

## Global Liberal Arts and New Institutions for 21<sup>st</sup> Century Higher Education

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### Definitions, History, and Evolving Ideas about Global Liberal Arts

A Typical liberal arts chronology recites the Medieval seven liberal arts consisting of the trivium - with Grammar, Dialectic, and Rhetoric; and the Quadrivium, with Arithmetic, Geometry, Music and Astronomy. As an astronomer, I am always glad to know that Astronomy has been an official part of liberal arts for over 1000 years! In the past 200 years, the United States developed an interesting fusion of German research university and English college, resulting in the institutions which we in the US would call “liberal arts” institutions. These US liberal arts institutions can vary in size from Soka University of America (with 500 students), to Pomona College (with 1600 students), to Yale University (with 12,000 students) but all have in common an emphasis on the student’s capacity to think freely and to possess the skills needed for knowing why they think what they think. This in turn empowers them and helps them be “free” - the “liberal” in liberal arts.

Robert Pippin, in his *Aims of Education* address at the U. Of Chicago<sup>1</sup> described liberal arts as “knowledge for its own sake” and emphasized the “liberality of mind” and the ways that liberal arts provide opportunities to expand intellectual processes to know how scientists, poets, sociologists and others interpret the world, and from these explorations to develop one’s own interpretation. Pippin also described liberal arts in terms of its opposite - “that liberal arts is not just dogmatism or prejudice, but also any kind of over-specialized technical instruction or vocationalism - as opposed to a devotion to inquiry about the good or best life or to the value of knowledge itself for its own sake.” He emphasized that an essential part of liberal arts is to constantly test one’s assumptions - through argument and writing - to know why one thinks the way one does - which is an essential underpinning of a truly free will, another definition of “liberal” in liberal arts.

Some may characterize “liberal arts” as a “distinctively American” form of education, as did Steven Koblik, former President of Reed College, in his book of the same name<sup>2</sup>. However, the history of liberal arts includes an even longer chronology with its own independent development over the centuries in Asia. As Bill Kirby and Marijk van Der Wende state in the opening chapter in their book *Experiences in Liberal Arts and Science Education from America, Europe and Asia*:

*“The debate on these issues goes back minimally to those of the nineteenth century between proponents of the Humboldtian ideal of Bildung (the education of the whole person) as distinct from Übung (more practical training), differences that are phrased differently across the world—in China, for example, as the distinction between a*

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<sup>1</sup> Pippin, 2000, Address on “Liberation and the Liberal Arts” at U. Chicago, accessed at <https://aims.uchicago.edu/page/2000-robert-pippin>

<sup>2</sup> Koblik, S., and Graubard, S., 2000, *Distinctively American – The Residential Liberal Arts Colleges*, now reissued as an e-book accessible at <https://www-taylorfrancis-com.ccl.idm.oclc.org/books/9781351522076>

*broad conception of jiaoyu 教育 and a narrower, repetitive one of xunlian 训练.*<sup>3</sup>

Pericles Lewis, the founding president of Yale-NUS College in Singapore, noted that the traditions within Buddhist, Confucian, Daoist, Hindu, and other Asian philosophies train students to have “great spirit, compassion, intellectual agility, and virtue.” According to Lewis, “Mencius taught that compassion is the root of all human development and achievement.” He goes on to quote “the mind’s feeling of pity and compassion is the beginning of humaneness (*res*); the mind’s feeling of shame and aversion is the beginning of rightness (*yi*); the mind’s feeling of modesty and compliance is the beginning of propriety; and the mind’s sense of right and wrong is the beginning of wisdom.”<sup>4</sup> Li Cao, from Tsinghua University in Beijing, recounts the long tradition within Chinese education for cultivating “cultivate virtue,” which we in the West might interpret as Liberal Arts. He recounts that:

*“The Book of Changes ( yijing 易经 ) declares in its opening paragraph, “we study astronomy in order to detect time variation; we attend to the humanities in order to enlighten the world.” The Great Learning ( daxue 大学 ) states, “the way of great learning lies in illuminating one’s virtue, loving the people, and abiding by the highest good” and “those who wish to illuminate virtue should cultivate themselves first before putting the family, the state and the whole world in order.” Zhuxi (朱熹 ), the renowned neo-Confucian scholar in the Southern Song Dynasty, preached five ways of learning: “A gentleman should study extensively, inquire prudently, think carefully, distinguish clearly, and practice earnestly”. Learning to cultivate one’s character and make ethical commitments to society became the central purpose of education in Chinese culture.”<sup>5</sup>*

Within India, the great Nalanda University was founded over 1500 years ago as a center of Buddhist scholarship, and was the largest university in the world by the year 670, before any of the major universities in Europe existed. Nalanda housed an enormous library, extensive classroom complexes, and provided housing for as many as 10,000 students and 2,000 faculty and visiting scholars, along with meditation halls. The scholars to Nalanda came from all over the world, including China, Japan, Korea, Tibet, Indonesia, and Turkey, during a period several centuries before the first European universities were founded.

During the late 20th century much of the discourse on liberal arts, especially in the US, centered on controversies regarding curriculum, and the need for more inclusion and awareness of non-Western cultures, as well as an emerging and urgent need for greater involvement from previously marginalised communities of colour and discussions of more diversity. Patti McGill Peterson, from the American Council on Education, has written about the history and evolution

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<sup>3</sup> Kirby, W.C., and van der Wende, M., 2015, *Experiences in Liberal Arts and Science Education from America, Europe and Asia – A Dialogue Across Continents*, Palgrave:New York, p. 2.

<sup>4</sup> Lewis, P., and Rupp, K., 2015, “Liberal Education in Asia: Trends, Challenges, and Opportunities,” *New Global Studies*, 9(3), 245-266.

<sup>5</sup> Cao, L., in Kirby, W.C., and van der Wende, M., 2015, *Experiences in Liberal Arts and Science Education from America, Europe and Asia – A Dialogue Across Continents*, Palgrave:New York, p. 33.

of liberal arts in the late 20th century, and how the definitions of liberal arts both in the US and abroad evolved to challenge assumptions from past epochs of higher education. By the end of the 20<sup>th</sup> century, US liberal arts emerged from something like a “culture war” to develop new core curriculum programs that diverged from earlier programs that featured exclusively Western texts. While the compromises in curriculum did not satisfy everyone, they did broaden the curriculum to be more inclusive of women, authors from non-Western regions, and to validate the importance of Asian and other non-western classic works as a central part of a shared global intellectual tradition. As Peterson puts it, “the end result was a broader canon of knowledge as the keystone of general education program” which is “encouraging broad cultural engagement and a wide range of educational activities.”<sup>6</sup> Meanwhile, across the world, various countries were emerging from post-colonial educational systems and seeking new models to replace outmoded, overspecialized models.

Emerging from both Asian and US universities was an awareness of the increasing globalisation of our economy and culture and the need for universities to provide a more “cosmopolitan” approach to liberal arts. This idea of cosmopolitanism is one that was expressed well by Nussbaum, who in a 1997 piece tied the roots of cosmopolitanism to early Greek and Roman philosophers, where the notion of being a “citizen of the world” can be found in the speeches of Diogenes, Cicero, and Stoic philosophers such as Marcus Aurelius. Nussbaum argues that the project of expanding liberal arts to include global perspectives enables us to discern the “essential features of human personhood that transcend national boundaries” which ultimately will strengthen our sense of identity within a nation as it embodies our national unity through practicing the “moral ideals of justice and equality” and by recognizing the primacy of what we share as “rational and mutually dependent human beings” regardless of our national origins.<sup>7</sup>

### **Asian liberal arts**

With this recognition of the value of more global perspectives from both US and Asian colleges and universities, a number of new programs in general education and liberal arts began to be developed across Asia - in Singapore, in China, Japan, as well as India. I will highlight just a few of them, which represent programs established (like SUA) in the current century, and also who embody new models for liberal arts that promise to improve the education and development of Asian countries as well as the educational models within US institutions.

### **China**

In China, Yuanpei College at Peking University, the Fudan College at Fudan University, Boya College at Sun Yat-sen University and Xinya College of Tsinghua University formed pioneering efforts for Chinese General Education in the middle and late 20th century. Each of these were

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<sup>6</sup> Peterson, P., 2012, *Confronting Challenges to the Liberal Arts Curriculum – Perspectives of Developing and Transitioning Countries*, Routledge:New York, p. 8.

<sup>7</sup> Nussbaum, 1994, “Patriotism and Cosmopolitanism,” *Boston Review*, October/November, accessed at <http://bostonreview.net/martha-nussbaum-patriotism-and-cosmopolitanism>.

what we might call “University Colleges” and featured some models of general education. Hong Kong’s Lingnan University, established in the early 20th century, shared a president (Charles K. Edmunds) and many of the same liberal arts ideals with Pomona College. More recent initiatives include the ambitious HKU general education program (made possible by a 2010 Hong Kong educational reform adding a fourth year to bachelor’s programs HKU) and the Chinese University of Hong Kong curriculum. CUHK features courses such as - “In Dialog with Humanity” (featuring works from Plato, Confucius along with excerpts from the Bible and the Koran and political philosophers from East and West) and “In Dialog with Nature” which includes readings from a history of Western and Chinese science.<sup>8</sup> Hong Kong also has a number of interesting residential liberal arts programs such as the New Asia College at CUHK, founded in 1949, as an “educational institution which combines the essence of the scholarship of the Song and Ming academies and the tutorial system of Western universities. With humanism as its basis, the College also aimed to facilitate cultural exchanges between East and West and to promote peace and well-being of the human race.”<sup>9</sup>

A new liberal arts college in China, Duke-Kunshan University, combines the talents of faculty from China and the US to create a new kind of institution that fosters “rooted globalism.” The notion of rooted globalism is DKU’s contribution to global citizenship, and is “to cultivate informed and engaged citizens who are knowledgeable about each other’s histories, traditions of thought and affiliations; and skilled in navigating among local, national and global identities and commitments.” DKU’s curriculum is formed around seven “animating principles” that include “independence and creativity, collaborative problem-solving, lucid communication, research and practice, wise leadership, and a purposeful life.” The DKU calendar features an interesting 4-term system with two “mini-block” courses taken at a time, which enables for full-day courses within each of the four terms. The university will include 2000 students and 200 faculty and has just opened with 265 students during Fall of 2018.<sup>10</sup> And it is important to note the founding of Wuhan College in 2003, which with generous support from the Chen Yidan Foundation became a private university in 2015, and includes five departments including a Department of Liberal Education<sup>11</sup>.

## Japan

In Japan, the International Christian University (ICU), founded in 1949, has offered liberal arts curriculum and courses for decades, and additional liberal arts programs at Waseda, Tokyo and Soka universities have since been developed, building on the increasing interest in liberal arts in Asia. In Japan, Waseda University launched a School of International Liberal Studies in 2004, and

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<sup>8</sup> CUHK General Education web site, accessed at <https://www.cuhk.edu.hk/334/english/university-core/general-education.html>

<sup>9</sup> CUHK New Asia College – History website accessed at: <http://www.na.cuhk.edu.hk/en-us/aboutnewasia/history.aspx>

<sup>10</sup> Pickus, N., during presentation at SUA “Globalizing the Liberal Arts” conference, June 2018, <http://www.soka.edu/GLA>.

<sup>11</sup> Wuhan College site, accessed at <https://www.linkedin.com/company/wuhan-college/about/>.

the University of Tokyo reorganized its Faculty of Arts and Sciences in 2011 to “promote thinking across disciplinary boundaries.” Additional programs in Japan include a program in Liberal Arts at Sophia University, a new Akita International University dedicated to “well-rounded humanities education,”<sup>12</sup> the International College of Liberal Arts or iCLA at Kofu, which is a four-year, American style liberal arts college in Yamanashi Prefecture offering a degree in International Liberal Arts with a year of study abroad among over 55 partner universities from around the world<sup>13</sup>, and Soka University of Japan, which has a new Faculty of Liberal Arts that allows students to study across disciplines to gain “understanding of complex problems and issues” in one of three fields that include History and Culture, Politics and International Relations, Economics and Business.<sup>14</sup> Like Soka University of America (SUA), Soka University of Japan emphasizes cross-cultural perspectives, and global awareness to help students strive for peace and prosperity.

It is important to also note that while SUA is an American University – SUA is a sister to Soka University of Japan and inherited many of its founding principles, and shares its core values with SUJ. Our SUA campus is growing rapidly – including a new 91,000 square foot science hall and two new residence halls – as SUA is growing to include a new Life Science concentration and grow by 25% in students and faculty. SUA is dedicated to “developing a steady stream of global citizens committed to living a contributive life” and which is currently ranked number 22 among US liberal arts colleges by USNEWS. Soka University of America, while an American liberal arts university, provides a unique synthesis of Asian and Western interdisciplinary ideas in its Core and GE curriculum, and our students study the philosophy of China, India and Greece in the Core I course, and eastern and western thinkers in its Core II and Modes of Inquiry courses.

### Singapore

Singapore took an early interest in liberal arts programs and began with a new GE curriculum in 1998 and a liberal arts residential program known as the University Scholars program in the late 2002. The NUS Core Curriculum was modeled after the Core Curriculum at US institutions such as Harvard University. The development of the Core Curriculum included several visits from US academics during the 1990s and 2000s to provide input into the design of the curriculum such as the visit by Harvard’s Henry Rosovsky in 2001. Within the NUS Core Curriculum are learning goals that include the developing the knowledge and skills in *Human Cultures*, *Asking Questions*, *Quantitative Reasoning*, *Singapore Studies* and *Thinking and Expression*. This GE curriculum was soon followed by an ambitious undergraduate education initiative known as the University Scholars Program (USP), initiated in 2002. Beginning with 20 students, the USP offered unique interdisciplinary courses in the first years, and then integrated these students into their original faculties for years three and four. USP was intended “to nurture a pool of brilliant students by

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<sup>12</sup> Akita International University web site accessed at <https://web.aiu.ac.jp/en/about/>

<sup>13</sup> <https://www.icla.ygu.ac.jp/en/about-us/>

<sup>14</sup> <https://www.soka.ac.jp/en/academics/guideline/fila>

developing their potential for leadership and intellectual excellence,” according to an early report on the program.<sup>15</sup>

Soon after the University Scholars program, NUS and Yale University launched the most ambitious of the liberal arts projects in Singapore, Yale-NUS College, which arose from a growing awareness within Singapore of the power of liberal arts for training students for entrepreneurship and for creating a more dynamic economy. A government report from the Committee on the Expansion of the University Sector in 2008 outlined the need for a liberal arts college in Singapore. Within the report was the finding that: “liberal arts education serves to develop independent thinkers, effective communicators, and potential leaders for the future.” Looking toward the model of education at leading colleges and universities found in the United States and elsewhere, the national government identified liberal arts education as, “broad-based, multi-disciplinary learning, high-quality teaching and intensive interaction among students and with faculty members.” The President of Singapore, Tony Tan, also came out strongly for liberal arts in several speeches. In 2010, while Executive Director of the Singapore Investment Corporation, he noted that the British-based educational system dominant in Singapore had “served Singapore and Singaporeans well” but that the American liberal arts may be why the United States economy is “more dynamic and entrepreneurial” when compared to European ones, and that the American system “fosters a readier acceptance of change and a greater willingness to take risks.”<sup>16</sup>

Established in 2011, the Yale-NUS College is designed to meet the overlap of strategic needs of Singapore, as well as Yale University and NUS. Conceived as a true partnership of these two universities, Yale-NUS was designed to provide long-term stability that other “branch campus” initiatives may find harder to achieve. Yale-NUS College was founded by an agreement between the NUS President, Chor Chuan Tan, and the Yale President, Richard Levin. The vision of Yale-NUS College was, in the words of its mission statement to be “A community of learning, founded by two great universities, In Asia for the world.” Yale-NUS College was designed to have “a focus on articulate communication,” “open, informed, and reflective discourse,” and “conversation” between individuals. The Yale-NUS College curriculum report of 2013 describes the goals of the new curriculum:

*“Among the goals of a college curriculum is to help students make sense of that experience together, through a set of conversations about some of the most fundamental questions and problems of human existence. The curriculum should facilitate conversation, as would the campus design, with its carefully engineered common spaces. Fundamental questions would be posed within team-taught common courses that transcended East and West and blended individual academic*

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<sup>15</sup> Penprase, B., 2017, “Innovation in Undergraduate Education: The Case of the National University of Singapore,” in J.A. Douglass, ed., *Envisioning the Asian New Flagship University -Its Past and Vital Future*, Berkeley Public Policy Press: Berkeley, Chapter 9.

<sup>16</sup> Penprase, B., 2017, “Yale-NUS College” in J.A. Douglass, ed., *Envisioning the Asian New Flagship University -Its Past and Vital Future*, Berkeley Public Policy Press: Berkeley, Chapter 10.

*disciplines in new and innovative ways.*<sup>17</sup>

The Yale-NUS Curriculum features an ambitious and interdisciplinary Common Curriculum that includes two semesters of Literature and Humanities, two semesters of Philosophy and Political Thought, a course entitled Comparative Social Inquiry and another Modern Social Thought course. It also includes Quantitative Reasoning, and two semesters of Scientific Inquiry courses.

## India

In India a group of philanthropists came together to try to revive a tradition of more liberal arts within universities and several new institutions were founded. These include Ashoka University (the Yale of India), Shiv Nadar University, O.P. Jindal Global University, and Azim Premji University. Additional programs have been founded in the recent years in Chennai (mention new one) Interesting new items: Krea University in Chennai<sup>18</sup> and discussions are ongoing to create larger ambitious larger private universities within India, including one group which calls itself the Nalanda2, which aspires to create the “Stanford of India.”<sup>19</sup> I will give some more details from just two of the universities – Ashoka University and Azim Premji University, both of which sent representatives to our Soka University of America Globalized Liberal Arts conference in June 2018.

Ashoka University was founded by a group of US-educated entrepreneurs, such as the Yale alumnus and philanthropist Ashish Dawan, who also created the Central Square Foundation dedicated to providing education to children within slums in India. Ashoka University aspires to be the “Yale of India.” Among the founders of Ashoka University is Pramath Sinha, founding Vice Chancellor of Ashoka. The Ashoka University founders began by establishing the “Young India Fellowship,” a one-year multidisciplinary postgraduate program in Liberal Studies and Leadership. The Young India Fellowship includes a year of study with lectures from a wide variety of disciplines in humanities, sciences, and arts. Fellows complete a project at the end of the year that blends liberal arts with an internship and mentoring from the instructors in the program. The program has grown in its three years to 200 fellows from its initial batch of 58 students, and is now housed at the new Ashoka University campus. The Ashoka University opened in 2014–15 with its first class of 65 men and 68 women, and it is admitting its second batch this year in 2015. The Ashoka curriculum includes 12 Foundation Courses, which offers a diverse mix of sciences and humanities. Students then choose a major, which consists of 12–16 courses in about 12 different fields. Ashoka University has developed its curriculum with academic partnerships with Carleton College, Sciences Po (France), Penn Engineering, the University of Michigan, and King’s College (UK). The Ashoka STEM curriculum includes Principles of Science (focusing on ways of knowing and scientific inquiry), Mind and Behavior, and Introduction to Mathematical

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<sup>17</sup> Garsten, B., et al, “Yale-NUS College: A New Community of Learning,” Curriculum Report accessed at <http://www.yale-nus.edu.sg/wp-content/uploads/2013/09/Yale-NUS-College-Curriculum-Report.pdf>

<sup>18</sup> Krea University web site – accessed at <https://krea.edu.in/index.html>.

<sup>19</sup> Nalanda 2.0 web site – accessed at <https://www.nalanda2.org/>.

Thinking. The plan is for Ashoka to grow beyond 2000 students in the coming years, with both undergraduate and graduate programs.

Azim Premji University is another example of private philanthropy creating a new form of higher education in India. The Azim Premji University is the most recent project for the multi-billion-dollar Azim Premji Foundation (APF), which is dedicated to creating a “just, equitable, humane and sustainable society” within India by “making deep large scale and institutionalized impact on the quality and equity of education in India, along with related development areas” (APF 2015). Azim Premji is one of the world’s wealthiest men, listed as 41st richest in the world, with a personal fortune of \$17.2 billion. He founded APF in 2001, and pledged to contribute \$2 billion to have a major impact on the 1.4 million public schools within India. Azim Premji also has joined Bill Gates “Giving Pledge” program to give most of his wealth to charitable causes along with Warren Buffet and Richard Branson. Azim Premji University programs are designed to create talent, knowledge, and also social change, and are focused in several interdisciplinary programs. Azim Premji University offers Master of Arts in Education or Development, conducts research in education and development, and houses a continuing education center for teachers. The Azim Premji curriculum includes interdisciplinary explorations of socially relevant themes. Examples include courses in “Law, Governance and Development,” “Mind and Society,” “People and Ideas,” and “The Philosophy of Education.” The undergraduate program at Azim Premji is similarly interdisciplinary and opened with its first batch of undergraduate students in 2015. It offers major concentrations to undergraduates in four areas—Physics, Biology, Economics, and Combined Humanities—and in each of the majors, the curriculum emphasizes the connections between these disciplines and India’s culture and society.<sup>20</sup>

### **Other New Liberal Arts Initiatives – Vietnam, Pakistan, Ghana, and the Netherlands**

As liberal arts expands around the world and is practiced across Asia, additional new institutions are being created that fuse together cultural influences from the local country with some of the emerging new ideas that this wave of global liberal arts has inspired. In the past five years, entirely new institutions in Vietnam, Pakistan, Ghana and the Netherlands have been created with unique liberal arts curricula that offer inspiration for the future of liberal arts. These programs exemplify the new wave of liberal arts institutions that are gaining support across the world.

Vietnam’s new Fulbright University was chartered in 2017, and is being constructed within Ho Chi Minh City for a planned opening in 2022. The program began as part of the Fulbright Economics Teaching Program (FETP) in 1994 through the Harvard Vietnam Program, which was initially funded by the U.S. Department of State. In 2012, a non-profit organization known as the Trust for University Innovation in Vietnam, began planning the project, using 15 donated hectares

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<sup>20</sup> Penprase, B., 2015, “New Liberal Arts and Sciences Institutions in India and Singapore,” in Kirby, W.C., and van der Wende, M., 2015, *Experiences in Liberal Arts and Science Education from America, Europe and Asia – A Dialogue Across Continents*, Palgrave:New York, p. 33.



of land.<sup>21</sup> The Fulbright University aspires to provide “a 21st century liberal arts education that spans engineering, arts and letters, and the sciences,” and “address the pressing needs of Vietnamese society, and ultimately point the way toward a new approach to high quality education in developing countries.” The institution plans to open its first full academic year in Fall 2019.<sup>22</sup>

Pakistan has created its first liberal arts university, Habib University, established in 2014. The Habib University is a privately funded institution rooted in the Islamic philosophy of Yohsin, which as described on the institutional web site, “encompasses five major paradigms: striving for Excellence; appreciating Aesthetics (beauty); nurturing Passion; Respecting others; and Serving the communities in which we reside.” The liberal arts education at Habib University is focused on developing not only technical knowledge of students but being intentional in education to craft the nature of a student’s interactions with nature and society to positively impact the community and the world.<sup>23</sup> The Habib University Liberal Core Curriculum that includes humanities and sciences, with an emphasis on developing perspective about modernity in its context within history, as well as a course on “The World of Urdu” that explores the literary heritage of Pakistan.<sup>24</sup>

Ghana’s Ashesi University is a private, non-profit liberal arts university founded in 2012 outside of Accra, Ghana. The university was founded by Patrick Awuah, a Swarthmore College alumnus who has since received a MacArthur Foundation “genius” award for his work pioneering liberal arts education in an African context. Ashesi means “beginning” in the Fante language, and was intended to challenge the traditional colonial higher education within Africa to also develop new leaders for the continent. Awuah studied business at the Haas School at UC Berkeley and was convinced that a university within Ghana that could merge some of the elements of Swarthmore’s liberal arts pedagogy and curriculum with the business administration skills would be of great demand. As stated by the Ashesi Foundation: “Our mission is to educate a new generation of ethical and entrepreneurial leaders in Africa; to cultivate within our students the critical thinking skills, the concern for others and the courage it will take to transform their continent. Our vision: an African Renaissance driven by a new generation of ethical entrepreneurial leaders.”<sup>25</sup>

Leiden University College(LUC) is a new Honours College of Leiden University, located at the Hague. Opened in 2010, LUC features small classes and residential education with extensive co-curricular activity. Their motto is ‘Building Knowledge for a Better World’ and they feature students and staff from 40 different nations. The curriculum is built on themes related to The Hague, Peace & Justice, and has extensive service-learning and internship opportunities within

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<sup>21</sup> <https://fulbright.edu.vn/origin-story/>.

<sup>22</sup> <https://fulbright.edu.vn/join-us/>

<sup>23</sup> <https://habib.edu.pk/about-us/vision-values/philosophy/>

<sup>24</sup> <https://habib.edu.pk/academics/habib-core/>

<sup>25</sup> Grant, M.A., “Adapting the Liberal Arts Model to Create Ethical and Entrepreneurial Leaders for Africa: The case of Ashesi University College, Ghana,” in *American Universities Abroad*, T. Purinton and J. Skaggs, eds., Cairo:American University in Cairo Press.

the many organizations based near their campus.<sup>26</sup> Unlike most institutions, where the curriculum features majors aligned with academic departments, LUC offers BA and BSc degrees in Global Challenge areas that include Human Diversity: Culture, History and Society (BA), International Justice (BA), World Politics (BA), Earth, Energy and Sustainability (BSc), Global Public Health (BSc), and Governance, Economics and Development (BSc).<sup>27</sup> LUC is the most recent of several new innovative University Colleges in the Netherlands, which includes Amsterdam University College (est. 2009), Utrecht University College Utrecht (est. 1998), and University College Maastricht (est. 2002).<sup>28</sup>

### **Global Liberal Arts and 21<sup>st</sup> Century Challenges**

New and established Colleges and Universities across the world expanding and redefining liberal arts to enable students reach their full potential through a form of higher education that fosters student identity and interest and provides breadth and context to their studies. Liberal Arts institutions around the world are synthesizing new models for a more global form of liberal arts that brings together perspectives from previously localized intellectual traditions. This synthesis includes merging ideas of ancient Greece, China, India and other cultures to provide a multi-faceted inquiry about what it means to be human and to live an ethical and rewarding life. These universal questions of all cultures and times are also being paired with some uniquely 21<sup>st</sup> century challenges. Not only are there global challenges that will require higher education to adapt and respond, but the explosion of information and technology bring new meanings to both “critical thinking” and the human condition. The tsunami of information – its volume and relentless presence all around us require us to help students develop tools to navigate within the roiling social media and online environments. The “21<sup>st</sup> century skills” our students will need include a mix of technical abilities to rapidly sift through large databases, navigate within complex computer systems to enable them to apply a more modern form of critical thinking. These skills will also need to be joined with a deeper inquiry about our collective identities within social spheres that include both in-person and online settings, human and artificial intelligence actors, and interconnected communities that span the globe. These 21<sup>st</sup> century realities are indeed singular and need to be confronted, along with an informed and thoughtful response to the powerful technologies of the so-called “fourth industrial revolution” that will bring us artificial intelligence, unlimited power for modifying life on a genetic level, and opportunities to craft matter on an atomic level. Liberal arts education, through its ability to cultivate a deeper sense of identity, purpose and meaning to students offers the opportunity for equipping students to respond thoughtfully and wisely to these challenges. The creativity, communication and cultural awareness that is fostered within liberal arts education can enable students to be master the needed collaboration and communication to solve our world’s most complex problems.

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<sup>26</sup> <https://www.universiteitleiden.nl/en/governance-and-global-affairs/leiden-university-college-the-hague/about>

<sup>27</sup> <https://www.universiteitleiden.nl/en/education/study-programmes/bachelor/liberal-arts--sciences-global-challenges/about-the-programme/majors>

<sup>28</sup> van der Wende, M., 2016, “The Emergence of Liberal Arts and Sciences in Europe – A Comparative Perspective,” in *The Evolution of Liberal Arts in the Global Age*, Peter Marber and Daniel Araya, eds., New York:Routledge.

Our current Fourth Industrial Revolution is often described as the result from the integration and compounding effects of multiple “exponential technologies.” Each one of these technologies individually has the capacity for scaling exponentially and revolutionizing our economy and society. Our higher education and societies need to be ready for this transformation, since unlike earlier IR’s this revolution may occur not over several decades but within 5-10 years. Based on recent news, we should also consider one additional new technology in the mix, quantum computing, which just recently was announced to have achieved “quantum supremacy” in which the quantum computer can solve now problems that conventional digital computers might take 10,000 or more years to solve.

If we recall Moore’s Law, which has guided our third industrial revolution, we have seen a doubling of CPU power every 18-24 months which has enabled new supercomputers to reach computation speeds of 300 quadrillion FLOPS (floating operations per second) in the latest supercomputer known as Milky Way 2<sup>29</sup> an increase in speed of more than a factor of 300,000 in just two decades. Quantum computing offers the possibility of computers millions or even billions of times faster than our best digital computers, which if coupled with new Artificial Intelligence algorithms, could create computers that would achieve either “General Intelligence” (the intelligence of a human being) or even “Super Intelligence” (whereby computers exceed human intelligence by thousands or millions of times)<sup>30</sup>.

Our current expansion of biotechnology has created the new field of “synthetic biology” which has enabled synthetic organisms built with DNA created within computers and “bio-printed” into host organisms known as a “chassis.” Noting that more than 50% more food will be needed by 2050, within a context of degraded capacity from soil degradation and global climate change, the FIR gives us the promise of developing revolutionary new sources of food production. The use of bio refineries that might utilize cellulose, biomass, and simple sugars to produce a diverse range of fuels, pharmaceuticals and food products in extremely large quantities will enable a shift away from fossil fuels in the coming decades. Synthetic organisms could also be used for environmental mitigation by removing various compounds from the environment such as toxic metals within landfills and even for absorbing CO<sub>2</sub> and other greenhouse gases.

These technologies will need to be central in a student’s education – as they will shape the future those students will live in, and as they advance exponentially to give us amazing new materials, gene therapies, synthetic organisms, and brilliant computers, they will completely reshape our economy. Higher education tends to be one of “curation” in which the lessons of the past need to be transmitted to the future generation. With the future looking very different from the past, we need to merge the curation of past knowledge with capacities to create revolutionary future technologies that will sustain our planet. Within most current university liberal arts curricula, we provide a vehicle to impart wisdom to students from their own cultural traditions as well as from

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<sup>29</sup> Peters, M. 2017. "Technological Unemployment: Educating for the Fourth Industrial Revolution." *Journal of Self-Governance and Management Economics* 5 (1): 25-33.

<sup>30</sup> Bostrom, N., 2014, *Superintelligence: Paths, Dangers, Strategies*, Oxford:Oxford University Press.

global cultures, along with a deeper understanding of the universality of the human condition across time and space. These lessons, which are found outside of the STEM fields, allow students to develop not only technical capacities but wisdom. Social sciences which enable us to understand theories of the mind and social groups, the cultural context of our experiences, and the methods which guide our creation of meaning, are even more essential tools in this new kind of education to allow students to predict and guide the social impacts of exponential growth in science and technology. Humanities gives students deep insight into the inner experiences of others, and develops a capacity to define what it means to be human and live a good life, independent of the century and country one lives in.

Ironically, answering “enduring questions” which come from the non-STEM fields will be even more important as accelerating technologies create challenges to our definition of humanity and personhood, of natural vs. artificial, and of mind and intelligence. We need to have these capacities in our future university to enable us as a society to know where to place limits to our power to create technologies. The same technologies that have the potential to turbocharge our economic growth, extend human life, and fuel future industries have the potential to destroy ecosystems and undermine biodiversity, alter human genomics irreversibly, and supplant human intelligence with new AI systems that could leave millions unemployed.

Precisely because the 4IR technologies accelerate – and generate advances exponentially – there is less of the luxury that we have had in past industrial revolutions to gradually adapt and shape our responses to technology through educational reforms decades later. We need not only to equip students with skills to develop these technologies sustainably and ethically. We need to develop higher education to allow students to develop the capacity for wisdom and to impart that wisdom into their AI algorithms, into their plans for artificial organisms, and into other technologies so they can enhance our future. It will discuss how the 4IR technologies will profoundly challenge our human condition, making a mandate for our response to be more than technological.

Liberal arts programs are being launched across the world because many nations are seeing the value of this form of education within the employment marketplace, and are able to bring students with this sort of wisdom into leadership positions where they work collaboratively with teams from diverse disciplinary backgrounds and cultural orientations. Instead of interchangeable and rigidly specialized workers, graduates from liberal arts programs can span across diverse cultures and ways of knowing to help lead others who have less breadth in their training. This becomes even more vital in the context of workplaces that require 21<sup>st</sup> century skills – to solve the problems and develop the opportunities that will arise in the Fourth industrial Revolutionary economy. The broad inquiry into the nature of the human condition helps liberal arts graduate discern the deeper impacts of industries and technology which can not only enhance profitability of companies but the sustainability of our world. Educating students in these new global liberal arts programs will give them a solid grounding in technology, harnessed with a deep awareness of the complexity of the human condition. This kind of education will enable such graduates to rapidly sift through large databases, navigate within complex computer systems and dig deeply into rapidly changing technologies. In doing so, they can exercise more

modern form of 21<sup>st</sup> century critical thinking. Within this kind of thinking, arising from liberal arts programs, can arise the creativity, communication and cultural awareness that will enable students to solve our world's most complex problems.

As liberal arts programs across the world are further refined through dialog with each other, the global community of liberal arts institutions in the Americas, Europe, Asia and Africa together can provide new types of intellectual life and discovery that is both timeless and set within the context of our complex world that features exponentially accelerating technological and environmental change.