in Europe in the past 20 years has been the move from a field or discipline to an institutional approach. In other words, there has been a movement towards a more interdisciplinary approach. The Institute of Exercise and Health Sciences at the Universität Basel offers three bachelors' degrees in which students can combine another subject like Economics into their course-

work. They also have interdisciplinary research seminars.

While at the Universität Zürich, Jay Siegel, Dean of Studies in the Faculty of Science and professor of Organic Chemistry made the comment that "students receive their liberal arts education before they come to university" and this allows them to "focus directly on their career path." However, we also heard from Daniel Widrig, a Ph.D. candidate in Biomedical Ethics in the Law Program, who made the statement that he obtained a very broad education and became well-educated during his bachelors' education. Rector Prof. Dr. Antonio Loprieno at Universität Basel made the observation that continental Europe wants to "train professionals." However, shouldn't this training consist, at least partially, of a combination of science and humanities at the bachelor level instead of solely leaving the responsibility at the matura level (equivalent to the high school level in the United States)?

In conclusion, while European universities do offer some interdisciplinary programs, they all seem to be in related fields, more specifically in the scientific fields because in the world we live in today an increasing number of specialists with solid basic training in several sciences are in high demand. Compared to the United States, it's the opposite in Europe with regard to how the first two years of a bachelors program is arranged. In the United States, students can take a broad range of classes, but in Europe if students desire to take electives in their program, they can only do so in the last two years. When asked about the reason why bachelor's programs do not require a core curriculum to provide students with a broad education in both the sciences and humanities, the explanation given by many students at the Swiss universities was because the general education is obtained at the matura level. However, could it not also be argued that we receive that type of education at the high school level in the United States? Nevertheless, if so, then the question becomes "is a broad education at the high school level actually making us well-rounded individuals in the global society?" or should there also exist a general education requirement at all institutions of higher education throughout the world?

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Metrics of successful higher education: Switzerland and the U.S.A.

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Rankings strive to reflect the accomplishments of institutions of higher education, and they can have a strong impact on the goals of an institution. Considering the vast number of institutions of higher education that are available today, each one must compete on a global scale for recognition, faculty, students, and funding. For better or worse, institutions that use rankings to demonstrate their accomplishments are attempting to fit into the descriptors chosen by the body that created the ranking. Traits that are valued by an institution of higher education as a whole (such as rankings) are then translated to what is important to professors and down to what activities students partake in during their education. For example in Switzerland and the U.S.A., if a university is gauged by its research, then faculty members are rewarded for research outputs and this becomes their primary focus. Even the students feel how their professors are drawn to research rather than teaching. When innovation is valued, then from the university level down to the professors and students, connections with industry partners and patents are sought. Even when an institution prides itself in its value of teaching, if that institution also desires to fit into the global market of higher education, research must be a strong consideration due to its significance in global rankings. Therefore, it is important to frame the discussion of how faculty members are measured starting with full consideration of how an institution as a whole measures its success.

Measures of success in institutions of higher education

It is common for an institution of higher education to measure its success in terms of rankings, the number of Nobel Laureates who have been associated with the institution, number of full professors, statistics describing alumni (such as graduation rates or job placement rates), student to faculty ratios, the number of obtained patents or inventions,

the number of formed spin off companies, specific research endpoints that are significant to society, research dollars, teacher salaries, time to degree, or accreditation by a federal, canton, or professional body.[1-2] Rector Prof. Dr. Antonio Loprieno of the Universität Basel mentioned during the 2012 Global Perspectives Program that even if institutions of higher education desire to focus their efforts on teaching, in order to fit into the global higher education market they must also define themselves based upon research accomplishments.[1] Even when a local market drives an institution it is difficult to ignore the importance of research as a measurement of success. At Scuola Universitaria Professionale della Svizzera Italiana (SUPSI) a great deal of money flows into the university from private companies. Success is identified in the eyes of the private businesses rather than in the rankings. These businesses still most highly value patents and inventions that resulted from research endpoints rather than future employees who were well educated in the classroom.[1] At the Universita della Svizzera Italiana (USI), a small institution of less than 3500 largely local students, research still holds a substantial weight in the institution's metrics for success. They must uphold both quality research and quality education to get students to pay the high tuition rates to attend.[1] The Politecnico di Milano (POLIMI) was a special case in this regard. Despite the focus on applied science and research, the Italian Ministry of Education requires compliance with regulations that uphold teaching quality.[1] Universities in the U.S.A. and Europe strive to be the best in a global market that values research, though only a very small fraction of the existing universities can actually attain this position when all are scored by the same standards (**Figure 1**). Only if an institution widely advertises a unique identity can it thrive under a different focus.[2] Why is research the ultimate goal of institutions of higher education rather than teaching? Do rankings rate research heavily because such is the global goal, or is it the global goal because it is ranked highly?

University Rankings

The *Times Higher Education* World University Rankings come from a UK organization that supplies information to higher education and research professionals covering intellectual developments and policy issues.[3] These rankings measure institutions by the following breakdown:

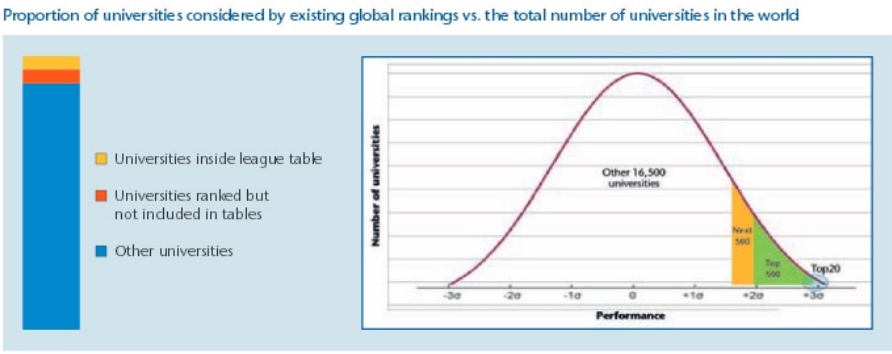

Figure 1. Only a very small portion of existing institutions of higher education make the top charts.[2] The metrics for measuring quality of the top universities may not be the ideal descriptors for universities on the lower end of the distribution chart. "Figure reprinted from reference 2 (© European University Association)." The copyright on the source states "All rights reserved. This information may be freely used and copied for non-commercial purposes, provided that the source is acknowledged (© European University Association)."

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- 30% teaching/learning environment
  - 15% of the total ranking measures responses from the Academic Reputation survey that documents the prestige of each institution according to academics across the world
  - 4.5% staff to student ratio
  - 2.5% ratio of PhD degrees awarded to bachelor degrees awarded
  - 6% number of PhDs awarded scaled by institution size
  - 2% the institution income scaled against academic staff members
- 30% research volume, income, and reputation
- 30% citations (research influence)
- 2.5% innovation recorded by industry income
- 7.5% international outlook in terms of staff, students, and research

Therefore, 62.5% is directly research related with an unknown amount of the 7.5% international outlook also concerning research. The teaching category is a mix of subjective indicators that could more closely relate to research quality rather than teaching. There is a chance that at an institution with more PhD students, professors are more interested in using their time to produce research outputs with the PhD students rather than think about the undergraduates they are teaching. It is hard to predict the amount of funding per undergraduate that is used to improve the learning environment rather than the research environment. It may even be that at a small university with less expensive research equipment, students must learn to be resourceful with tools that are more likely to be available in a work setting. If by teaching/learning environment, one hopes to emphasize how much new information is generated for the world by the institution and is now available to the undergraduates, then the *Times Higher Education* World University Rankings metric may be sufficient.

The Quacquarelli Symonds (QS) World University Rankings are produced by an organization whose mission is "to enable motivated people around the world to fulfill their potential by fostering international mobility, educational achievement and career development."[4] These rankings document the accomplishment of institutions of higher education by quantifying the following metrics:[4]

- 40% academic reputation from global survey (a survey asks respondents to name top domestic and international institutions with respect to research)
- 10% employer reputation from global survey
- 20% citations per faculty from SciVerse Scopus
- 20% faculty student ratio
- 5% proportion of international students
- 5% proportion of international faculty

The QS rankings directly measure 60% of each institution's accomplishment in terms of research, and it is debatable how little of the rest of the metric actually measures teaching quality.

The Academic Ranking of World Universities (ARWU) was developed by a center that studies world-class universities, initially to identify the standing of Chinese universities in the global market. This organization broadened their scope due to global attention to their transparent, scientifically sound, stable methods.[5] These rankings do no better in measuring teaching. It instead measures:

- the number of alumni and staff winning Nobel Prizes and Fields Medals
- the number of highly cited researchers selected by Thomson Scientific
- the number of articles published in journals of Nature and Science
- the number of articles indexed in Science Citation Index - Expanded and Social Sciences Citation Index

- the per capita performance with respect to the size of an institution

All but one of these metrics directly measures research.

These three rating scales were developed by distinct organizations and receive global attention for their work. It is logical that due to the subjective nature of evaluating teaching quality, the ranking formulas would involve more easily quantifiable measures such as the number of articles published in certain journals or citation indices, staff to student ratios, and alumni statistics. However, it is ridiculous to pretend that all universities should be measured under these research based metrics.[6-7] Furthermore, it is disappointing that in order to fit into the global market, institutions of higher education feel compelled to achieve primarily in the areas the rankings value. Uni Basel Rector Loprieno stated that before the Bologna Accords there were discussions of striving for improvements in teaching quality at his institution. However, with the Bologna Accords competition between neighboring institutions increased and an emphasis was placed on university global standings. Today Uni Basel works hard to achieve a place in the global market; the potential discussions of teaching quality improvements were erased from the priority list.[1]Uni Basel is not alone.

Possible quantifiable measures of teaching quality

New ideas for metrics of success are being developed to measure the quality of teaching at institutions of higher education. Metrics under consideration include the number of alumni who have won Nobel Prizes, faculty to student ratios, salaries of teachers, time to degree, student satisfaction surveys (CHE university ranking), learning outcomes such as generic skills or testing discipline specific sills (AHELO project), peer evaluations, or accountability goals.[2,6-9]

Due to the difficulty in ranking a science department equivalently to a humanities department, new rankings are considering breaking universities down to their departments rather than choosing a single value for the whole institution.[6] Such a system is demonstrated by the UK's www.unistats.com website that conveniently compiled student surveys and summaries along with statistics for each discipline.[6] Having a variety of metrics for a similar accomplishment can only improve the usefulness of such endpoints, especially when metrics can be subjective. However, when it comes to filing this information into a database and crunching it down to a single list of which universities (or departments) are performing better than the next, the more descriptive the metric, the more daunting the task. For example, it would be nice to evaluate each university or department based on its own, clear goals for undergraduate education using descriptive evidence that demonstrates the goals are being attained, but to actually compile this data into a format that would be useful to policy makers who desire a single number for each institution would require significant time and resources.[9]

Oversimplification can be crippling, as is demonstrated by the legend of *The Blind Men and the Elephant* by John Godfrey Saxe.[2] It's clear that one score doesn't fit all.[6] It may be more appropriate to classify institutions into categories, each with its own type of metric. However, higher education can only reach its full potential when we learn to create a thriving ecosystem of institutions, evaluating its health and the overall environmental quality as a whole.

"My-rankings"

Personalizing rankings to fit the unique needs of each user (students, governments, policy makers,

investors, teachers, or other universities) could help universities to work together as an ecosystem rather than compete for a single role. A few organizations have been working towards this task, including the International Ranking Expert group that published the *Berlin Principles on Ranking of Higher Education Institutions* in May 2006, the Centrum für Hochschulentwicklung (CHE) who ranked education, research, and innovations separately, the Quacquarelli Symonds firm who wants to develop an "interactive ranking" so each user can put in their own criteria, and the *Times Higher Education* has an iPhone and iPod application to facilitate personalized rankings.[3,6-7]

Impact of rankings on teaching quality

Teaching quality at universities in Switzerland is often measured by course evaluations, individual evaluations, and teaching awards.[1]A few university representatives mentioned that a hiring committee might consider teaching and service, but it is not required unless implicitly stated in the institution's identity. Departments work hard to select professors carefully enough that they do not have to throw them out after the tenure review. After tenure influencing a faculty member's teaching quality becomes very difficult. Of course institutions with a focus on quality teaching or those who must comply with the Italian ministry's education regulations have an easier time encouraging quality teaching after tenure. Incentives such as teaching awards can be used as rewards for quality teaching, but not all faculty members seek such opportunities. Teaching evaluations exist at many institutions in both Switzerland and the U.S.A., but there is not often a hard consequence for any who receive poor evaluations.[1]

In general, teaching is not as valued because institutions do not feel they benefit directly from emphasizing teaching. Faculty are rewarded for research rather than other activities, so their priorities reflect this.[10] Departments must make their own choice whether to reward faculty for quality teaching and set up an environment where such an emphasis accepted and valued.[11] Rewards can be simple, but without transparency of quality teaching goals, the publish or perish mentality is strong.[10-11]

Future outlook

Rankings today define the quality of higher education institutions almost exclusively through research outputs. New metrics are in development to more strongly value and more successfully reflect teaching quality. Training is starting to become available for faculty who seek out the opportunity to learn to become effective educators.[1] School is no longer required to transfer information from one generation to the next, but rather to empower students to become innovative, creative, adaptable problem solvers.[12] One method of teaching, one method of researching, and one method of evaluating higher education cannot fit every case in such a world. With encouragement from new pedagogical methods utilized by teachers who are stimulated to be quality educators by university visions that are evaluated logically, effectively, and creatively, higher education will become a healthy ecosystem.

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Co-Evolving Notions of Student Involvement: A Look at How American and European Perceptions May be Evolving with New Trends in Higher Education

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While wandering the campus of a European university during the weekend, there are some notable differences from the average weekend at an American school. One of the most apparent differences is the lack of a student presence. The absence of what we commonly see at Virginia Tech and other four-year universities in the United States—students studying throughout campus or playing a sport in a grassy area—was startling and it brought up some questions about the perceptions students in Europe had of their university compared with the American students' view. In this paper, I will describe three differences I observed between European and American Universities—student housing, student activities, and "branding." Throughout, I will speculate on social reasons for these observations based on comments from European students, professors and administrators as well as my perceptions. Then I will finish with some thoughts regarding the possible future trajectory of student perception of universities.

One of the largest differences noticed between university life in the U.S. and Europe is that in the United States, most students "go away to school." It is seen as a rite of passage where they leave their home to live in a scholarly community and learn about themselves and the world. At Virginia Tech, about 26% of undergraduate students are international or from out of state and about 36% of them live on-campus.[1] They are forced to make new friends and carve out a place for themselves in their new environment. In contrast, in Europe, most students stay at home with their families and commute. At Universität Zürich, it was mentioned that over 90% of students are local. They spend time with the same childhood friends and participate in the same activities. At the Eidgenössische Technische Hochschule Zürich (ETH) an international graduate student mentioned that there was not much interest in promoting student activities because everyone goes home instead of staying

on campus. While American students are forming a new attachment to their university as a "home," European students retain their childhood house and family as their "home." To summarize the perception of the university experience is about the education and the career path for European students and about a rite of passage into adulthood and independence in addition to the education for the American student.

A second marked difference between the two systems is the social activities. Walking anywhere on campus at most American four-year universities, students are assaulted from all angles with information and promotions of new student activities and organizations. During orientation, students are encouraged to become as involved as possible in their campus community. At European schools, there was not the same emphasis on participation. Part of this goes back to the absence of the "going away to school" idea where students join organizations and programs to become a part of something and engage in something to fill their free time since they are away from home. The organizations become almost a substitute to what would normally be spent as home life. While students in Europe may not have a barrage of student organizations pushing for them to join and form a stronger connection with their university, there still seems to be a strong connection with the departments, most strongly among the graduate students. According to one student at ETH, a number of social get-togethers with members of the department and create chances to spend time with each other outside of the classroom or laboratory. Also at ETH, we learned about the Akademicsche Vereinigung des Mittelbaus der ETH Zürich (Academic Association of Scientific Staff or AVETH) which is similar to the graduate student associations at Virginia Tech in that they sponsor programs to help graduate students acclimate to their new environment, assist with career planning, and coordinate social programs like excursions to festivals and skiing. The level of involvement in university programs in Europe seems to be more like what an American student attending a community college or two-year university may experience rather than a traditional four-year university. Once again, the social and family dynamic plays a large role in student involvement.

The last noticeable difference is the lack of student "gear." When American students go away to a four-year university, they can often be seen wearing university apparel because the American institutions have a habit of "branding" themselves. Universities become marketable, a unit to be a part of, and something to be worn and associated with. There becomes a whole slew of university items that become available from clothing, to kitchenware, to school supplies. The branding is not just the material but also the perception that makes one school more prestigious than the other or more desirable to attend. In Europe, we generally do not see this sort of thing except for very recently there have been some universities like Politecnico di Milano, Scuola universitaria professionale della Svizzera italiana (SUPSI), and Università della Svizzera italiana (USI), each of which have varying degrees of institution-associated products, gifts, and clothing. One of the reasons that "branding" is so useful for American universities is because it serves not only as advertising but as a social group that others may want to be a part of. It is part of a university's attempt to get students to choose to attend as opposed to another institution. Even when it is not a university offering clothing, branding still occurs in community colleges and online programs to entice students to choose their institution instead of the thousands of other choices in the U.S. In contrast, students in Europe generally go to the local university so advertising and social marketing is not necessary. It was evident by talking to administrators and students alike

that most students prefer to stay at home and will go to their canton's school rather than going somewhere else so no advertising or public perception is really needed. One of the exceptions was USI who had a large international student base and the only university that we saw students wearing university t-shirts. In the case of USI, the use of "branding" may help them draw students to their relatively young school. We may also start to see this trend with other institutions as government purse strings become tighter with economic problems.

Higher education is constantly evolving and in the coming years, as technology continues to advance, we will see dramatic changes in the ways students participate in their higher education. In the United States, there are more online programs being offered and in Europe there is a shift from loyalty to a mentor or a department to the university. It almost seems as though the different systems are becoming more similar with regard to student perception and involvement than before because of these factors.

As we examine the future of higher education, we can see the shift of learning from in-person to online. There are many colleges that are being formed that offer online-only degrees which completely changes the landscape of not just the education itself but also the interaction that students would have with each other. According to *The Chronicle of Higher Education*, the number of students attending online classes is projected to go up to 3.79 million by 2014.[2] It will be interesting to see what this means in a country where the four year university alma mater is of so much significance to many.

Also in the European system, there is a shift from the discipline to institutional identity. Rector Prof. Dr. Antonio Loprieno of the Universität Basel said there is a shift from the "Doktor-Fater" concept of the past to more of the "Alma Mater" perception in which the student has more of a connection to the university than solely a mentor or professor. In our discussion with Rector Loprieno and Basel students, it was mentioned that traditionally in Europe, loyalty is not to the university but to the nation and canton. There is no reason to go to a particular university except that it was closest or the first one to offer the position. It will be interesting to see what the shift in perception will mean for student enrollment and participation in European universities.

In conclusion, there are wide variations in the traditional American and European student-university relationship. Neither system is better than the other, just different and often based on family and social structure. Each system offers students different opportunities and have different philosophies but in both a good all-around education is important. The extra activities and student "gear" is not necessary for a quality education. Rather those are used as tools in giving the students a sense of community and commitment that is not really necessary for the European students since they already have their family and community close by. As we see a movement toward online education and university budget cuts, along with rising costs of attendance at four-year universities, we may see a shift away from what can often be expensive student activities and "branding" campaigns. More students may opt to behave in a more European manner and to stay at home to get their education to save money. It will be interesting to see how students' interactions and feelings towards their university changes in the coming years.

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A Comparison of Alumni Relations

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The Alumni Association at Virginia Tech has always been a part of my life. My father, a Virginia Tech graduate, always enjoyed coming back to the campus and Alumni Association sponsored events were always a good reason to do that. When it came time to choose a university, Virginia Tech already felt like home. After my own graduation, I couldn't wait to put that VT alumni sticker on the back of my car. I came to realize that after graduation the "university experience" does not have to end. As alumni, we not only have the opportunity to give back to our universities but may also continue to benefit from and enjoy much of what the school has to offer.

These realizations lead me to observe how the universities we visited in Italy, France, and Switzerland interacted with their students after graduation. While reflecting on this topic before the trip, I assumed that the size and age of the university would most likely dictate the extent of their alumni associations. We were extremely lucky to visit universities young and old, large and small, and I found there is huge variation in the scale of European alumni associations and in the kinds of alumni programs offered.

At Virginia Tech the Alumni Association is an independent non-profit organization on campus with over 30 staff members. The staff is supported through the Annual Fund, merchandising, group tours, and the VT Foundation. The association organizes everything from homecomings, reunions, class rings, children's programs, vacations abroad, and trips to sporting events. Alumni can sign up to receive daily emails, online newsletters, and a seasonal magazine. Additionally, career services don't end after graduation. Alumni looking for new jobs or a change of career can connect with other alumni through websites. While none of the universities we visited had associations quite as comprehensive as Virginia Tech, I did discover

many similar components as well as some novel ideas.

Many of the universities we visited had programs in place for alumni grouped by their individual faculties rather than at an institutional level. For example, Alumni UZH at ät Zürich serves as an umbrella organization for active alumni organizations from 10 different faculties and international groups. The Alumni of the Faculty of Law at UZH purchased a house in Zürich to house current (usually international) law students and provide a facility for alumni and students to interact. This trend agrees with what Prof. Dr. Antonio Loprieno, Rector, Universität Basel, described in his opening remarks to our group. Prof. Dr. Loprieno mentioned a recent evolution in European higher education from a discipline-based approach to an institutional-based approach. He described how students were shifting from a singular focus on their faculty to a more comprehensive conception of belong to the larger institution. This shift can be seen in the recent development of programs available to all alumni, independent of faculty. Basel and USI (Università della Svizzera italiana)both allow all local alumni to continue to use their sports facilities. ETH Zürich's alumni organization plans homecoming events, brunches, symphonies, and this year will be hosting their 7th annual themed ball for all alumni. While Politecnico di Milano organizes their reunions based on faculty, their alumni association also holds events like cocktail hours for alumni all over the world.

Connecting alumni to the current students seems to be an important goal of the European alumni associations as well. This relationship serves as a two-way street where students develop potential career opportunities and alumni gain new researchers for their companies. At (La Scuola universitaria professionale della Svizzera italiana), the Master of Science in Engineering faculty formed an alumni organization to specifically facilitate contact between students and alumni. This corporate alumni student relationship is also heavily emphasized at USI where there is a focus on potential research collaboration between alumni from different faculties.

I found a wide variety in the types of alumni programs available at the universities we visited. As expected, the schools we visited that were more research based had stronger programs in place to link alumni with current students for collaboration. The older universities more steeped in tradition seemed to rely on individual faculties to organize alumni programs. One of the oldest and largest universities that we visited, l'Université de Strasbourg, did not have a formally developed alumni network at the time of our visit. In his presentation to our group, President Alain Beretz mentioned that tracking after graduation and communication with alumni was very important and in development. While doing research for this paper, I found that on October 2, 2012, l'Université de Strasbourg announced their formal online network for alumni with an emphasis on the exchange of knowledge throughout their entire community.

The state of alumni organizations in European and American universities is currently evolving as new technology allows for greater communication. As these programs continue to grow stronger and more comprehensive perhaps one day these networks may contribute to collaborations on a global scale.

Research Funding in Swiss Higher Education Institutes: Observations of an American

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Research, and the general process of obtaining research funding, is often perceived as intimidating (and sometimes downright frightening) to those employed at U.S. higher education institutions. As an outsider with a unique opportunity to peer into research funding processes in Switzerland, I strove to understand how these mechanisms are typically perceived, obtained, and employed in Swiss institutions of higher education. A large focus of the Global Perspectives Program is to gain a broader understanding of how basic components of higher education vary in different countries. The program was originally developed with the purpose of providing Virginia Tech graduate students a greater understanding of global higher education, particularly in Europe. As part of this mission, I found it increasingly necessary to develop a more complete grasp of how the research process works in European universities.

Research collaboration, particularly when interdisciplinary or international, is a topic that often attracts much attention. Considering Virginia Tech's partnerships and collaborations with Swiss higher education institutions, it seems a necessary service to map out the logistics of how Swiss researchers obtain funding at these institutions and where this funding typically comes from. Even though the issue of obtaining research funding is not usually a topic that is immediately alluring for those interested in a program such as this, it is both functional and useful for establishing a conceptual platform for future international collaborations. However, for the scope of this article it is simply not possible for me to provide a complete report on such a complex and multifaceted process. Therefore, the following will focus on a broad introduction to the research climate of Swiss universities, specifically where their funding traditionally comes from. Interspersed will be my own observations and experiences that comprised this learning process. While this contribution will by no means be

an exhaustive account of all the mechanisms and avenues for obtaining research funding, it should still serve as a meaningful introduction for those unfamiliar with the process.

Most basic research in Switzerland (similar to the U.S.) is conducted at research universities, while the rest is mostly conducted at places such as universities of applied sciences, medical research institutes, and non-university affiliated research institutions. Switzerland has ten cantonal universities and two federal institutes of technology as well as a number of other specialized universities. Each touts research as one of its primary foci. However, the sources of funding can differ substantially across many of these institutions. In terms of overall funding, the cantonal universities receive a substantial portion of their budget from the taxes of their own cantons and a smaller portion from federal taxes. This is quite similar to the state support in the U.S. system for state universities. However, the proportion of cantonal funding in Switzerland is generally greater than the state support in the U.S. Switzerland's cantonal universities typically receive 50% of their overall budget from cantonal taxes. The U.S. state universities, on average, receive less than a quarter of their funding from state-level taxation. In contrast, the two Swiss federal institutes obtain their funding primarily from federal taxes; none comes from canton-level taxation. Non-cantonal education institutions tend to rely on tuition fees, community partnerships, applied research funding projects, and other merit-based federal funding options.

These sources of university funding alone can contribute handsomely to some programs of research. In the cantonal universities and federal institutes, new faculty members often receive generous financial packages to create their own programs of research. This package may include funding for multiple graduate students, an administrative assistant, as well as a postdoctoral researcher. Additional money for equipment costs may also be included in this package. This endowment package is designed to aid the development of new faculty members' programs of research and helps facilitate future funding opportunities from government agencies.

After the original endowment package is exhausted, competitive sources of funding contribute the majority of money to most developed programs of research. This is quite similar to how research funding is provided in the U.S. The bulk of research is supported by federal funding, which can be obtained via grants through the Swiss National Science Foundation (SNSF). The SNSF is the primary federal funding agency that appears to be equivalent to the combination of the U.S. National Science Foundation (NSF) and the National Institutes of Health (NIH). The mandated mission of the SNSF is to provide competitive research funding to a broad range of disciplines, "from philosophy and biology to the nanosciences and medicine." The SNSF provides funding on a biannual cycle.

The SNSF also is quite generous to early faculty. It boasts of providing 80% of funding to researchers under the age of 35. The SNSF is also sensitive to diversity discrepancies in funding. Even though higher education institutes in Switzerland do not perceive themselves to have the same diversity issues that face the U.S., the SNSF is quite cognizant of differences in opportunities for female researchers, and consequently provide several funding avenues specifically directed towards women, through the Marie Heim-Vögtlin subsidy. In fact, one of the SNSF's recently restructured aims is to increase the overall number of female researchers, which remains admittedly low.

Although the SNSF is the primary funding agency

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in Switzerland, it is not the only major source of funding for research universities. Another funding agency that Swiss researchers successfully draw from is the European Research Council (ERC). The ERC's budget comes mostly from select members of the European Union (EU), but an additional dozen countries that do not have EU membership also contribute funds. The main goal of the ERC is "to encourage high quality research in Europe through competitive funding." The ERC exists to complement existing research funding activities, such as those provided by national research funding agencies. Although Switzerland is not part of the European Union, they still are able to receive funding through several different mechanisms of the ERC, notably, the ERC Starting Grant and the ERC Advanced Grant. Researchers at Eidgenössische Technische Hochschule Zürich (ETH Zürich) have been especially successful in receiving grants from these funding sources. Funding opportunities outside of the SNSF and ERC exist, but these opportunities make up a small amount of the total research funding in Swiss universities and will not be addressed herein. It should be noted that the applied sciences universities generally receive the bulk of their funding directly from their industrial or community partnerships.

Research funding at Swiss universities is assigned on a competitive basis. However, it appears that faculty members with relatively well-established programs of research are likely to continue receiving funding based on their past merits more so than in U.S. laboratories. During the Global Perspectives Program we were fortunate enough to interact with a faculty member at the Universität Zürich who had a long history of government funded research in the U.S. before coming to Switzerland and establishing another well-funded program of research. He generally promoted the idea that continued grant success is much higher in Switzerland. Since there are only 6-7 major research universities that are competitive for federal funding, funding committees at the SNSF usually have a good understanding of how many applications they will receive and consequently, how many (and whom) they intend to fund. Young researchers still face challenges in obtaining this funding, but more established researchers are likely to receive consistent grant funding.

Although research productivity is clearly important for Swiss faculty, they do not appear to be as strongly driven to obtain and maintain such well-funded programs of research from university-applied pressure. This dynamic, at least superficially, seems quite different than at research universities in the U.S. This is likely a byproduct of a core budget that is largely supported by cantonal funding. The top universities in the U.S. are largely subject to this pressure considering how much of the institution's budget is dependent on the maintenance of external funding. Regardless of reasons behind this difference, the overall attitude towards research in Swiss universities seems to be less driven by a workaholic, deadline-driven, motive than in the U.S. In conversation with a U.S. transplant faculty member at arguably the most prolific research institute in Switzerland, ETH Zürich, we gained insight about the Swiss faculty members' general appreciation for holidays and time off from work. It is possible that the differences that we perceived are deeply instilled in the research culture. Even the SNSF posits one of its aims is,"improve the balance between researchers' professional and family lives." Even with this cultural attitude of work-life balance, Switzerland boasts the most productive scientists in the world in terms of publications per person.

Research is stressed as a vital pursuit in basically all Swiss institutes. It is generally understood that reputation, at both the university and the national level, is largely dependent on research productivity

and innovations. Swiss universities and the SNSF aim to keep Switzerland at a high level of research productivity and keep its place among leaders of many fields at the international level. This focus is by no means lost on the Swiss higher education administrators. In national and international rankings, universities are regularly viewed in terms of their research productivity, and although it is common in the U.S. to rank higher education institutes based off the quality, productivity, and volume of funding in research, the Swiss genuinely do not appear to view their institutions in this light. There is clearly a nationalistic pride in the Swiss education system as a whole, and the majority of faculty and students claim to view all Swiss universities as more-or-less equal (at least in terms of the quality of education received). This may largely explain why most students attend universities that are either in their own canton (or a nearby one if their home canton does not contain a university).

The Takeaway

When viewed side-by-side, the Swiss and U.S. paths towards research funding do not appear to be much different. While proportions differ, the sources are funding are relatively similar. Research is largely funded through competitive federal grants and largely takes place at higher education institutions. The research climate appears to be similarly structured and similarly competitive. However, the level of financial support at Swiss universities (at least upon initial hiring) appears to contribute more breathing room while also preventing immediate dependence on acquiring competitive government-funding to establish a program of research . We interacted with a doctoral student who openly admitted to only working Monday to Friday on a basic 9-5 schedule…in front of her advisor! This case exemplifies what may be understood as a climate for success that is not dependent on constant pressures of external funding.

If the ultimate goal of those reading this is to better understand the Swiss research climate for potential future collaborations, then the takeaway should be that few functional differences exist. These two countries have very similar systems and specific mechanisms for providing research funding. The most apparent differences appear to be in the appraisals of the research funding process and the attitudes toward how work-life balance interacts with funding attainment. It is quite possible that U.S. researchers may even benefit from Swiss collaborations by simply gaining more insight into the attitudes surrounding the Swiss research climate.

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Supporting Transition: A View on First-Year Experiences

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Going to university is like learning a new language.
Professor Neenah Estrella-Luna, North Eastern University

Introduction

In the Global Perspectives Program 2012, I decided to take a closer look on first-year experiences. My interest in this field stems from my own teaching activities. For seven years I've been teaching first-year courses at the University of Basel Law School. Every year I see that university is not the simple continuation of high school. It is a whole new world and a whole new life. Students experience a transition. We need to support their transition in order to get good and successful students that grow to be good academics and practitioners later.

The term "first-year experience" is an umbrella term referring to a variety of institutional activities that aim at supporting the transition from high school to university. Calderon and Nutt discern seven groups of activities.[1]

- Pre entry activities, such as bridge and pathway programs.
- Activities related to induction and transition, such as welcome events and student peer mentoring.
- Skills development activities, such as courses on learning strategies.
- Academic and social support first-year and beyond, meaning consultation services.
- Holistic first-year strategies, such as induction courses over a longer timeframe.
- Building relationships, such as activities that foster academic or social networks.
- Institutional research, meaning research universities conduct about their student population and about the obstacles their students face in the transition to university.

As this enumeration shows, a higher education institution's first-year experience is a cluster consisting of various courses, programs and services. Therefore, it was not possible within the Global Perspectives Program to conduct a

comprehensive in-depth research on the first-year activities of the institutions we visited. Instead, I could only gather exemplary information about specific activities. My investigation method was very simple. When we visited universities in Boston and Virginia, I would just ask the representatives we met, whether and what they could tell me about first-year experience in their institution. Betsy O. Barefoot's remark that "first-year programs often have a single champion rather than broad-based institutional support" held true.[2] University representatives would just tell me about the one program or service they knew about. Thus, my account is highly selective and something coincidental adheres to it. I report what a few people at two US universities told me about specific programs. What I found out in the US, I compare again with a small snippet from Switzerland. With the one department at the one university I know: the University of Basel Law School.

In the second section I will briefly highlight a few findings from research on first-year experience. Then I outline the activities I learned about in the US. Section four deals with first-years activities at the University of Basel. Before I come to my concluding remarks, I compare first-year experience in the US and Switzerland and try to find an explanation for existing differences.

Research on First-Year Experience

Most array of first-year experience research was conducted in and on the US and the UK. In the US, there is even a journal on the issue.[3] It is interesting to see that First-year activities attracted scholarly interest and institutional recognition only in the late-twentieth-century as the student body became more and more diverse.[4] Upcraft and Gardner describe the increased attention to improve the first college-year as a "grass-roots movement."[5] It is far beyond the scope of this paper to conduct a review of the existing literature on first-year experience.[6] I will in this section point out three findings of this literature I deem interesting in the light of my experience with first-year activities in the US and Switzerland.

First, students need help in adapting to university life and becoming autonomous learners. Fazey and Fazey found that students in general have a positive attitude towards autonomous learning and are motivated to become autonomous learners.[7] However, as the research of Pokorny and Pokorny shows, students need time to adjust and they need help.[8] Thus, research supports the personal experience of many a first-year teacher that we need to help our students in their transition.

Turning from the first-year activities yes-or-no question to the how question, there is an impressive amount of literature on good first-year practice.[9] This literature leads me to the second and third finding I like to highlight. Second, induction activities prove to be important. However, they are delicate to design and risk providing students with too much of the wrong information at the wrong time. The result is that induction programs might undermine their own purpose and leave students behind more confused than enlightened by an information overload.[10] Therefore we need to design a gradual induction process that allows for enough time.[11]

Third, skills development is best contextualized with the subject-matter and embedded in the curriculum rather than being taught in a standalone workshop or course.[12]

Activities at Tufts and the University of Virginia

When I dropped the expression first-year experience in our conversations at Tufts and University of Virginia, I would hear in a rather

general way about free tutorage to teach study skills, special programs for mature students or first generation college students, support for students with socio-economic issues, bridge programs, summer programs, transition programs social services, weekly lunch talks witch freshmen and sophomores and the like. However, we could not look in depth at all these programs and services. We lacked time and knowledge about the programs to go into details. Instead the discussion focused on those first-year activities in which the present university representatives had certain insights. Therefore, I want to highlight two first-year activities: the bridge programs at Tufts and the Mentoring Institute at UVA.

At Tufts, I had the opportunity to talk to Robert Mack[13] and Travis Brown[14] who are responsible for bridge programs that Tufts offers to high school students. Brown is in charge for the BEST program. BEST stands for Bridge to Engineering at Tufts. Actually, the title is too narrow. The program is not only for future engineers, but for students in all STEM (science, technology, engineering and mathematics) fields. BLAST, under the guidance of Robert Mack, is its counterpart in liberal arts.[15] Both programs start six week before the semester begins. They are limited to a small group of students: fourteen in BEST, twenty-two in BLAST. Eligibility is not by grades or GPA cut-offs. The students selected for the programs are normally first generation college students, receive financial aid and are the first of their high schools who have been admitted to Tufts. In the programs, students take two courses for credit. One might wonder why the focus of the programs lies in attending courses students have to attend anyway within their freshman year. The advantage of the program is that students can do the courses within a more structured framework and in small groups that allow for more individualized attention and support. It allows them to concentrate on these two courses only and eases the burden of the coursework for the rest of the year. Besides these courses, the students also attend academic and college life workshops in order to learn about the culture of college and the expectations towards them. It has to be stressed that neither BLAST nor BEST are remedial programs. They are designed to help students in their transition to university, to adjust to college life. Further, the programs bring together people who are in the same situation and help them to build a support group.

The Mentoring Institute at UVA is a first-year program for graduate students. It stands open to students that belong to marginalized groups in graduate studies. The program works through fostering faculty-student relationships. It pairs a student with a more advanced student who serves as a coach and a faculty. Coach and faculty are in a different field from the student. The purpose is that students get an idea of different lifelines. There are activities through the whole academic year and participants communicate weekly or biweekly. What is most fascinating about the program is that it is conceptualized as a two way street. On the one hand, students belonging to marginalized groups get mentoring and support so they can navigate through graduate school successfully. On the other hand, faculty members serving as mentors develop skills in working with disadvantaged groups. They get an idea about the challenges those students face in their everyday university life. In 2007, the program received the prestigious Council of Graduate Schools Award.

Activities at the University of Basel

Also at the University of Basel, first-year experience is to a large extent a bottom-up matter. There is no comprehensive first-year strategy. A few people within the departments develop and conduct activities. At least, the University's Teaching Committee conducts a small-scale

project on first-year experience. The project is a rather descriptive stock-taking exercise. The Committee wants to know form the departments about their first-year experience programs and services. The project pursues the goal to compile a best practice list.

There are two pre entry services offered by the University and the departments in collaboration. Both services are not actually bridge programs as the ones offered at Tufts. They aim at informing high school student's decision what and where to study. The Studying Guidance Services organize information evenings in autumn. Here high school seniors meet with professors, administrative staff, former and present students. They get first information about the department, the curriculum and employment prospects. In January, the University opens the door for the high school students' day. Here, the students attend lectures, chat with assistants about studying and talk with practitioners about their everyday professional life.

At the Law School, we can distinguish two kinds of first-year activities that take place at a different time in the academic year and fulfill different functions: the freshmen's week and some first-year courses.

For a long time now, the Law School has offered a special introduction program at the first two days of the bachelor study. In the last two years, this program has been extend on the initiative of and in collaboration with the Law Students Club to what is known now as the freshmen's week. I don't want to set out the program in detail. The freshmen's week combines induction and transition with building relationships. The faculty still offers the introduction courses in the first two days and the Law Students Club organizes guided tours to the library, a BBQ and a party. The week ends with a hike and drinks and snacks. Most freshmen I asked appreciated the freshmen's week. They felt warmly welcome at the Law School and got the impression that they are taken seriously and that the Law Schools cares about them. Further, they welcomed the opportunity for building relationships. On the other hand, they agreed that in the introduction courses, there was too much of the wrong information at the wrong time. The Law School seemed to have stepped into the information overload trap. Further, the freshmen's' week also provides an example of a lack of coordination and institutionalization of first-year activities. Two weeks later, a professor conducted guided tours to the library as an integrated part of his course. Thus there is still some fine tuning to be done.

After the freshmen's week, the Law School supports the transition with two courses that are primarily aimed at skills development. First, the three big courses do not only consist of lectures but also of small group tutorages.[16] A small group means 20 to 30 people as opposed to around 250 in the lectures. These tutorages mainly serve at teaching students how to apply their knowledge in order to solve legal problems. This ability is indispensable in order to pass the exams at the end of the first-year. Apart from skills development the small size of the group allows for a more individualized support, also regarding question outside the subject matter of the course such as about university life or the curriculum. The strength of these tutorages is that they integrate skills development with the subject matter of the courses. Students rate these them as invaluable and crucial for their success in the first-year exam. They regularly deem the tutorages amongst the most useful courses in the curriculum.

Second, there is a mandatory course on legal writing and working methods. I welcome that the Law School acknowledges that students need

training in legal working methods. However, the course suffers from its design in so far, that writing styles and working methods are taught in a rather theoretical way. Students are told how to write, but they do not write in the course. It is important to find a way to integrate the development of legal writing and working skills better in the curriculum.

Comparison USA – Switzerland

I got the impression, that the need and the importance of first-year activities are more acknowledged and that the activities are further developed in the US than in Switzerland. This is also reflected in the fact that in Switzerland, there is hardly any research on the topic, while in the US there is even a journal on it. The biggest difference I found was that in the US there are an impressively large number of first-year activities for specific students or specific groups of students such as mature students or first generation college students.[17] In Switzerland first-year activities are normally addressed to the student body as a whole. Thus, we must introduce a new dimension to distinguish first-year activities. The categories I listed in the introduction relate to the content and the goal of the activities. The new dimension I suggest relates to the addressees of the activities. We should distinguish general and targeted first-year activities.

Probably, the targeted first-year activities were overrepresented in our discussions at Tufts and UVA. If so, the reason might be that diversity was the umbrella topic of our whole visit to the US. Thus, the aspect of diversity shed a light on every issue we discussed. Therefore, when I asked about first-year activities, these targeted programs that aim increasing diversity and handling existing diversity first came to people's minds. To get the image right, there are also general first-year activities in the US. To name one example, the University of Virginia's College at Wise requires all first-year students to complete a freshman seminar. The class focuses on teaching academic skills and introducing students to academic life. Students are provided an advisor. Advisors and students meet regularly in order to address all kind of transition issues.

This leads us to another difference I experienced. I got the impression that first-year activities in the US are more personalized in so far as they often involve a form of personal mentoring or advising. As the example above shows, this is not only true for targeted activities, where it is somewhat obvious, but also for general activities. When teaching first-year tutorages, I often grew into the role of a personal advisor for some students. However, this position is not institutionalized. Whether a tutor also accepts an advising position depends on how he interprets his role as a tutor and whether he is willing to do some (unpaid) extra work.

I found four reasons that root in some of the general differences between the US and the Swiss higher education system that might help explaining these differences.

First, going to university has a much bigger impact on one's life in the US than in Switzerland. This is on the one hand because traditional students are significantly younger in the US. A traditional student in the US is 17 to 18 years old when he enters college, while in Switzerland people start studying normally at the age of 19 to 21.[18] Therefore it might be more obvious in the US that students need support in their transition. On the other hand, in the US, your life normally changes dramatically when you start college. You probably move some hundred miles away from home. You enter a totally new social environment. You do not only study on campus, but you sleep there, you

eat there, you do sports there, you live there. In Switzerland, university does not have such a big influence on students' everyday life. Students often stay at their place or at least they go back there on weekends, they are still in their old sports club or join a new one outside university. Even though they also enter a new social environment, this is often in completion and not in place of the old one. Thus, programs that support students in building their new social environment are less important in Switzerland than in the US.[19]

Second, the US educational landscape faces the problem that due to the differences in the quality of high schools, not all high school graduates are college-ready. This is one of the main reasons why universities started to design bridge programs. As Carmen Lowe[20] at Tufts put it: "The origins of bridge programs lie in the fact that many qualified student only lack that their high school did not offer a certain course." Even though high schools in Switzerland might not be equal, they are of equal value. The problem that high school graduates are not college-ready because of a lack of quality of their high school does hardly exist there. Thus, there really might be a lesser need for bridge programs and the like in Switzerland than in the US. Still, as the example of BEST and BLAST show, bridge programs can fulfill different functions than just compensate for lacunae of one's high school education.

Third, noting that first-year experiences are also seen as a tool to manage diversity, one also has to consider that in the US there is a broader and more conscious approach to diversity issues.[21] In the US, the prevalent diversity issues are race, gender and socio-economic status. In Switzerland, the diversity question focuses a lot on gender. Generally, in Switzerland, we have a very egalitarian perspective on society and access to (higher) education in particular. This might lead people in Switzerland to overlook existing diversity issues. The different perception of diversity might especially explain why in Switzerland there are significantly less targeted programs.

Fourth, US higher education institutions are much more market-oriented and in a competition. Offering supportive first-year activities might be an argument for prospective students (and their parents) to choose a certain institution. Retention services are important not to lose students to another institution. However, also the educational landscape in Europe shifts towards competition and market-orientation. Even though we cannot predict now how fast this shift occurs and how far it will go, universities do would be wise to be well prepared.

Concluding remarks

On our visit to the US, I got very positive reactions on my research topic. People would always stress how important they deem first-year programs and that students needed help in their transition from high school to university. They would tell me with a lot of verve about their programs. Accordingly, I was very surprised to hear one person commenting in a distinctly derogatory manner: "First-year experience? Yes, we do a lot of that hand-holding stuff." There might be some truth to this statement. There might be too much and the wrong kind of support. When designing first-year programs, we should never lose sight of their over-all purpose, namely to have better and more autonomous students. We will only achieve this if we (gradually) leave hold of the hand.

NOTES

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2. Barefoot, 17.

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8. Michael Pokorny/Helen Pokorny, 'Widening Participation in Higher Education: Student Quantitative Skills and Independent Learning as Impediments to Progression', International Journal of Mathematical Education in Science and Technology 36 (2005) 445.

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Healey, ‘Curriculum Development and ‘Enterprise’: Group Work, Resource Based Learning and the Incorporation of Transferable Skills into a First Year Practical Course’, Journal of Geography in Higher Education 16 (1992) 7.

13. Robert Mack is Associate Dean of Academic Advising and Director of BLAST at Tufts.

14. Travis Brown is Director of STEM Diversity, School of Engineering, and Director of BEST at Tufts.

15. Accordingly, the acronym stands for Bridge to Liberal Arts Success at Tufts.

16. The big courses are constitutional law, contract and torts law and criminal law.

17. For a review of literature on how student characteristic impact on performance and persistence see Harvey/Drew/Smith, 47-53.

18. The average lies by 20.9 years. See Laurence Boegli/Sarah Gerhard/Martin Teichgräber, Studieren unter Bologna: Hauptbericht der Erhebung zur sozialen und wirtschaftlichen Lage der Studierenden an den Schweizer Hochschulen (Neuchatel: Bundesamt für Statistik, 2009) 16.

19. However, less important does not mean not important. Consider for example Tinto’s study on how learning communities positively affect student success. Vincent Tinto, ‘Learning Better Together: The Impact of Learning Communities on Student Success in Higher Education’, Journal of Institutional Research 9 (2000) 48.

20. Carmen Lowe is Dean of Academic Advising and Undergraduate Studies at Tufts.

21. On different perceptions of diversity see my blog post The Diversity of Diversity at http://newadventuresinhied.wordpress.com/2012/06/12/the-diversity-of-diversity.

Observing Leisure in Western European and United States Higher Education

Adam Smith
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The topic of this paper is the culture of leisure. To begin, and as a disclaimer, it is important to note that the ideas surrounding what leisure and work *are* is not the question we are attempting to answer. No doubt, that question is extremely important, with different answers for each individual. Rather, the purpose of this paper is to explore differences, if there are any, in the perspectives of leisure between two higher education systems. To do this, it is imperative that we standardize what leisure is. According to the literature, leisure is best described as the things we want to do, while work is defined as the things we don't want to do, are paid to do, or are forced to do. Again, the ambiguity of those definitions begs the questions of what is work and what is leisure. That same ambiguity also allows us to compare very different cultures. Simply put, leisure is what we do, regardless of whether a paycheck comes with it. Leisure is what we do to relax and de-stress. Thus, the question was asked: In the competitive world of higher education, is leisure valued? If, in general, leisure is regarded as a luxury in United States (U.S.), are there differences between Western Europe and the U.S.? Are we all overworked, overwhelmed, and in need of psychiatric intervention, or are there places where leisure and time away from the institution is valued similar to at-work productivity? Using international statistics regarding work and well-being, subsequent theories derived to explain those statistics, and personal observations of both U.S. and Western European higher education, we will attempt to understand the cultures of leisure.

The general stereotype about Western Europeans suggests that they work less, have more leisure time, and as a whole, are generally more relaxed and happier than their US counterparts. Whether or not there is any truth to this stereotype, many Americans, influenced by media outlets and popular culture and entertainment, have come to believe this. Americans have become increasingly inter-

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ested in Western European leisure and lifestyle, working and vacationing hours. The numerous articles, both academic and popular press, published on such topics demonstrate the ongoing interest. Even more, this stereotype didn't arise without some evidence, as there are compelling statistics in its support. The U.S. weekly work hour average (over the country's population) is 25.1, whereas Italy, France, and Germany average at 16.7, 18, and 18.7 hours, respectively. Within the working population, the hours worked per week are 39.4 for the U.S., and 37.4, 36.2, and 36.4 hours for Italy, France, and Germany, respectively. The U.S., on average, has 3.9 weeks of vacation. The lowest average in Western Europe is Switzerland at 6.1, with others, like Italy and Germany, averaging close to 8 weeks (Alesina et al., 2005). The Organization of Economic Co-operation and Development (OECD), which is responsible for these statistics, has also regularly monitored work-life balance and life satisfaction. Observing how individuals divide their waking hours between work and leisure, and asking individuals to subjectively rate the quality of their lives, the OECD found that much of Western Europe fares better than the U.S. in the categories of work-life balance and life satisfaction. In work-life balance, the U.S. ranks 27th and 30th out of 36 countries in working hours and time devoted to leisure and personal care, respectively. Germany, France, Switzerland, and Italy all ranked in the top thirteen for time devoted to leisure and personal care, and vary in working hours with Germany and Italy ranked 13th and 14th and Switzerland and France ranked 18th and 23rd (OECD, 2012).

In the literature, there are currently three theories to explain these numbers: taxes, regulation, or culture. Edward Prescott, a Nobel laureate, suggests that the differences seen between U.S. and European labor is due to differences in tax structure (Prescott, 2004). Most western European countries have higher tax rates, influencing the number of hours worked. Moreover, higher tax income that allows for greater social services potentially impacts working hours because citizens have higher expectations from local and national governments once they retire. Other economists suggest that labor unions and regulation plays an important role. Unions have a high presence in Western Europe, with the majority of workers covered by collective bargaining. Laws that prevent people from working more, to promote lower unemployment by sharing working hours, and the enforcement of 6-8 weeks of vacation have contributed to important labor changes in the last thirty years (Alesina et al. 2005). Another theory, suggested by Olivier Blanchard, is that culture is a majority factor, and that the average Western European individual has a cultural preference for leisure (Blanchard, 2004). In other words, "the main difference is that Europe has used some of the increase in productivity to increase leisure rather than income, while the U.S. has done the opposite." These theories, coupled with substantial anecdotal evidence, tend to promote the idea that Western Europeans value their leisure time more than the average American.

During a two-week exploration of Western European higher education systems, an attempt was made to objectively observe whether these stereotypes hold true. Admitting the possibility of confirmation bias, did we see a predilection for leisure in Western Europe? Yes and no. At the Universität Basel Institut für Sport and Sportwissenschaften (ISSW), professors spoke of the epidemic of depression and the lack of physical exercise. Similarly, the Swiss cities of Zürich and Basel were inundated with advertisements for anxiety and depression pharmaceuticals. I did not observe many students lounging in public areas of Universität Zürich, Eidgenössische Technische Hochschule Zürich, or Universität Basel, especially when compared to Scuola Universitaria

Professionale della Svizzera Italiana, Università della Svizzera italiana, or Politecnico di Milano in Italy. Professors at Universität Zürich and Eidgenössische Technische Hochschule Zürich spoke of the immense pressure for publications, job placement, and external funding. These sentiments are similar to those of U.S. professors at comparable universities. Yet, despite what was said, there was a difference, and it was subtle. At Eidgenössische Technische Hochschule Zürich, a professor commented that in Switzerland, holidays were important and usually taken, whereas in the U.S. professors continue to come to work during holidays. Across all European universities, there seemed to be a more relaxed attitude to higher education. At Scuola Universitaria Professionale della Svizzera Italiana, no one seemed rushed, despite the fact that we were late. At Università della Svizzera italiana, when asked about student recruitment, the president remarked casually "the students will come." And at Politecnico di Milano, several of our hosts were recruited in the moment, with no apparent worries. While these are just personal observations, and may be inaccurate, the more relaxed attitudes regarding higher education were still apparent.

What if this relaxed attitude is a systemic result of the culture as a whole? In the U.S., a university education is touted as the way to improve one's life. Parents that did not have the chance to go to college save money to send their children to college. Individuals in undesirable jobs will attend college mid-career in hopes for a better life. The desire for a college degree has made student loan debt a tremendous concern in the U.S., and the influx of awarded degrees is making job placement increasingly more difficult. In the end, a college education has become the newest addition to the American dream, with mixed results. However, in Western Europe, that overarching desire for a college degree didn't seem to be as prevalent. It seemed that most individuals were regarded equally, no matter their job or education. I did not observe a societal hierarchy determined by education, or at the least, one not as prominent as what can be found in the U.S. If any of these observations are true, then a university education is simply something that someone wants to do, but has not become a necessity for progressing in Western European society. This lack of necessity also holds true in U.S. society. The majority of U.S. citizens are gainfully employed, producing meaningful work, without the requirement of a college education. The difference between the U.S. and Western Europe, it could be argued, is that many U.S. individuals do not view college as a choice, whereas individuals in Western Europe do. Perhaps it is a simple belief that determines our capacity for leisure and a more relaxed life. In the end, while taxes, laws, culture, and forces (un)known play important roles, leisure remains an individual choice.

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Internationalization of Higher Education

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As a member of the 2012 Global Perspectives Program (GPP), I set out to explore international diversity in higher education. Initially, I was interested in focusing on international backgrounds of faculty members and students in European institutions. However, during my visits to universities in Switzerland, France and Italy, my topic evolved beyond demographics, and I started to focus on the internationalization of higher education.

In the last decade, internationalization has become an increasingly popular topic in academic institutions in the US and Europe, as well as in the rest of the world. The term encompasses the introduction of international and intercultural components into the curriculum, as well as facilitating mobility of all university components (students, faculty, research, etc.) across nations.[1] Both aspects are important for the successful integration of the institution and its students into a culturally rich, interdependent, financially interconnected, and increasingly globalized society.[2] Based on the 3rd International Association of Universities (IAU) Global Survey Report *Internationalization of Higher Education*, a majority of institutions worldwide consider internationalization an important aspect of higher education, albeit the reasons and approaches followed to engage in internationalization vary.[3] The European universities we visited during the program appear to belong to this majority, as evidenced by the high number of international students (15 % - 65 %) and international faculty members (~50 %) that each of them have. In addition, institutions such as Politecnico di Milano and Universita della Svizzera Italiana expressed their strong interest in recruiting internationally, while other universities promoted study abroad opportunities. Undoubtedly, the Bologna Accords has played a major role in encouraging and allowing international mobility within European higher education. Another factor that has played a role is that in most European countries, language is a large curricular compo-

nent in primary and secondary education; thereby, widening the pool of potential higher education institutions that one could attend.

In the US, Virginia Tech is among the universities that value internationalization. In an effort to improve ranking as a research university, and increase domestic and international competitiveness, Virginia Tech has invested a great deal in internationalizing research and education (both undergraduate and graduate), as well as improving in-house support services for international members.[2] Support for international members of the university is an important aspect to consider when introducing internationalization to an institution, as it can impact the emotional well being of students and faculty members, as well as encourage future international recruitment and collaborations. Universities in the US and Europe, including Virginia Tech, offer international support services that extend from language courses for faculty members to themed residential facilities. These extracurricular services offered are evidence of a strong desire for international recruitment, exchanges, and mobility in the US and in Europe.

Although internationalization is generally a good thing for institutions and individuals, implementation requires a financial investment from universities and from students that wish to partake in international experiences. In Switzerland, students who attend universities have the opportunity to attend any institution they want. However, most students choose to stay close to home, at least at the undergraduate level. Staying local allows the opportunity to live with family and not to incur in housing expenses. Financial concerns can also play a role in reducing mobility across nations, and can deter students from partaking in study abroad programs. An aspect of internationalization brought to light by the IAU report is the fact that Asian-Pacific, European and North American universities are preferred geographic regions for international mobility and collaborations. African institutions are low on the list, and Latin American institutions are completely off the radar, even within Latin America itself. [3] This finding is in line with financial constraints that institutions in less wealthy nations face. These universities have less financial resources to apply to internationalization efforts, thus are less likely to become internationally recognized, negatively impacting recruitment of students, faculty members and research collaborations.

Internationalization of higher education will continue to evolve as the wider society becomes more globalized in every aspect. Internet access and long-distance learning allow for the dissemination of knowledge across nations, and can also dissolve geographic and national borders. With this, internationalization efforts can focus on introducing or maintaining a global component into curriculums such that students and faculty members in any field of study can develop awareness of their role in the world, rather than in their specific institution, region or country. Language is one of the limiting factors in internationalization. It is apparent that introducing different languages prior to entering higher education allows more mobility and flexibility in education and careers. Some universities in Switzerland use solely English at the graduate level, even though English is not a national or official language of that country. This approach is already allowing a greater level of international recruitment and collaborations. As universities implement their own internationalization efforts, regardless of rationales and approaches, we will begin to see an increase in global citizenship, which will hopefully include all geographic regions, so that everyone can have access to higher education from an internationally recognized institution.

NOTES

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Our theme this year "access to and within higher education" was extremely timely in that the Global Perspectives Program (GPP) participants were discussing topics such as the learning revolution, access and equity in higher education, and open access at the same time that MOOCs (Massively Open Online Classroom) gained momentum in the United States. What began for us as a relatively modest conversation about comparisons about/of access paralleled global discussion which has blossomed into a full fledged and yet somewhat highly controversial debate about the future of higher education. The MOOC movement has arrived and we should reflect on our initial conversations in light of the global conversation.

"Access to and within higher education" (put link to presentation here) prompted the GPP participants to examine issues and topics including but not limited to; individuals and their access (or not) to higher education, the right of the public to access the knowledge generated within higher education, the how and when of higher education, and the availability and accessibility of learning and other programs and opportunities.

Historically access to higher education has been limited by gender, race/ethnicity, socioeconomic status plus more and access has varied around the world. There remain questions about who can have access to an "education", to knowledge and information, courses and at what costs, if any. There are many examples today (with more tomorrow) of increasing the accessibility of courses to a broader public and global audiences (Athabasca University in Canada, Udacity, Coursera, edX, and more). A new phase of the learning revolution is underway. Open Access is a global movement underway through which traditional notions of access to scholarship and knowledge are challenged through Open Access (OA) journals and other means of sharing knowledge. In response to the movement, UNESCO has developed policy guidelines for open access to scientific information.

Enduring conversation about access to and within higher education is a must for future academic leaders. With GPP'12 the conversation began in earnest and must continue.

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LIST OF PARTICIPANTS, GPP 2012

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Sean Conaway, Creative Writing

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