available in an electronic format are easily distributed and adapted, making this an attractive proposition for ongoing development, and also for creating blended programs with online course provision alongside limited periods of on-campus attendance.

Another effect of technology that is relevant for this discussion is the phenomenon described by Carl Benedikt Frey and Michael A. Osborne, namely that of job polarization. They note that, with current developments in computer technology, significant shifts could be expected to occur in the nature of jobs in twenty years or so, with some jobs being performed entirely by computers. However, many jobs would not fall into this category: the type of jobs that would be least likely to be replaced by computer technology include jobs in which heuristics, human social interaction, working in cramped spaces, and innovation play a significant role.

All the global changes combined create a future in which intercultural contact will be the norm, rather than the exception. Thus, it follows that the skills, attitudes, and knowledge required to be interculturally effective should become a more significant part of a student's development than they have been heretofore.

Higher Education's Response

The congruence of a number of predictions about global development—including the expansion of a globally interconnected urban center network, a shift in economic activity toward emerging economies, a redistribution of the world's middle classes, job polarization, and technology—fuel a move toward a very different and rapidly changing environment in which our graduates will eventually work and live. Higher education institutions must ensure that future graduates are well equipped to deal with the challenges that such a world will present to them. Attributes required of these graduates include those that are a necessary outcome of the internationalization of higher education, namely international awareness and intercultural competence. An added bonus would be the further development of so-called 21st century skills resulting from international mobility. These attributes will prepare our graduates more adequately for the future. Notwithstanding the numerous changes mentioned in this article, mankind's current activities are creating other challenges, such as global warming, the uneven availability and distribution of fresh water and food, a decline in biodiversity, and significant human migration as a result of conflict. If global economic changes are not driving our graduates' need to become internationally aware and interculturally effective, then these other challenges will certainly push this agenda forward. It is up to us to do what we can to pave the way and ensure that our graduates

are prepared for the challenge. With such a massive agenda, one would have to ask whether we should not start with internationalization at the level of primary education, rather than introduce it only at the higher education level.   ■

Integrating Institutional Policies and Leadership for 21st Century Internationalization

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Higher education is challenged to respond to a wide set of motivations and purposes for internationalization. There is pressure to mainstream student, staff, and faculty access to international perspective, involving all institutional core missions, and making ubiquitous who is expected to contribute and to be involved. In consequence, the need for deliberate and systemic institutional policies and leadership to support a more pervasive internationalization becomes necessary.

Motivations behind internationalization now encompass diverse purposes and intended outcomes, including access to global sources of cutting edge knowledge and partnerships, building cross-cultural knowledge and skills, developing an informed citizenry and workforce for a global environment, enhancing the global standing of the higher education institution, and promoting peace and mutual understanding, to name some.

The outcome expectations for internationalization have expanded beyond teaching and learning to also strengthen cross-border scholarship, research, and problem-solving service missions. The contemporary stakeholders of internationalization are diverse, each with particular outcome preferences (e.g., faculty for scholarship, career opportunities, and reputation; students and families for learning, jobs, and access to global opportunities; institutional leaders for access to funding and improved institutional reputation and capacity building; governments for workforce development and connections to the global market place).

Governments can help higher education internationalize through policy and funding, but it is what happens within the higher education institution itself that is the decisive variable. As detailed in my 2015 publication, *Comprehensive Internationalization: Institutional Pathways to Success,* there is a strong case for success in institutional internationalization being dependent on the interplay of (a) effective change leadership, (b) a strong institutional culture for internationalization, (c) strategic inclusion, and (d) key administrative practices and policies. These four strategies need to be integrated and mutually reinforcing. None are sufficient on their own; all are necessary.

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Extend the Leadership Team
Leadership is needed from the top (presidents, vice-chancellors, provosts, deans); from the middle (directors and chairs); and from the base (influential faculty, staff, and students). Effective leadership for internationalization is neither solely top-down, nor solely bottom-up; rather, it is both. Top leadership sets institutional tone, reaffirms institutional values and coordinates overarching priorities, but the work and creativity of internationalization depends on the faculty, key staff, and academic and support units.

While the international office can play important facilitation and coordination roles, internationalization will not be robust without a diverse leadership team of people and offices from throughout the institution being fully involved. The international office, regardless of its particular form must effectively partner with leadership at all levels throughout the institution.

Build a Supporting Institutional Culture
Institutional culture defines driving values and priorities in practice. Comprehensive and strategic internationalization is stymied if there is no widespread culture to support it. Building such a culture relies in part on an institution-wide dialog up, down and throughout to educate and mobilize attention to integrating international dimensions into all core missions—building understanding of what it means, why it is important, and how it strengthens an institution and

its intellectual core in the 21st century. A widespread dialog builds an appreciation for all to play roles in the internationalization process.

Engage in Strategic Inclusion
Strategic inclusion incorporates internationalization into key institutional processes and decisions relating to missions and values, policy and budget planning, institutional branding and human resource management, and contributes to key moments of institutional change during leadership transitions, quality reviews, curricular revisions, and strategic planning. It is not that internationalization dominates decision making in these arenas, but rather that it becomes fully and consciously incorporated into them.

Implement Key Policies and Practices
Institutional case stories and the literature point to several actions that further strengthen the position and role of internationalization in higher education. Policies and practices of considerable importance include:

Define Goals, Success, and Intended Outcomes. A clear sense of intended goals and expected valued outcomes from internationalization provides the basis for directing people toward action and for defining success. Different stakeholders have particular priorities for defining success; and institutions also will differ on how they define it. The key is to identify the success motivators for the particular institution; even better are assessments that demonstrate actual outcomes along these lines.

Reward Success. What is counted and rewarded is what counts and motivates action. Students look for what counts in their curricula and matriculation requirements and what will advance their learning and careers. Faculty want to advance their careers, strengthen their intellectual reputations, and improve access to funding and scholarly opportunities. Institutions want to build their rank, stature, reputations, and access to support. Will efforts of people and units to internationalize be rewarded in a way which is consonant with such objectives? If international effort is not even counted in curricula or in personnel actions, or at best only tolerated, the motivations are weak; if it is encouraged, supported and expected, motivations strengthen. Does the institution reward international engagement and activity by students and staff?

Integrate Internationalization into Existing Missions and Dual Purpose Funding. If internationalization is seen to add another mission to the traditional three (teaching, scholarship, and service), it will be marginalized. If internation-

alization becomes integral to strengthening existing missions, it becomes much more sustainable. There is not enough new money available at almost any institution to fund internationalization completely on its own. There are many examples of institutions successfully funding internationalization by dual purposing existing programs and expenditures to include an international dimension: for example, expanding existing faculty domestic expertise and research priorities to include cross-border work and partnerships; taking existing courses and curricula; and integrating international content and dimensions.

Challenge the Status Quo and Encourage Adaptive Bureaucracy. Strategic and comprehensive internationalization is almost certain to require organizational change. Yet, in most organizations the status quo and comfort of the familiar is a powerful narcotic inhibiting change. However, internationalization forces change in curricula, research foci, and inclinations toward forging partnerships abroad. Partnerships with institutions in other countries and cultures will require adaptability and a willingness to recognize that "our way" is not the only way of doing things; administrative policies and procedures will change. A key enabler of change is building an institutional openness to examining policies, procedures, and rules that were designed for a different age and primarily for domestic stakeholders.

Recruit and Develop Human Resources for Internationalization. Internationalization is driven and delivered by faculty, staff, and students, who at a minimum are interested in and see the importance of international engagement. An important enabling condition therefore is whether the institution has and seeks to attract such individuals. Is there an institutional commitment to international engagement in its branding, in its messages to prospective students, and when advertising faculty vacancies? Furthermore, what commitment is the institution willing to make to further educate and develop its existing faculty and staff for international activity?

IN SUM

Institutions will vary substantially in the exact ways they approach more comprehensive and strategic internationalization. There is no best model per se; rather, there are several valid models. The "best" model for an institution is the one that fits its particular culture, capabilities, core values, and missions. Practice must be fashioned from within, but giving attention to the leadership and policy factors above in institutionally relevant terms helps to build success. ∎

"Internationalists" and "Locals" in Research: Similar Productivity Patterns Across Europe

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The relationships between international cooperation and research productivity have been widely discussed in research literature, and there is a general assumption that international collaborative activities in research lead to an increase in research productivity. International research collaboration is most often found to be a critical factor in predicting high research productivity.

A recent study investigated how strongly international collaboration in research is correlated with higher than average research productivity and whether the relationships found hold across all academic disciplines. Analysis was conducted with reference to two separate groups of academics, termed internationalists and locals. We define "internationalists" as academics indicating their involvement in international research collaboration and "locals" as academics indicating their lack of involvement in it. We used the data created by the global CAP and the European EUROAC projects on the academic profession—"The Changing Academic Profession" and "The Academic Profession in Europe: Responses to Societal Challenges," respectively. The primary data come from 11 European countries, with 17,211 usable cases.

INTERNATIONALIZATION PRODUCTIVITY, AND ACADEMIC FIELDS

Our research demonstrates that across all major clusters of academic fields, the difference in productivity rates between European "internationalists" and "locals" is statistically significant. Those European academics who were collaborating with international colleagues in research had published, on average, substantially more articles in academic books or journals, than their colleagues in the same academic field who were *not* recently collaborating internationally.

The percentage of academics collaborating internationally in research across Europe is high and it is an activity reported, on average, by two thirds of academics. There are huge cross-disciplinary and cross-national differences, though. The share of "internationalists" varies significantly