



Chapter 7 – Management and Governance of the Modern University: Variations in the United States¹

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Introduction

In the 21st century the developed nations have placed increasing emphasis on improving and strengthening their universities most engaged in doctoral education and research because these institutions are particularly influential in supporting social and economic development as well as producing knowledge-intensive goods and services (Dill and van Vught, 2010). These national higher education policies have often been guided by the U.S. experience with its research universities¹. Following World War II American research universities developed “the most powerful system for advancing knowledge that the world had ever seen” (Geiger, 2020, p. 87). Consequently, over one-third of the top 100 universities in the respected Leiden global rankings of scientific impact (CWTS Leiden Ranking, 2021)² are U.S. public and private research universities.

The international status currently achieved by America’s research universities is due to a number of factors. Under the U.S. Constitution education was deemed a principal responsibility of the constituent states. Therefore, in marked contrast to the policies of other OECD nations, the American national government has not established or financed higher education institutions, with the exception of a small number of Federal military academies. Given this federalist political framework, the U.S. national government has also never developed a national ministry of education, nor has it directly regulated university governance, management, or student admissions. U.S. national as well as state governments have traditionally permitted both public and private universities to adapt and improve institutional governance and management as needed. As a consequence, U.S. academic management historically has been more institutionally focused with highly active administrative leaders, especially when compared to other countries where national

¹ In A. Amaral and A. Magalhães (eds), *Handbook on Autonomy and Governance of Higher Education Institutions*. Edward Elgar, In Press.

disciplinary associations and/or national ministries play a more influential role in shaping university decisions (Musselin, 2009).

One critical federal decision shaping American academic governance occurred in 1819, when the U.S. Supreme Court ruled the charter granted to Dartmouth College by the then colony of New Hampshire was a contract. Therefore, Dartmouth was deemed a private institution designed to benefit the public, not a public institution under government control (Rudolph, 1990). This landmark decision encouraged the creation of many new 'private' institutions in addition to the 'public' colleges and universities then being founded, supported, and regulated by the developing U.S. states. This judgement also formalised a basic American principle of academic governance in which the ultimate authority of a public or private higher education institution rests with its appointed board of control.

Following World War II, during which university researchers played a significant role in weapons development including the atomic bomb, federal support for university-based research burgeoned. In most OECD countries the principal means for funding university research has been the 'dual funding' model, featuring general university funds (GUF) awarded on a non-competitive basis to public institutions supplemented by peer-reviewed research grants awarded by discipline-oriented research councils (Dill and van Vught, 2010). In contrast, after the war, the vast majority of U.S. federally-funded academic research has been awarded via merit-based competition. Consequently, up to two-thirds of the expenditures for research by U.S. public and private universities (NCSESa, 2021) has been supported by federal grants provided by agencies such as the National Science Foundation, the National Institutes of Health, and the National Aeronautics and Space Administration, which are allocated on the basis of prospective peer review of competing research proposals. Furthermore, these competitive federal grants are usually accompanied by related overhead support to each institution, which provides additional funds that research universities can use at their discretion to support research infrastructure and facilities.

Given these unique framework conditions American academic research has become a 'self-organising system' (Geiger, 2019). America's leading research universities developed distinctive mechanisms of collegial governance and management, which have enabled them to achieve their current high global status. These mechanisms include the structure of academic departments and research units (RUs), the structure of graduate schools, the authority granted executive leadership, and the collegial processes of self-government characteristic of America's leading public and private research universities.

The following section will review the means by which research on university decision-making has informed, and frequently misinformed, our understanding of effective forms of governance and management in America's universities. This discussion will be followed with an analysis of the distinctive patterns of academic governance, organisational structure, and management characteristic of the globally respected U.S. research universities.

Models of university behaviour

Over the last five decades research on university governance and management has been dominated by ‘neo-institutional’ models of organisational behaviour (Diogo, Carvalho, and Amaral, 2015). This research has raised questions about the supposed advantages of formal organisation structure and rational decision making within universities. An early, highly influential example of this research was Cohen, March and Olsen’s (1972) model of ‘organisational anarchy’ – institutions characterised by problematic goals, unclear technology, and fluid participation – in which problems are more often evaded than solved through ‘garbage can decision processes.’ Cohen and March (1974) subsequently utilised these concepts as a theoretical basis of their influential national survey of U.S. academic leadership and governance.

However, many scholars citing and generalising from these models in the field of higher education have been inattentive to their derivation and conceptual components. For example, the original Cohen, March and Olsen (1972) models, while inspired by observations from American universities, were not based upon an empirical study or test, but were supported by the results of a computer simulation included with the original article. A retest of this simulation by respected scholars in the U.S. (Bendor, Moe, and Shotts, 2001) revealed that it did not support many of the components of the accompanying verbal model and they therefore called for a needed reformulation and retesting of the core concepts. In response one of the original authors (Olsen, 2001) noted the ‘garbage can’ and ‘organised anarchy’ concepts were never intended to be ‘testable models,’ but rather were better understood as ‘metaphors’ to help shape and guide thinking about organisational behaviour.

Cohen and March’s (1974) subsequent study of U.S. academic leadership also emphasised Weick’s (1976) concept of ‘loosely-coupled systems,’ as reflected in the decentralised and loosely coordinated academic departments characteristic of American universities. However, in a subsequent reconceptualization Weick (Orton and Weick, 1990) expressed concern that his original concept was being interpreted by other researchers in the unidimensional sense of ‘decoupled’, when his original meaning was a dialectic, that is autonomous units that are still connected and coordinated, but loosely so. The recent sociological research on the globally respected University of California, Berkeley (UCB) and MIT (Thoenig, and Paradeise, 2014) underscores Weick’s concern. This study provided generalisations regarding the governance processes by which contemporary U.S. research universities motivate and assure the continual improvement of academic research. The authors concluded that the research excellence of these U.S. universities was primarily a function of the social interactions which occur within and between faculty members and academic subunits. These interactions include many formal and informal internal conversations as well as repeated self- and cross- evaluations among faculty members in differentiated academic units. Significantly, these social processes play a major role in building a shared university identity as well as legitimating certain decision-making criteria within the institution. In these elite universities, the communal norms generated and communicated through these social interactions are the primary means of collegial control over the quality of university research.

Subsequent neo-institutional models (Powell and DiMaggio, 1991) also have emphasised the manner in which institutional forces, such as more competitive university markets, shape and often overwhelm the rational logic of decision-making espoused by academic organisations. For example, when subject to increased market competition universities often attempt to survive and thrive through ‘isomorphic’ practices such as trying to make themselves appear similar to established and widely respected institutions. This behaviour is readily apparent in the efforts of universities in many countries to improve their standing in global university rankings by increasing their emphasis and investments on research and scholarship. But much of the organisational research on university isomorphism, as well as related public policies designed to increase market competition, fail to carefully delineate the relevant academic market and competing players (Becker and Round, 2009).³ Such market definition is an essential preliminary step before any study is conducted or national policy designed regarding forces influencing university behaviour. This failure has led international scholars and policymakers to underestimate the critical role played in the global ascendancy of U.S. research universities by the American Association of Universities (AAU).

Founded in 1900, the AAU is a professional association of America’s leading research universities. The AAU, along with its adjunct Association of Graduate Schools, was originally created by fourteen U.S. universities to establish and uphold among its members uniform academic standards in university research and doctoral education (Geiger, 2017). Currently the AAU consists of 66 universities, two of which are Canadian (AAU, 2021). Of the top 100 global universities listed in the Leiden rankings thirty-five – including the two Canadian universities – are members of the AAU.⁴ Over the last 120 years the AAU has had a dynamic membership, adding and when necessary dropping, members based upon publicly stated criteria and publicly available data sources.⁵ **Since its creation, which substantially preceded any of the known U.S. university rankings, and all of the global university rankings, pursuit of membership in the AAU has provided a primary incentive for America’s research universities to improve their academic governance and management. The members of the AAU clearly are a part of an increasingly competitive global market of research universities. But unlike commercial entities, which are often barred from colluding with each other, the AAU’s annual meeting brings together the Graduate School Deans, who are members of the AAU Association of Graduate Schools, as well as the Senior Research Officers of AAU universities, and provides them a forum for mutually addressing issues related to doctoral education and research improvement. The AAU therefore has not only motivated U.S. public and private research universities to constantly improve their processes for governance and management, but also has served as an influential means for the transmission of more effective academic structures and administrative mechanisms among these institutions.**

The form and function of the AAU helps explain why research on American institutions of higher education (Clark, 1987; Kaplan, 2004) has consistently revealed the governance and management of the leading public and private research universities are significantly different and more

effective than the nation's other universities. The universities that comprise the AAU possess distinctive 'authority environments' (Clark, 1987), characterised by faculty control of major academic decision making, faculty criteria for key administrative appointments such as dean, provost and president, and a process of department-based, bottom-up governance. This American form of collegial governance has been noted as the most significant organisational difference between U.S. research universities and those of other developed countries (Clark, 1983; Meyer, 2016; Paradeise and Thoenig, 2015).

In the following sections the distinctive aspects of U.S. research universities' governance and management will be discussed in turn with examples drawn from the experiences of the public and private members of the AAU.

Boards of Trustees

Because of the previously described distinctive political evolution of the U.S., the governance of American universities has always been more autonomous, 'corporatist,' and market-oriented, than the systems of most other developed nations. As noted, the Dartmouth College Case decided by the U.S. Supreme Court in 1819 is considered a cornerstone of American corporate law, but this ruling also established the tradition of awarding ultimate control of a higher education institution to an external lay board rather than to the faculty.

The role of U.S. boards of trustees has aroused significant international interest because of the strong relationship discovered between the degree of autonomy delegated to universities and their research performance (Aghion, et al., 2009). This economic study concluded research universities are most productive when they face increased competition, but also possess greater procedural autonomy. Because of the complexity of 'frontier research,' the authors argued universities can pursue it best if they control the use of their budgets, independently choose the compensation for their faculty, and hire the academic staff they most prefer.

While the earliest U.S. colleges were strongly influenced by their boards, over the course of the 20th century American universities evolved a distinctive system of internal, 'shared' governance at the institutional level (AAUP/ACE/AGB, 1966). This shared governance involves three spheres of decision making. The governing board and administration have primary responsibility for finances, including maintaining the endowment and obtaining needed capital and operating funds. The faculty has primary responsibility for subject matter, curriculum, methods of instruction, research, faculty status, and aspects of student life clearly related to the education process. Shared responsibility among the board, administrators, and faculty exists for strategic matters such as framing long-range plans, budgeting (i.e., the allocation of financial resources), determining both short- and long-range priorities, and presidential selection.

The authority granted lay member boards of trustees is perceived as a unique strength of the U.S. higher education system (Hermalin, 2004; Meyer, 2016), helping to buffer institutions from political forces and assuring the pursuit of social outcomes in the public interest among these non-profit, charitable organisations. While all private institutions of higher education possess these

boards, governing boards have also become the primary form of control in the public sector, with boards elected or appointed for a state, a system of academic institutions within a state, or for individual institutions.⁶ Typically the boards delegate most of their authority to the college or university president and administration, becoming involved only in major policy decisions.

The size, composition, and selection of boards of trustees vary across institutions in both the private and public sector (Kaplan, 2004). Boards of trustees of private institutions are twice as large on average as those of public institutions and 90% of private sector trustees are selected by the board itself, primarily from alumni of the institution. In over 90% of public sector institutions, board members are selected and confirmed by the governor or state bodies. While students and faculty members from an institution rarely serve as voting members of governing boards in the private sector, they sit on the board in over 50% of public sector institutions, but most of these seats are reserved for representatives from the institution's student governing association. In contrast, institutional presidents are active board members in over 61% of private institutions, particularly large universities, but rarely participate as voting members of boards in the public sector.

However, recent conflicts between boards of trustees and the faculties of public AAU universities in several states suggests the U.S. system of governing boards is now more vulnerable to ideological forces rooted in political patronage and partisan fealty. A survey of public-university board members appointed through a multistep political procedure (Ellis, Stripling, and Bauman, 2020) revealed almost 70 percent assumed their roles through a process controlled by a single political party. Just 22 percent of politically appointed trustees navigated a confirmation process that included a meaningful bipartisan check. As a consequence, the Association of Governing Boards of Universities and Colleges (2020) has called for the merit selection of public sector trustees as implemented in a number of the U.S. states. In this approach a nonpartisan or equally partisan commission screens candidates for the governing boards of a state's public colleges and universities to determine their merit and qualities for service. A similar national merit selection policy for public university boards of control may be especially important in other countries, which like the U.S., consist of a federation of states.

Executive Leadership

Given the distinctive evolution of the U.S. national government, both the early private and emerging public universities adopted a corporate form of governance. From the outset the institutional president and boards of control possessed significant influence, because all higher education institutions were highly dependent on their ability to raise funds in order to survive. Even the University of North Carolina, the first state sponsored institution to open in 1795, received no state funding during its first hundred years and was financially dependent upon donations of land from local farmers, lotteries, gifts and benefactions enticed by the University President, as well as student tuition (Powell, 1992).

During the late 19th and throughout the 20th century a number of dynamic and innovative university presidents helped to create and strengthen the U.S. research university (Geiger, 2017). Unlike

England and Europe, where Vice Chancellors and Rectors played short-term, largely honorific roles, Presidents such as Charles Eliot (40 years at Harvard), Nicholas Murray Butler (45 years at Columbia), Robert Maynard Hutchins (21 years at Chicago), Derek Bok (20 years at Harvard) and William Bowen (16 years at Princeton), not only wielded substantial influence, but did so over extended periods (Meyer, 2016). Ministries of education in other developed countries, which have tried to emulate the U.S. experience, therefore have often adopted a ‘managerialist’ approach by awarding greater hierarchical authority over institutional matters to university CEOs. However, following World War II, as U.S. research universities rapidly expanded and grew more complex, the university president’s role necessarily focused to a greater degree on external relations, which included private fund-raising, public relations, and in the public sector, political negotiation with state governments (Geiger, 2017). Consequently, during this time many U.S. research universities expanded the authority and the collegial processes associated with the role of the Provost or Vice President of Academic Affairs.

The unique role of the American university Provost is well illustrated by the current position description at the University of Michigan (2021): “The Provost is the chief academic officer of the University and has responsibility for the University’s academic and budgetary affairs. The Provost collaborates with the President in setting overall academic priorities for the University and allocates funds to carry these priorities forward.” Traditionally larger U.S. universities had assigned primary responsibility for operational and capital budgeting to a financial administrator. But following World War II many public and private research universities expanded the authority of the Provost, combining university-wide authority over academic programmes and faculty appointments with responsibility for planning and resource allocation. Even Harvard University, generally regarded as the leading university in the U.S. and world, eventually adopted this leadership model. Since its founding in 1636 the deans of Harvard’s faculties had reported directly to its traditionally influential president, but in 1993 Harvard created the Office of the Provost as the second university-wide academic officer, after the President, and to whom all deans now reported.

The trailblazer for this new form of academic leadership in the U.S. was Frederick Terman of Stanford (Geiger, 2017). During World War II Terman served as director of a government funded radar lab at Harvard, but at the end of the war he returned to Stanford as Dean of Engineering with the avowed goal of building a top school. Appointed Provost at Stanford in 1955, Terman became responsible for overseeing hiring and promotion of the entire faculty. During Terman’s period as Provost Stanford’s academic reputation rose more quickly than any other U.S. public or private research university (Geiger, 2017) until it attained its current global standing. Reflecting Terman’s more analytical approach Stanford eventually adopted a number of practices for systematic academic advancement, including innovative university-wide planning and budgeting processes. It also became the first university to apply management science models to academic decision making (Hopkins and Massy, 1981)⁷. While Terman clearly demonstrated dynamic executive leadership, those who followed him at Stanford understood the complexity of university curricula, personnel decisions, and research require core academic decisions be determined by the

professional expertise of the institution's academic staff rather than by an individual administrator. Consequently, Stanford, and subsequently other leading AAU universities such as Duke, Princeton, as well as UCB and Michigan (Dill and Helm, 1988), developed planning, budgeting, and programme evaluation procedures utilising well-designed collegial mechanisms of control.

At Stanford, as at other leading U.S. universities, the Provost is a senior professor, most often with prior experience as a department chair or dean. But to assure financial planning and budgeting decisions truly reflect the university's collective academic values, for over fifty years the Stanford Provost's decisions have been undertaken collegially, in close consultation with a University Budget Committee (Massy, 2016). This committee is responsible for developing and allocating a comprehensive operating budget, including all restricted and unrestricted operating revenue and expense for the next year, as well as the university's capital budget. At Stanford, the Budget Committee is composed of academic administrators, who are also university professors, as well as of experienced senior faculty, including the chair of the Stanford Faculty Senate. Full-time Stanford faculty members represent more than two-thirds of the University Budget Committee members.

The Stanford financial planning and budgeting process also involves a number of noteworthy collegial practices (Massy, 2016). Certain academic units such as the Medical School and Business School, which have access to substantial external funding such as private gifts and research grants or contracts, are included in the comprehensive budget, but unlike other academic units they are funded on a formula basis. This formula funding, as well as needed cross-subsidies among the remaining academic units, ensures that all academic units receive sufficient financial resources to maintain and improve their academic quality. Significantly, all allocations in the comprehensive budget, and the academic values informing these choices, are published annually in the Stanford University Budget Plan (Stanford University, 2021). This very informative document effectively illustrates and communicates the university's core values to all members of the university including students. Lastly, Stanford, like other leading U.S. universities, has sometimes set a specific limit on administrative expenses, calculated as a percentage of the total budget, as a budget planning parameter. As a consequence, funds are reallocated as needed to ensure maximum investment in academic instruction and research.

Another influential management process by which AAU universities sustain their academic excellence is regular external reviews of existing academic departments and research units. At UCB these reviews by distinguished academic peers have been carried out for over fifty years by the Executive Vice Chancellor and Provost in partnership with the Academic Senate under the university's principles of shared governance. The results of these reviews have fed into the university's academic planning process and have been a critical element in initiating major changes. A significant example of this process is the innovative reorganisation of the biological sciences during the 1980s (Koshland, Park, and Taylor, 2003; Trow, 1999). During the 1970s rapid advances in molecular biology and genetics opened new fields of knowledge and provided avenues for radical innovation. At the beginning of this period UCB had preeminent national rankings in the various fields of biology. But the 1981 external review of the University's biology

programmes, which were located in some 20 different departments across several colleges, revealed UCB was slipping in the rankings. This was due to deteriorating laboratory facilities, a substantial duplication in expertise across the multiple departments, and a consequent failure to develop strong faculty groups in newer subject areas. The normal governance process was for these external reviews to first be submitted to a Program Review Oversight Committee, composed of members of the administration and Academic Senate, which would issue a report subsequently reviewed by relevant committees of the Senate, with eventual recommendations by the Senate to the administration. In this particular case a different process was followed, one which further illustrates the role executive leadership and collegial governance play in the achievements of U.S. research universities.

The UCB Provost at the time of the 1981 Biology External Review was an experienced Professor of Botany with a good understanding of the rapid developments then occurring in the biological sciences. The Provost also understood the changes needed would be substantial and strongly resisted by entrenched interests in the related departments, who would likely also be influential on the deliberations of the Academic Senate. Consequently, the Provost chose to appoint a small administrative committee composed of leading UCB Professors of Biology to assess the programmes in the biological sciences in the light of the external review and also to analyse the space needs of these sciences. This committee eventually recommended the creation of a Chancellor's Advisory Council on Biology to reshape and upgrade the biological sciences at UCB and to develop a comprehensive space plan for these fields. This Council, composed of nine distinguished UCB biology faculty members with modern research interests, was awarded distinctive powers which overrode the existing governance procedures. These included the authority to allocate biology positions among the needed specialties and effectively to name the members of the search committees for these appointments. The Council also eventually recommended major new research facilities for the biological sciences, which the Chancellor agreed to support with a private fund-raising campaign for the UCB campus. At the time this was the largest fund-raising campaign ever undertaken by a U.S. public university.

This reorganisation and the new research facilities arrested and reversed the slide of UCB's rankings in the biological sciences and increased morale among the related faculty. While this case illustrates the effective management strategies taken by UCB's executive leadership, it also underscores the critical importance of collegial mechanisms for successful decision making. These included the problem definition process through external review by respected academic peers, clear and prominent roles for trusted intellectual leadership from the university's relevant disciplines in the several committees developing solutions, and information sharing throughout the entire process between the UCB executive leadership and the Academic Senate as a means of sustaining support of the overall faculty. Given the uncertainty and complexity of academic decisions in contemporary research universities, effective academic governance requires carefully designed collegial mechanisms employing the most respected and knowledgeable university faculty members.

Academic Departments and Research Units (RUs)

Disciplinary-based academic departments, which developed in the rapidly growing U.S. universities at the beginning of the 20th century, introduced an academic structure which was internationally unique (Abbott, 2002). A reaction in part to the then influential elective system of college studies, the student disciplinary major quickly became the basis for American undergraduate education. Because U.S. research universities have traditionally delegated faculty hiring to departments, the academic disciplines also effectively organised the American labour market for faculty. With their unusual ability to organise in one single structure undergraduate education, faculty hiring, fields of research, as well as individual careers, disciplinary departments became the indispensable and irreplaceable building blocks of American research universities.

For this reason, academic departments in U.S. research universities are a significant source of collegial control (Dill, 2014). In many university systems there is a tension between personal authority, for example the significant influence traditionally granted individual professors in European universities, and collegial or collective academic authority. The U.S. academic department is a powerful mechanism not only for protecting the professional control of academic work, but also for providing a means of constraining excessive personal authority (Clark, 1987). Academic departments in the AAU universities do acknowledge the importance of faculty seniority and experience by usually requiring the chair of a department to be a senior or full professor. They also frequently assign, to full professors, responsibility for appointments or promotions to that position as well as for the award of academic tenure. But in most AAU arts and science departments the chair is considered a ‘first among equals’ and has a limited, renewable appointment. Over time the chair is rotated out of office and other members of the department collegium ‘take their turn’ in the leadership role. Moreover, on most other departmental matters, such as the design of the curriculum, course assignments, the appointment of junior faculty and staff, as well as the assignment of space, voting is often by ‘one person, one vote. Because these votes include junior members of the academic staff, the departmental structure in U.S. research universities thereby acts as a collegial brake on the personal authority of senior professors.

The procedure for faculty hiring, promoting, and awarding tenure characteristic of AAU research universities provides a further example of collegial control by academic peers. These evaluations do not favour control by any one person – department chair, dean, or provost – or any one level – department, school, or university. For example, at the University of North Carolina – Chapel Hill (UNC-CH) faculty hiring, promotion and tenure recommendations approved by an academic department must be carefully reviewed and approved by a faculty advisory committee to the dean of the relevant school, as well as faculty advisory committee to the University Chancellor (Dill, 2014). This latter committee is composed of the most respected professors drawn from across the university, who thereby help assure a more common standard of faculty quality across all departments. Also, at UNC-CH the decision to appoint a faculty member as department chair is made by the relevant academic dean only after personally and privately consulting with each tenure-line faculty member in the pertinent department regarding her/his views on possible candidates. As Clark (1987, p. 155) noted: “National systems that do not have [academic

departments] seem to evolve toward [them] to tame the narrower inclinations of individual specialists and to bring collegial principles to the fore.”

An additional means of collegial control in the leading U.S. research universities is the required external peer review of the research published by university faculty candidates for promotion and tenure. These reviews are sometimes described by foreign observers of U.S. universities as ‘letters of recommendation’ (Thoenig and Paradeise, 2014), but this interpretation underestimates both their nature and function. At UNC-CH the chair of an academic department contacts distinguished faculty members at peer universities in the candidate’s field and sends them a selection of the relevant candidate’s research. These external reviewers are asked to assess the strengths and weaknesses of the research, its significance for the relevant field, and usually whether the specific candidate would be considered for promotion and/or tenure at the reviewer’s university. In this sense these external peer reviews are more similar to critical peer reviews of academic research proposals than to traditional letters of recommendation. These external assessments are taken seriously by the department faculty members responsible for making promotion and/or tenure recommendations at the requesting university and these external reviews are also forwarded along with all other relevant materials to the described school and university-wide faculty committees responsible for reviewing the quality of faculty personnel decisions. This reliance at AAU research universities on substantive, qualitative, reviews of a candidates’ published research is in marked contrast to the increasing adoption of journal citation and impact scores as a primary means for evaluating the research quality of academic staff in some EU nations (Thoenig and Paradeise, 2014).

Another distinctive collegial mechanism, indispensable to the development of American research universities, are research units (RUs) (Geiger, 2017). During World War II large research institutes funded by the federal government for war-related research were established within universities such as Harvard, UCB, and MIT. Some of these institutes continued to be administered by universities following the war as independent federal contract institutes. But these autonomous institutes, along with the post-war rapid expansion of federal support for academic research in engineering, science and medicine, aroused concerns in AAU universities about how best to design, organise, and perform externally funded research as well as assure an appropriate balance between research and teaching. Following the lead of MIT and UCB many of the AAU universities implemented post-war policies requiring a distinctive structure for new research units, regardless of their source of funding, which accommodated both the university’s educational and research missions. The post-war addition of these new units encouraged the rapid U.S. development of innovative interdisciplinary fields in the sciences and humanities as well as the creation of social science knowledge to address pressing societal issues.⁸

These new university policies on the structure of RUs effectively linked them to existing academic norms and collegial forms of governance. For example, the decision to create a new RU became a collective action by the relevant university faculty and/or school. Within AAU universities the RU director and key researchers usually had joint appointments as teaching faculty within existing disciplinary departments and many of the appointed research assistants were already enrolled as

research doctoral students in related fields.⁹ The internal governance of RUs paralleled the collegial processes previously described in AAU academic departments and these research units were also subject to university academic oversight as exemplified by the programme review process at UCB. The management and governance of AAU RUs were thus substantially different from the experiences of many northern European Universities (Meyer, 2016). There laboratories and institutes reflected the scholarly interests of a particular chaired professor, and assistants, resources, as well as equipment were brought together under the personal authority of the professor who served as head. In this semi-oligarchical system of governance there was a danger of more autocratic or even exploitive behaviour toward junior researchers.

The structure of RUs in the AAU universities has played a major role in reorienting U.S. academic research toward potentially applicable knowledge as well as helping to raise their institutional reputations globally (Geiger, 2019).

Graduate School

Another distinctive structure of collegial control in leading U.S. research universities is the graduate school, a second level of faculty organisation and governance designed to assure the quality and rigour of research doctoral education. Because of the acknowledged weaknesses early in the twentieth century of U.S. secondary education as well as the perceived negative effects of the elective system implemented in baccalaureate education, the leading universities supported the development of a vertical structural addition – a separate graduate school – to better link graduate education and research for the Ph.D. degree (Clark, 1995). This globally unique form of graduate education required doctoral students to: train as a cohort in each field, reside full-time at the university for a stated minimum period of time, finish a specified sequence of courses, complete stepwise student testing and certification to advance to the degree, and receive careful preparation for as well as complete a research-based dissertation (Meyer, 2016).

Today most research doctoral programmes in a U.S. university, including those offered by professional schools such as business and the health sciences, involve an elaborate micro-structure of course work and other requirements specified and monitored by academic departments in accordance with policies developed by the faculty of a university-wide graduate school (Clark, 1995). The graduate school faculty is composed of full-time, tenure-line faculty members appointed to an academic department, who at minimum have completed a Ph.D. degree. Unlike undergraduate admissions, which are usually controlled by an administrative office, research doctoral admissions are controlled by each academic department following graduate school guidelines which include Graduate Record Examination Scores for both domestic and foreign applicants. Other policy requirements include up to two years of mandatory and optional courses, and successful completion of a written and often oral comprehensive examination prepared by the departmental faculty, which attests to student mastery of knowledge covered in the coursework. During this preliminary period Ph.D. students are guided by a faculty advisor and often serve as research assistants in a faculty laboratory or related RU¹⁰. Only after successful completion of the departmental comprehensive exam is the student deemed a candidate for the Ph.D. degree by the

graduate school and able to begin a dissertation that reflects original research. The development of a dissertation proposal is guided by a committee of 3-5 members of the departmental graduate faculty approved by the Graduate School. This committee oversees and approves the student's choice of a dissertation topic as well as the adequacy of the proposed research, advises the student in its completion, and approves the written dissertation following an oral defence. U.S. doctoral training in the sciences, engineering, and health sciences is further strengthened by a 1-3-year postdoctoral research experience supported by the federal government. As with U.S. academic research, post-doctoral training is highly concentrated. Of the 66,247 individuals who received postdoctoral appointments in 2019, almost 70% were at the 64 public and private U.S. universities which are members of the AAU (NCSESb, 2021).

While the chair of the dissertation committee serves as the primary research advisor in the U.S., collective action and agreement by the committee members is required at every stage of the process. In sharp contrast to the described collegial processes governing graduate school, departmental, and dissertation committee behaviour in the U.S., many universities in northern Europe traditionally followed a 'master-apprentice' model of research doctoral education, awarding substantial autonomy to chaired professors, who individually admit, advise, and supervise the thesis of each student. In the U.S. the more flexible and expandable academic department replaces the hegemony of the single professor with the collegial controls of a disciplinary group.

Given the growing global competition in research doctoral education many EU universities are now voluntarily taking collective actions to improve their doctoral programmes "with defined processes that enhance quality and aim at coordinating individual efforts" (Byrne, Jørgensen, and Loukkola, 2013, p. 13). These collegial structures and processes include the establishment of university-wide doctoral schools, similar to U.S. graduate schools. In a number of EU universities, the collective academic faculty have implemented university-wide collegial rules and guidelines including: the adoption of doctoral committees to augment the expertise of the traditional thesis supervisor; the creation of university-level admissions committees for research doctoral education; and the creation of informal peer-learning groups and training opportunities for the exchange of experience and good practice among thesis supervisors. These voluntary efforts are altering the traditional hierarchical form of academic authority within some EU universities to a collegial form more reflective of America's leading research universities.

Conclusion

In the contemporary world strong research universities play a significant role in social and economic development and this has motivated many developed countries to attempt to emulate relevant American policies on higher education. The U.S. tradition of autonomous public and private universities, which actively compete for students, faculty, and particularly for peer-reviewed federal research grants, has encouraged the development of national policies in other countries encouraging greater competition among research universities. However, in a misperception of U.S. practices on university management and governance, several nations have

also adopted policies encouraging a more hierarchical, top-down, ‘managerial’ approach to university governance.¹¹ While U.S. national and state policies certainly have fostered stronger, more active university leadership than has been true in countries with influential national ministries of education, the preceding analysis of leading U.S. research universities reveals faculty self-governance and collegial controls have played a critical role in the success of America’s research universities.

The French sociologist Emmanuel Lazega (2005) has developed and empirically tested across countries a model of the mechanisms essential to effective professional behaviour in self-governing, knowledge-intensive, collegial organisations. Lazega’s model provides a useful means of summarising the noted collegial advantages of U.S. research universities. A first concept for effective collective action in collegial organisations are shared norms defining who in an institution is awarded the ‘authority to know.’ In the case of executive leaders in the U.S. AAU universities, presidents and provosts are invariably selected from those with distinguished academic careers as well as prior relevant leadership experience in research universities. This assures their leadership reflects critical academic values including a commitment to academic excellence and faculty self-governance. The tradition in AAU faculty personnel processes of granting authority only to professors to recommend and approve candidates for academic tenure and full professorships represents another example of this reliance on demonstrated academic expertise. Similarly, because academic personnel judgments involve highly specialised knowledge, the solicitation from distinguished peers at other respected research universities of letters evaluating the significance of a candidate’s research is a valued part of the promotion and tenure process in AAU institutions.

This attention to faculty expertise is especially vital in research universities, where decisions about research programmes and graduate education involve high-stakes evaluations and lengthy time horizons. The case of the significant structural reforms in the biological sciences at UCB further illustrates the role of the ‘authority to know.’ First the original identification of the problem was made by an external review committee composed of distinguished biological scientists following evaluation procedures developed collectively by the UCB Faculty Senate. Second, while the process to solve this significant problem was carefully guided by the President and Provost, and altered the traditional role of the Faculty Senate in external reviews, those awarded the authority to design and implement the appropriate solutions were proven intellectual leaders in the UCB biological sciences faculty with expertise in modern research methods. The Chancellor and Provost demonstrated their commitment to self-governance by early and continual consultation with the Faculty Senate throughout this change process. In the final analysis this engagement with the Faculty Senate provided a degree of trust among the overall faculty regarding the validity of the planned changes in the biological sciences as well as facilitated their eventual implementation.

A second valuable concept in Lazega’s model is ‘lateral control mechanisms,’ social structures which permit independent professionals to exchange information, cooperate, monitor each other, and take the collective actions necessary to achieve high quality, knowledge-intensive work. The early development in the AAU universities of structural mechanisms such as disciplinary

departments, RUs, graduate schools, as well as the multi-level peer review of academic personnel decisions, provided particularly influential mechanisms for faculty collective actions which strengthened the quality of education and research. These structures fostered needed integration among independent academic professionals and decentralised academic units as well as provided an effective means for the exchange of information about means of improving core professional tasks. Historically these types of ‘lateral control mechanisms’ were missing in northern Europe where significant personal authority was accorded individual chairs or professors within each university (Meyer, 2016) and even in England where academic autonomy was accorded to the faculty of each residential college such as at Oxford and Cambridge (Tapper and Palfreyman, 2010).

This distinctive linkage between executive leadership and collegial or peer control in U.S. AAU institutions was insightfully summarised by Thoenig and Paradeise in their study of organisational governance at MIT and UCB:

Whether institutionalised by mandatory procedures or achieved informally by opportunistic encounters and micro-processes, links are established between the organisation and faculty which can be called fully shared governance ... More than a right enjoyed by the faculty or a duty to be enforced by the administration, organisational cross-regulation plays this effective role of integrating two worlds, two logics of action, and two cultures that are different but also interdependent. Thus, the hierarchical authority is not questioned as to its legitimacy, because it acts under latent or explicit surveillance by the faculty. Cross-regulation reinforces identity feelings and behaviours inside the academic professional world itself. One statement is often expressed, ‘We are in charge,’ where ‘we’ refers to the profession acting as a community within the organisation. Academics consider that they as a community are recognised as the key stakeholders inside the institution, at least on an equal footing with top officers such as deans, provosts, presidents or chancellors and board members. They guard and expand a common wealth (Thoenig and Paradeise, 2014, p. 409).

NOTES

¹ In many countries the title ‘university’ is regulated by the national government, reserved for institutions which award doctoral degrees and are significantly engaged in the production of research. This regulation does not exist in the U.S. where public and private institutions, which are primarily engaged in baccalaureate education and do not offer the research doctorate, may still adopt the title university. Therefore, in this analysis I focus on American ‘research universities’ to clearly demarcate the discussed institutions and to better compare U.S. university governance and management with the policies of other countries.

² There are numerous global rankings of universities. But most such rankings are not based on any testable model of university performance and are methodologically questionable. The CWTS Leiden Rankings has adopted an exclusive focus on the scientific performance of universities and is based entirely on reliable and valid bibliographic data from scientific publications. Gadd, Holmes, and Shearer (2021) provide an informative assessment of the utility of global university rankings.

³ Influential academic research in many countries, including the U.S., is highly concentrated, so with regard research relatively few of any nation’s universities are actually competing in the same market (Dill and van Vught, 2010). This problem was exacerbated in England by the elimination of the binary distinction between polytechnics and universities in 1992, essentially treating all universities as if they are subject to equivalent market forces.

⁴ Two additional U.S. public universities are listed among the top 100 global universities in the Leiden rankings, but they are not eligible for AAU membership because they are health science institutions rather than comprehensive universities.

⁵ These data sources currently include institutional: federally funded research expenditures; faculty membership in the U.S. National Academy of Sciences; faculty members receiving awards, fellowships, and memberships in the National Research Council (NRC) list of highly prestigious awards; publication citation data; number of research/scholarship doctorates completed; **number of postdoctoral appointees; and total number of faculty – which permits normalisation of the previous data (AAU, 2021).**

⁶ Kaplan (2004) reported 19% of public institution presidents dealt most often with a state wide board, 46% with a system board, and 36% with a campus-based board.

⁷ Ironically, soon after the publication of his book on U.S. university leadership (Cohen and March, 1974) featuring the models of ‘organised anarchy’ and ‘garbage-can decision making,’ James G. March accepted a professorship at the Stanford Business School where he spent the rest of his academic career participating in that university’s highly systematic and rational management processes.

⁸ Significant examples of university RUs related to societal issues included The Bureau of Applied Social Research at Columbia, The Institute of Social Research at Michigan, and the National Opinion Research Center at Chicago (Geiger, 2018).

⁹ Unlike research institutes in many EU universities American RUs lack authority to award research doctoral degrees. In the U.S. this authority is limited to academic departments under graduate school guidelines.

¹⁰ In addition to experience in research, many U.S. research doctoral students will also receive experience as a teaching assistant in an undergraduate course taught by a faculty member in the related department.

¹¹ Ironically an effective example of a national regulatory policy, which actually increased and strengthened faculty collegial control in research universities, is the US experience with human subjects research (Dill, 2020). This federal policy requires each research university to develop a university-wide committee to review and approve all proposed research studies involving human subjects, specifies the types of faculty expertise necessary for these committees, requires the university educate all relevant researchers on the norms and ethical obligations essential for such research, and explicitly prohibits any university administrator from over-ruling the judgments of this committee (Dill, 2020).

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