

PREFACE

Since its launch in 1998, the Glion Colloquium has established itself as both a key international forum and a highly influential resource in addressing the challenges and responsibilities of the world's research universities. Held every two years, the forum brings together leaders of research universities, often joined by key figures from business and government, to consider together how the world's leading universities can meet the great challenges of the 21st century. Along the way, the forum also considers key issues related to research universities, including their management and financing, and issues of academic freedom and university relationships with private enterprise, governments and the wider public. The forum's intense discussions take place over three days in the tranquil setting of Glion-above-Montreux, Switzerland, and are based on papers prepared in advance by the participants. After the forum the papers are published both online and in books with worldwide circulation to give universities, governments and businesses practical access to cutting-edge analysis of the current and future state of the world's prominent research universities and of the major benefits these institutions can bring to society.

Over the past two decades, over 200 leaders of higher education, business and government agencies have participated in the Glion Colloquium to consider topics such as the rapidly changing nature of research universities, university governance, the interaction between universities and society, collaboration between universities and business, the globalization of higher education and how universities prepare to address the changes characterizing our times. The conferences have also considered the many global challenges requiring both the human and intellectual contributions of universities, e.g., global sustainability as the activities of humankind threaten the fragile balance of our planet; the widening gaps in prosperity, health and quality of life characterizing developed, developing and under-developed regions; the accelerating pace and impact of new technologies and the stability of the global

economy in the face of questionable business practices, government policies and public priorities.

The papers presented and the associated discussions at each colloquium have subsequently been published in a series of books available through publishers and downloadable two years after publication in full-text format on the Glion Colloquium website at <http://www.glion.org>.

Yet, all of our universities also face highly diverse, complex, compelling responsibilities at the local and regional level that frequently take priority over broader global concerns because of our governance, financing and public responsibilities. For example, many institutions are challenged to address growing needs for advanced education of regional populations, e.g., the “mas-sification” of higher education opportunities. Some institutions face intense political pressure, both external and internal, to move up the rankings of their academic reputation in various global or national surveys. Others are expected to place more emphasis on transferring the intellectual property developed through campus research into the marketplace to stimulate local economic activity. Some are expected to address urgent social issues, such as income inequality or the plight of underserved populations. And almost all universities are pressured to reduce the costs of their educational programs, particularly in an era when there are other pressing demands on both public tax revenues and household incomes.

Of course, they face a formidable challenge in appropriately balancing the priorities between local issues such as technology transfer, regional challenges such as creating an educational infrastructure to provide an adequate flow of students into universities with interests and aptitudes in science and engineering, and global challenges such as renewable energy technologies and global climate change. They also face many constraints, such as the resistance of the siloed medieval structure of academic disciplines to the rapid convergence of disciplines required in fields such as biomedical science, the impact of disruptive technologies (e.g., ICT) on teaching and research, or attracting the resources necessary to conduct graduate education and research at world-class levels. In fact, all too frequently, the ability to address internal constraints becomes a key factor in shaping the priorities of efforts to respond to external needs and opportunities.

In June 2015, two dozen leaders of many of the world’s most distinguished research universities attended the Xth Glion Colloquium to consider how institutions determine the priorities of the diverse challenges that call upon their resources, the plans they had developed to address these challenges, and the internal constraints and complexities that must be overcome to succeed in these efforts.

Because of the great diversity of institutions and of the challenges they faced, it was felt important to engage the participants more deeply in determining

the organization and design of the Xth Glion Colloquium. Several months before the meeting, invited participants were asked to propose a topic pertinent to one of the following five subtopics:

- The Role and Responsibility of Research Universities
- Intellectual Constraints
- Financial Constraints
- Structural Constraints
- Human Constraints

The final agenda for the meeting consisted of an opening session aimed at summarizing the history of the Glion Colloquium, followed by five sessions spanning the interests of the participants. A sixth and final session was then used to enable the participants to identify key issues and conclusions, as well as provide input on the organization of future Glion Colloquia.

This book is intended to provide a record of the Xth Glion Colloquium. **It begins with** a comprehensive analysis of the history of the Glion meetings by Peter Scott, one of its early participants and former Vice-Chancellor of Kingston University. Scott stresses that the Glion initiative has provided an unusually valuable contribution to higher education because it has created a sustained and documented conversation involving the leadership of many of the world's most distinguished universities over almost two decades, during which the environment for higher education has changed significantly. The geopolitical and economic order has shifted from economic growth in the 1990s as the Cold War ended, to the global financial crisis and recession in the new century, with aging populations in the West, the growth of Asian populations and influence in the East, and rapidly evolving technologies such as the Internet, social networking and the analytical tools of data analysis challenging the traditional paradigms of teaching and research. While universities have long emphasized the need for continuity and stability, today they are increasingly identified as key players in knowledge-driven economies that are increasingly dependent on their graduates and their research. The Glion Colloquium has provided a forum to consider not only the tensions and synergies between continuity and change, but also the impact of major forces reshaping the academy such as globalization, market competition and the shift from public to private financing.

This opening session set the stage for the next five sessions of the Glion Colloquium concerning the changing role and responsibilities of the world's universities as they face the changing constraints of intellectual change, shifting financial support, structural challenges and changing human needs. During **the first of these sessions** (Newby, Huber, Blank, Beretz and Guzzella), it was noted that today's universities are still caught in a triangular force field of demands for massification (enrolment growth), increased

quality (as measured by league tables) and reducing the burdens on public financing. But the balance of such forces differs greatly among nations with aging populations demanding increased expenditures on health care and security, those with rapidly growing economies and populations demanding more education opportunity, and those seeking world-class quality capable of delivering the best graduates and research. It was noted that these frequently conflicting responsibilities were also challenging long-standing university traditions, such as academic freedom and autonomy in the conduct of teaching and research. To the core missions of education and scholarly research, society now demands that universities contribute more directly to economic growth and service through both applied research and educational programs more directly related to the needs of industry and the workplace. The unique characteristics and roles of research universities are increasingly challenged (if not ignored) by the broader and diverse needs of society.

The second session focused on the changing nature of the intellectual constraints on the university (Catsicas, Dirks, de Brito-Cruz and Prendergast). The growing scientific and technology needs for industry demand a more intimate relationship with universities, working together through open innovation paradigms that better address the rapid evolution of developing markets. Powerful forces of globalization similarly demand new paradigms for interaction among universities around the world rather than simply exchanging students and faculty. New paradigms are appearing, such as campuses involving co-location of activities from universities scattered about the globe to facilitate more intimate collaboration rather than the traditional approach of individual institutions sprinkling several branch campuses in far-flung locations. The urgency and complexity of global issues have stimulated efforts for universities to join together in international research collaboration in addressing global research questions that span not only science and technology, but also social, economic and political issues that require global collaboration.

The third session concerned the rapidly changing financial environment for higher education (Aebischer, Borysiewicz, Daniels and Weber), as the traditionally strong public support for higher education, because of its value as a public good, was increasingly being challenged by the perception of a college education as an individual benefit that should be paid by student fees. To be sure, much of the world still provides government financing as the major support for public universities, but the increasingly significant role played by private universities (including for-profit organizations) raises the possibility of a convergence of not only public and private financing, but also the missions and character of these institutions. Key here is the growing importance of philanthropy in support of higher education, a long tradition in the United States because of its favourable tax treatment of both charitable giving and endowment earnings, but increasingly important in both Europe and Asia.

These financial challenges are occurring in an environment characterized by increasing globalization, competition, technology and economic needs, all changing at an increasing pace that threatens the traditional approaches to not only teaching and research, but also to the way that universities are led and governed.

The fourth session addressed other structural constraints (Chan, Gertler, Tan and Seike) such as the implications of the rapid growth both of educational capacity and needs of nations in Asia and Africa, the role that cities played in providing the intellectual, economic and social environment particularly conducive to the excellence of research universities, and the challenges to traditional autonomy so important for high-quality teaching and research as the university became an ever more important institution in the achievement of national prosperity and security.

The fifth session addressed the changing needs of society, driven by forces such as disruptive technologies, growing populations and economic inequities (Flückiger, De Meyer, Duderstadt, Rensburg and Katehi). The impact of rapidly evolving technologies, such as social networking and analytics on teaching and research was considered, with important new applications such as MOOCs (massive open online courses) and MOORs (massive open online research) to provide extremely large populations with learning and research opportunities and the analytical capacity to perform empirical research on massive data sets. Such approaches are not only capable of serving large populations, particularly seeking continuing education, but also demanding new skills on the part of college graduates. But growing needs for learning at the college level, both because of rapidly growing populations in regions such as Asia and Africa, and lifelong learning opportunities because of rapidly changing workforce requirements, will require new technologies and perhaps even new types of learning institutions to serve global needs.

The final session brought all of the participants together to discuss many of the key themes and conclusions arising during the Glion X Colloquium. Among these themes were how to address the growing needs for affordable and sustainable educational opportunities for growing populations, the inequities in educational opportunity driven both by current public policy (e.g., intergenerational competition for public resources) and economic capacity, the balance between the autonomy and accountability for research universities as they become more central players in knowledge-driven economies, the impact of disruptive technologies on learning and scholarship, and the need for universities to join together in collaborative efforts to address major global needs, such as climate change, disease and poverty.

There was a uniform belief that the Glion Colloquium was extremely important for providing an opportunity not only for university leaders to join together to consider such issues, but, moreover, for building and sustaining

relationships and collaboration among the leading research universities of the world.

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Finally, participants from both this and earlier Glion Colloquia would particularly like to acknowledge the important role that Marianne Weber has played in organizing and hosting events for the Colloquium participants and their guests. Indeed, these activities have provided a remarkable opportunity to build lasting relationships among university leaders that have been important to the future of higher education.

Luc E. Weber
University of Geneva

James J. Duderstadt
University of Michigan